

PRProspectus 2025/2026

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2025/2026



Faculty of Applied Sciences
UNIVERSITY OF SRI JAYWARDENEPURA, SRI LANKA

A Journey through Time

The Faculty of Applied Sciences of the University of Sri Jayewardenepura was established in 1961 and is the second oldest faculty at the University. With a rich history, a large and diverse student body, a highly qualified academic staff, and a broad range of courses, the faculty plays a crucial role in shaping the country's future of science and technology.

It was initially established as a Faculty of Science and offered programs in core science disciplines. Then, the faculty expanded with new and revolutionary ideas and introduced new courses covering applied aspects of science into its curriculum. Additionally, opening the gates of the Physics and Mathematics Departments to Bioscience students marked a significant step forward, and the Faculty of Science was converted to the first Faculty of Applied Sciences of the country in 1973.

The faculty hosts approximately 3,000 students and provides a supportive and dynamic learning environment that encourages both classroom learning and practical experiences, including industrial placements, work shadowing, and field trips. These opportunities help students become familiar with workplace culture and expectations. Further, the faculty is blessed with a highly qualified academic staff comprising over 150 members, who are active researchers and leaders in their respective fields.

The faculty offers a wide range of undergraduate and postgraduate programs. The undergraduate program offers degrees in Chemistry, Industrial Chemistry, Polymer Science and Technology, Biology, Food Science

and Technology, Plant Biotechnology, Microbiology, Plant Biology, Zoology, Aquatic Resource Management, Environmental Management & Forestry, Mathematics, Genetics and Molecular Biology, Physics, Statistics, Computer Science, Sport Science and Management and Polymer Science and Industrial Management under eleven departments and three units.

The faculty offers ten postgraduate courses in addition to the undergraduate courses, which are available in various subjects and are both exciting and constructive. The faculty's research initiatives and collaborations further enhance its reputation as a leading institution for applied sciences in Sri Lanka and beyond.

Many alumni hold significant positions in academia, government, and industry, contributing to the country's development. The faculty is optimistic that this year's students will excel academically and make meaningful contributions to society as proud graduates.



Professor Upul Subasinghe **Dean, Faculty of Applied Sciences, University of Sri Jayewardenepura**

It is my great pleasure to warmly welcome you to the Faculty of Applied Sciences as you embark on this important and exciting phase of your academic journey in 2026. You are now part of a vibrant academic community that is committed to excellence in teaching, research, and holistic student development.

Our Faculty takes pride in maintaining high academic standards, supported by a team of well-qualified, experienced, and dedicated staff. We offer a diverse range of academic programs designed to equip you with strong theoretical knowledge, practical skills, and critical thinking abilities. Our curricula are continuously updated to align with global trends and industry needs, ensuring that you are well-prepared for the challenges of a rapidly evolving world.

Research is a cornerstone of our Faculty. You will have opportunities to engage in innovative research across a wide spectrum of disciplines, guided by academics who are actively contributing to national and international scholarship. We strongly encourage you to cultivate curiosity, creativity, and a spirit of inquiry throughout your time here. Beyond academics, we believe in nurturing well-rounded individuals. You are encouraged to actively participate in extracurricular activities, including sports, student societies, and community engagement and CSR initiatives. These

experiences will enrich your university life, build leadership skills, and foster lifelong friendships.

Our Faculty is known for its friendly and supportive environment, where close interactions between students, academic staff, and non-academic staff create a sense of belonging and mutual respect. We are here to guide and support you every step of the way.

Guided by our motto, “Vijja Uppaththan Setta” (knowledge is the supreme wealth), we are committed to shaping you into globally competent, responsible citizens.

I wish you every success in your academic and personal endeavors.

Senior Professor Upul Subasinghe
Dean
Faculty of Applied Sciences

*The Faculty of Applied Sciences
of the University of Sri Jayewardenepura
is committed to excellence in
teaching, research and in enriching
its students in many facets of life*



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Undergraduate Courses Degree Programmes





AMT

Applied Mathematics

Offered by the Department of Mathematics

“Applied Mathematics integrates mathematical theory and specialized knowledge to model, analyse, and solve real-world problems.”

B.Sc. Honours Degree in Applied Mathematics

Course Code: AMT

Duration: 4 years

Subject Combinations: Refer pages 162-167

For whom?

The BSc Honours in Applied Mathematics is designed to offer a robust foundation for advanced academic pursuits and professional careers in the dynamic field of applied mathematics. This program is tailored for students with strong theoretical grounding and

practical interests, aiming to deepen and broaden their understanding of mathematical principles and their real-world applications.

Career opportunities

An Honours Degree in Applied Mathematics equips graduates with highly transferable competencies and opens pathways to career opportunities in diverse sectors such as science, technology, engineering, finance, and other fields that rely on the practical application of mathematical techniques.

Course overview

Students will explore a wide array of topics from abstract mathematical techniques to numerical computation, mathematical modelling, and computer simulation, while learning to apply these tools to solve complex, real-life problems. The curriculum provides excellent preparation for postgraduate study and research in applied mathematics, while also nurturing essential skills such as logical reasoning, analytical thinking, programming, data analysis, and effective communication.

Course structure

The course units in the Honours degree program are designed to provide students with an in-depth knowledge in both classical and modern topics of Applied Mathematics. Students are also offered courses in related fields such as Statistics and Computer Science that are designed not only to emphasize the power of Applied Mathematics, but also to develop their skills in the respective fields that are of essential importance for their future careers.

Through the Applied Mathematics Research Project and the Industrial Internship, the program enables students to appreciate the practical relevance of their acquired knowledge while developing the advanced skills needed to tackle real-world challenges. These experiences also provide valuable opportunities for students to strengthen their soft skills, preparing them to excel in professional and industrial environments.

Selection

Those who have followed subject combinations including MAT are eligible for this program. The selection will be based upon the GPA obtained for MAT courses in first two years. The number of candidates depend on the available resources of the department of Mathematics.

For further information please contact:

Dr. R. Sanjeewa

Head/Department of Mathematics

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Telephone: +94 112803470 / +94 112758386

BSc Honours Degree in Applied Mathematics

FIRST YEAR

Semester I

MAT 1013	Discrete Mathematics	c
MAT 1032	Differential Equations	c
MAT 1040	Scientific Computing I	c
MAT 1051	Basic Mathematics	o#

Semester II

MAT 1053	Linear Algebra I (Prerequisites: MAT 1013)	c
MAT 1072	Calculus I	c
MAT 1080	Scientific Computing II (Prerequisites: MAT 1040)	c

SECOND YEAR

Semester I

MAT 2013	Linear Algebra II (Prerequisites: MAT 1053)	c
MAT 2062	Numerical Methods	c

Semester II

MAT 2073	Calculus II (Prerequisites: MAT 1072)	c
MAT 2082	Partial Differential Equations I	c

THIRD YEAR

Semester I

AMT 3572	Mathematical Modeling I	c
AMT 3582	Nonlinear Differential equations and Dynamical Systems	c
PMT 3202	Abstract Algebra (Prerequisites: MAT 2013)	c*
PMT 3213	Mathematical Analysis (Prerequisites: MAT 1013)	c*
PMT 3072	Honours Linear Algebra (Prerequisites: MAT 2013)	o
PMT 3103	Topology I (Prerequisites: PMT 2042)	o
PMT 3113	Honours Real Analysis I (Prerequisites: PMT 2042)	o
AMT 3593	Financial Mathematics	o

Course Type

-c-
Core

-o-
Optional

o#
Those who have done Combined Mathematics as a subject in A/L are not allowed.

c*
Those who have done Pure Mathematics as a subject in the first or second year are not allowed.

Course Type			
-c- Core	AMT 3602	Computer Algebra	o
	AMT 3612	Operational Research I	o
	AMT 3622	Machine Learning I (Based on CSC 369 2.0 Machine Learning)	o
-o Optional	Semester II		
	AMT 3632	Complex Variables	c
	AMT 3642	Partial Differential Equations II (Prerequisites: MAT 2062)	c
	AMT 3652	Mathematical Methods (Prerequisites: MAT 2062)	c
	AMT 3662	Numerical Analysis	c
	AMT 3672	Actuarial Mathematics	o
	AMT 3682	Operational Research II (Prerequisites: AMT 3612)	o
	AMT 3692	Design and Analysis of Algorithms	o
	AMT 3702	Machine Learning II (Based on CSC 375 2.0 Machine Learning II) (Prerequisites: AMT 3662)	o
	PMT 3153	Honours Real Analysis II (Prerequisites: PMT 3113)	o
	FOURTH YEAR		
Semester I			
AMT 4013	Advanced Numerical Techniques	c	
AMT 4022	Seminar and Report Writing	c	
AMT 4033	Optimization	c	
AMT 4042	Mathematical Modelling II	o	
PMT 4013	Measure Theory (Prerequisites: PMT 3153)	o	
AMT 4998	Applied Mathematics Research Project	c	
Semester II			
AMT 4052	Applied Optimal Control	c	
AMT 4063	Applied Graph Theory	o	
PMT 4073	Functional Analysis (Prerequisites: PMT 3103 and PMT 4013)	o	
AMT 4986	Industrial Internship Project	c	
AMT 4998	Applied Mathematics Research Project	c	



ARM

Aquatic Resources Management

Offered by the Department of Zoology

“Aquatic Resource Management is designed to tackle the pressing challenges facing our aquatic environments. The program trains skilled graduates to mediate science, policy, and community, leading the way in the sustainable stewardship of planet’s most vital resource.”

B.Sc. Degree Programme with Aquatic Resources Management

Course code: ARM

Duration: 3 Years

Subject combinations: Refer pages 162 - 167

For whom?

This program is for Biological Sciences stream students to apply their knowledge in solving real-world problems and pursuing careers in Aquatic

Resources Management.

Career opportunities

As an island nation, Sri Lanka’s future is deeply connected to the sustainable management of its rich aquatic resources. Sri Lanka is endowed with extraordinary marine and freshwater biodiversity and a thriving resource; the full potential of this wealth remains largely untapped. To bridge this gap and lead this vital sector, there is an urgent need for a new generation of experts equipped with specialized, forefront with a diverse range of impactful career



applied knowledge in Aquatic Resource Management. ARM graduates will be uniquely positioned at the paths, including research, driving sustainable innovation, national policy planning, aquaculture and fisheries, environmental consultants, and pioneering their own ventures.

Course overview

This program is designed to forge the next generation of aquatic resource professionals through a comprehensive education that balances deep specialist knowledge with the essential skills for leadership in aquatic stewardship.

The core curriculum builds a rigorous scientific understanding of all major aquatic ecosystems. Beyond scientific training, the program emphasizes comprehensive professional development. Graduates may emerge not merely as scientists but as effective communicators, creative problem-solvers, and collaborative collaborative leaders.

collaborative leaders. Through integrated training in communication, teamwork, leadership, and perseverance, the program ensures graduates are fully prepared to secure rewarding careers and make a meaningful impact on the future of aquatic environments.

Course structure

Students are required to take course units equaling a minimum cumulative credit value of 27.0. Course units are classified as compulsory, core, and optional courses.

B.Sc. Honours Degree Programme in Aquatic Resources Management

Duration: 4 Years

Career opportunities

The Honours Degree prepares graduates for high-impact careers as specialist researchers, policy advisors, and scientific consultants. Their advanced training provides a pathway to leadership roles within academia—conducting pioneering research to resolve critical knowledge gaps—as well as within government ministries, where they inform national policy on aquatic environments, and within private consultancy firms, where they lead projects dedicated to sustainable management and conservation of aquatic resources.

Course overview

The programme is designed to cultivate a new generation of experts equipped with advanced skills in contemporary applied science. This program delivers a superior level of specialists with deeper and broader knowledge, complemented by rigorous field and practical training that develops high-order analytical and communication abilities. A cornerstone of the programme is the final-year research project, which is pivotal in advancing a student's capacity for original research, refining core analytical skills, and enhancing professional competencies. This comprehensive education is ideally suited for high-achieving students targeting careers in academia, specialist research, or further graduate studies.

Selection

Selection of students for the Honours Degree Programme is based on performance in the first two years, and the intake is based on the availability of staff and resources.

Instruction and assessment

Students in both the General and Honours Degree programmes will learn from diverse and eminent lecturers with distinguished track records in academia and research. The Department of Zoology fosters a comprehensive learning environment that integrates lectures, laboratory practicals, demonstrations, tutorials, field studies, and project assignments. This multifaceted approach ensures a balanced development of specialist knowledge and hands-on skills. Student progress is continuously assessed through a variety of methods, including end-of-semester examinations, practical tests, presentations, reports, and group assignments.

For further information please contact:

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Head/Department of Zoology

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Aquatic Resources Management

B.Sc. Degree Course Units

Each student should take course units having minimum cumulative credit value of 27.0

FIRST YEAR

Semester I

ARM 1011	Basic Limnology	c
ARM 1021	Oceanography	c
ARM 1031	Aquatic Microbiology and Water Quality	c
ARM 1041	Basic Mathematics (Based on MAT 1041)	c**
ARM 1061	Laboratory and Field Work	a
ARM 1091	Aquatic Invertebrates	c
ARM 1121	Water Safety and Basic Lifesaving Skills	o*

Semester II

ARM 1051	Ichthyology	c
ARM 1071	Ecology of Plankton and Benthos	c
ARM 1081	Aquatic Vegetation	c
ARM 1101	Water Chemistry	c
ARM 1111	Laboratory and Field Work	a

SECOND YEAR

Semester I

ARM 2012	Principles in Aquaculture and Aquaculture Engineering	c
ARM 2022	Marine Fisheries Management	c
ARM 2031	Laboratory and Field Work	a

Semester II

ARM 2052	Culture Methods of Finfish and Shellfish	c
ARM 2061	Inland Fisheries	c
ARM 2071	Fish Genetics	c
ARM 2081	Laboratory and Field Work	a

Course Type

-c-
Core

-o-
Optional for those
doing Aquatic
Science

-a-
Compulsory

._.
Examination grade
is not counted for
GPA.

._*._
Compulsory
with a pass (D+);
Grade will not be
considered for
GPA

Course Type

-c-
Core

-o-
Optional for those
doing Aquatic
Science

-a-
Compulsory

THIRD YEAR

Semester I

ARM 3012	Surface and Ground Water Ecology	o
ARM 3022	Fundamentals of GIS	o
ARM 3031	Wetland Management	o
ARM 3051	Ornamental Fish Culture	o
ARM 3061	Water Pollution and Legislations in Water Resources Management	o
ARM 3071	Laboratory and Field Work	a
ARM 3082	Aquatic Toxicology	o
ARM 3162	Biometrics (based on STA 3492 Introductory Statistics)	c

Semester II

ARM 3042	Nutrition (Based on ZOO 3272)	o
ARM 3092	Marine and Coastal Ecology	o
ARM 3101	Ecophysiology	o
ARM 3111	Integrated Watershed Management	o
ARM 3121	Aquatic Vertebrate Conservation	o
ARM 3132	Industrial Training	o
ARM 3141	Laboratory and Field Work	a

B.Sc. Honours Degree Aquatic Resources Management Course Units

Part I

Semester I

ARM 3012	Surface and Ground Water Ecology	o
ARM 3022	Fundamentals of GIS	o
ARM 3031	Wetland Management	o
ARM 3051	Ornamental Fish Culture	o
ARM 3061	Water Pollution and Legislations in Water Resources Management	o
ARM 3082	Aquatic Toxicology	o
ARM 3151	Coastal Zone Management	o
ARM 3171	EIA Methodologies	o
ARM 3242	Laboratory and Field Work	a
ARM 3162	Biometrics (based on STA 3492 Introductory Statistics)	c

Semester II

ARM 3042	Nutrition (Based on ZOO 3272)	o
ARM 3092	Marine and Coastal Ecology	o
ARM 3101	Ecophysiology	o
ARM 3111	Integrated Watershed Management	o
ARM 3121	Aquatic Vertebrates Conservation	o
ARM 3132	Industrial Training	c
ARM 3192	Research Methodology	c
ARM 3222	Current Topics in Aquatic Resources Management	a
ARM 3252	Laboratory, Field Work and Museum Work	a

Part II

Semester I

ARM 4012	Advanced Limnology	o
ARM 4022	Pond and Hatchery Management Practices in Aquaculture	o
ARM 4032	Marine Biotechnology	o
ARM 4042	Fish Post-harvest Technology	o
ARM 4052	Aquatic Biomonitoring	o
ARM 4062	Review of Literature	a
ARM 4071	Legislations in Fisheries Management	o
ARM 4193	Special Topics in Aquatic Resource Management	a
ARM 4152	Marine Resources Management	o
ARM 4212	Statistical Methods (based on STA 4992 Statistical Methods)	o

Semester II

ARM 4088	Research Project (Semester I & II)	a
ARM 4102	Fish Population Dynamics	o
ARM 4112	Diseases of Cultured Fish and Shrimp Species	o
ARM 4121	Soil and Geology in Aquatic Systems	o
ARM 4132	Aquatic Wildlife Conservation	o
ARM 4142	Fisheries Economics and Marketing	o
ARM 4202	Microbial Ecology	o

Course Type

-c-
Core

-o-
Optional for those
doing Aquatic
Science

-a-
Compulsory



BIO Biology

Offered by the Departments of Zoology and Botany

“Biology is a fundamental and applied science which is centered on the structure, function, interactions, evolution and taxonomy of biological organisms”

B.Sc. Degree Programme with Biology

Course code: BIO

Duration: 3 Years

Subject combinations: Refer pages 162-167

For whom?

For students from biological sciences streams who are interested in pursuing careers in fundamental biology.

Career opportunities

Sri Lanka boasts a rich endemic biodiversity and reasonable diversity in ecosystems, within which

there is a wealth of fauna and flora and bioactive compounds, which serve as invaluable remedies for a host of infectious and non-communicable diseases. In order to harness the potential of our island nation in biodiversity and biological resources for conservation, eco-tourism and bioprospecting endeavors as well as for the appreciation of biology it is important that a pool of talent is developed who are equipped with specialist and applied knowledge in fundamental biology. Therefore, by the provision of skilled graduates in contemporary Applied Biology, the Departments of Botany and Zoology, contribute towards national development through its alumni.

scope in Biology is reasonably broad in its spectrum off employment opportunities with prospects of joining government ministries, private organizations, eco-tourism ventures, conservation organizations, ecological establishments, museums, universities and secondary schools, as well as providing opportunity for entrepreneurship.

Course overview

The specialist subject, Biology, aims to instill in students, an appreciation for plant and animal sciences, especially in relation to the acquisition, integration and application of specialist knowledge in contemporary biology, in order to ensure the holistic development of the undergraduate community. The development of a student's appreciation of fundamental biology is molded through the impartation of relevant and timely topics in contemporary applied biology, including, Genetics and Molecular Biology, Insect Pest Management, Plant Propagation and Horticulture Human Nutrition, Natural Resources and their Management, Ecology and Biological Statistics. Outside of the key subject areas, students are equipped with communication and problem solving skills, teams work and perseverance and leadership qualities to ensure their career readiness to secure a future within the 21st century workforce.

Course structure

Biology will contribute one third of the B.Sc. degree program within the framework of a permitted subject combination. Students are required to take course units equaling or exceeding a cumulative credit value of 27.0 points. Course units are classified as

compulsory, core and optional course units and the course units are designed to provide the student with specialist knowledge and skills required in contemporary Biology.

B.Sc. Honours Degree Programme in Biology

Duration: 4 years

Career opporrunities

The career opportunities available for graduates of the Special Degree Program in Biology will be centered on academia, consultancies at government and non-government agencies, and as researchers in a diverse range of positions.

Course overview

The B.Sc. Degree in Biology aims to provide a group of experts with required skills in applied Biology. The program imparts a higher level of specialist knowledge and practical training and is ideally suited for students with aspiration for graduate studies and further research training.

The core strengths of the Honours Degree Program are coverage of specialist knowledge, the provision of a higher degree of practical skills which are transferable beyond the learning environment, higher levels of analytical and communication skills and in whole, a well rounded education program suited for research endeavors or higher studies under specialist topics. The final year research projects is of major significance to the Honours Degree Program because it advances a student's capacity to undertake research



endeavors, develops core analytical skills and expands communication, networking and language skills.

Selection

Selection of students for the Honours Degree Program is based on the student's performance in the first two years of the academic program.

Instruction and assessment

The impartation of education to students in B.Sc. programme and Honours Degree programs will be conducted by an eminent group of lecturers, with proven track records in academia and research. The teaching environment within the Departments of

Botany and Zoology consists of lectures, laboratory practicals, field studies and project assignments which ensure all-round development of students in specialist knowledge and practical training. The modes of assessment include end-of-semester examinations, practical tests, presentations and reports.

For further information please contact:

Head/ Department of Botany and Head/ Department of Zoology

Prof. L.D.C. Peiris
Coordinator/ Biology Programme
E mail: dinithi@sci.sjp.ac.lk

Biology

B.Sc. Degree Course Units

FIRST YEAR

Semester I

BIO 1011	Biology of Cell (Based on ZOO 128 1.0)	c
BIO 1082	Diversity of Life on Earth	c
BIO 1091	Organization and Evolution (Based on ZOO 126 1.0)	c
BIO 1211	Laboratory and Field Work	a

Semester II

BIO 1042	Plant form and Function	c
BIO 1101	Biological Statistics	c
BIO 1111	Principles of Ecology	c
BIO 1221	Laboratory and Field Work	a

SECOND YEAR

Semester I

BIO 2011	Parasitology (Based on ZOO 219 1.0)	c
BIO 2021	Microbiology	c
BIO 2082	Animal form and Function (Based on ZOO 230 1.0)	c
BIO 2211	Laboratory and Field Work	a

Semester II

BIO 2071	Genetics [#]	c
BIO 2091	Fundamentals of Environmental Science ^{##} (Based on ZOO 129 1.0)	c
BIO 2101	Host Microbial Interactions	c
BIO 2111	Animal Developmental Biology (Based on ZOO 228 1.0)	c
BIO 2231	Plant Developmental Biology	c
BIO 2221	Laboratory and Field Work	a

Course Type

-a-
Compulsory

-c-
Core

-o-
Optional

-#-
Not offered for students who are following Genetics and Molecular Biology as a subject.

-##-
Only the students following Genetics and Molecular Biology as a subject can take this course

-###-
Students who have followed Genetics and Molecular Biology as a subject in the first two years are not allowed to take this course

Course Type

-a-

Compulsory

-c-

Core

-o-

Optional

-#-

Not offered for students who are following Genetics and Molecular Biology as a subject.

-##-

Only the students following Genetics and Molecular Biology as a subject can take this course

-###-

Students who have followed Genetics and Molecular Biology as a subject in the first two years are not allowed to take this course

THIRD YEAR

Semester I

BIO 3152	Horticulture and Landscaping	o
BIO 3301	Molecular Biology [#]	o
BIO 3341	Plant Tissue Culture (based on PBT 322 1.0)	o
BIO 3432	Fisheries and Aquaculture	o
BIO 3442	Biotechnology ^{###}	o
BIO 3452	Bioinformatics ^{###}	o
BIO 3461	Bioethics	o
BIO 3522	Plant Pathology	o
BIO 3211	Laboratory and Field Work	a
BIO 3482	Industrial Training	o

Semester II

BIO 3082	Nutrition (based on ZOO 327 2.0)	o
BIO 3102	Economic Botany and Plantation Crop Resources	o
BIO 3531	Animal Behavior	o
BIO 3541	Microbial Ecology	o
BIO 3551	Immunology ^{###}	o
BIO 3221	Laboratory and Field Work	a

B .Sc. Honours Degree Course Units

Honours Part I

Semester I

BIO 3152	Horticulture and Landscaping	o
BIO 3261	Environmental Toxicology	o
BIO 3341	Plant Tissue Culture	o
BIO 3352	Special Topics in Biology*	o
BIO 3432	Fisheries and Aquaculture	o
BIO 3442	Biotechnology ^{###} (based on GMB 311.2)	o
BIO 3451	Bioinformatics ^{###}	o
BIO 3461	Bioethics	o

BIO 3522	Plant Pathology	o
BIO 3571	Tropical Diseases	o
BIO 3912	Laboratory and Field Work (Animal Dissections + Museum Techniques)	a

Semester II

BIO 3082	Nutrition (based on ZOO 327 2.0)	o
BIO 3102	Economic Botany and Plantation Crop Resources	o
BIO 3202	Research Methodology	o
BIO 3231	Environmental Impact Assessment	o
BIO 3252	Industrial Biotechnology	o
BIO 3373	Current Topics in Biology*	c
BIO 3482	Industrial Training	c
BIO 3531	Animal Behavior	o
BIO 3541	Microbial Ecology	o
BIO 3551	Immunology ^{###}	o
BIO 3561	Green Technology	o
BIO 3931	Nanobiology (based on PBT/MBL 393 1.0)	o
BIO 3942	Neurobiology (Based on GMB 408 2.0)	o
BIO 3222	Laboratory and Field Work	a

Honours Part II

Semester I

BIO 4022	Wildlife Conservation & Management (Based on ZOO 408 2.0)	o
BIO 4121	Product Development and Marketing Management (Based on PBT 494 1.0)	o
BIO 4211	Recent Trends in Ethnobotany	o
BIO 4232	Virology	o
BIO 4272	Post-Harvest Technology (Based on PBL 490 2.0)	o
BIO 4332	Cell and Tissue Culture	o
BIO 4342	Cell Signaling	o
BIO 4352	Herbal Technology	o
BIO 4362	GIS & Mapping	o
BIO 4452	Arthropod Vectors of Human Diseases (Based on ZOO 409 2.0)	o

Course Type

-a-
Compulsory

-c-
Core

-o-
Optional

-#-
Not offered for
students who are
following Genetics
and Molecular
Biology as a subject.

-##-
Only the students
following Genetics
and Molecular
Biology as a subject
can take this course

-###-
Students who have
followed Genetics
and Molecular
Biology as a subject
in the first two years
are not allowed to
take this course

Course Type			
	BIO 4502	Applications in Immunology	o
	BIO 4512	Computational Drug Designing	o
-a- Compulsory			
-c- Core			
-o- Optional			
-#- Not offered for students who are following Genetics and Molecular Biology as a subject.			
-##- Only the students following Genetics and Molecular Biology as a subject can take this course			
-###- Students who have followed Genetics and Molecular Biology as a subject in the first two years are not allowed to take this course			
	Semester II		
	BIO 4081	Literature Survey	c
	BIO 4158	Research Project	c
	BIO 4261	Natural Resources and their Management	o
	BIO 4292	Advanced Applied Microbiology (Based on PBL 492 2.0)	o
	BIO 4412	Molecular Systematics (Based on ZOO 426 2.0)	o



CHE Chemistry

Offered by the Department of Chemistry

“Chemistry is a branch of natural science that deals with properties of molecules, their chemical reactions and laws that describe molecular interactions. Chemistry is a central science and has interactions with many other subjects”

B.Sc. Degree Programme with Chemistry

Course code: CHE

Duration: 3 Years

Subject combinations: Refer pages 162-167

For whom?

Students from both biological and physical science streams who are interested in pursuing careers related to a wide range of chemical disciplines in order to

address the important problems that lie at the interface of chemistry and closely related subjects. The intake is limited to a maximum of 400 students per academic year.

Career opportunities

Chemistry is central to all sciences and is important to scientists and professionals such as doctors, biologists, engineers, physicians, pharmacists, nurses, and science teachers. There is a high demand for chemists

in public sector organizations, and manufacturing and service industries in the private sector. The gained experience will take you on to many diverse and rewarding career pathways.

Course overview

Courses incorporate the most recent advances in the discipline and provide students with a strong foundation in the fundamentals of chemistry. More specialized optional courses which cover a wide range of topics to suit their future goals are offered. Courses in chemistry are designed to meet the needs of the country along with transferable skills such as communication, problem solving, team work, self-direction, leadership and to prepare the students to seek employment with confidence.

Course structure

At the undergraduate level, a three year course is offered to the general degree students who offer other subject disciplines for the degree. All chemistry students follow all the first year and second year course units. These include compulsory and core units, which are designed to provide students with essential knowledge and skills that are required to specialize in chemistry as well as to other students who require a solid chemistry foundation in related disciplines. Based on their performance at the end of the second year, some are selected to follow the honours degree programme.

General degree students in their third (final) year, have a range of optional courses in more applied areas of the subject to choose from. The compulsory practical class comprises of 3 hour classes for 10 weeks lasting a total of 90 hours laboratory work for each year, which involves the three main branches of chemistry (Organic, Inorganic, and Physical). The practical is intended to provide students with hands on experience in analytical, technical, instrumental and problem solving skills required in many career pathways.

B.Sc. Honours Degree Programme in Chemistry

Duration: 4 Years

For whom?

This degree is designed for those who wish to gain an in depth knowledge, skills and broader perspective in chemistry as demanded by the industry and academia.

Career opportunities

The B.Sc. Honours Degree in Chemistry, offered by the Department of Chemistry is aimed at training professionals in the field of chemistry with insight, skills, advanced and updated knowledge. The strong foundation laid by the Honours degree would enable the students to acquire postgraduate qualifications from recognized universities which would lead the



career path in academia in universities and research institutes in Sri Lanka.

Course overview

B.Sc. Honours degree courses are carefully designed to meet the demands of specialized industries and postgraduate institutions. The courses are a combination of theory and practical with integrated soft skills to make students confident in following their chosen career paths. The students following the special degree programme in chemistry are well trained to join any university worldwide as graduate assistants in pursuing doctoral studies.

Course structure

The Chemistry Honours Degree students in their third year follow advanced courses in the core subject areas, while the fourth year students have wider choice of specialized optional courses, some of which relate to applications of chemistry in industry. Students are required to carry out a research project in their final year. It helps students to sharpen their scientific reasoning, research and analytical skills, and prepare them to take up research work in academic careers. A dissertation is submitted for assessment at the end of the year, which is evaluated after an oral



presentation followed by a viva voce examination. The special degree students also undergo a short industrial placement during the course. The industry-based assignment/training project in the fourth year allow students to get hands-on experience in applying the theoretical concepts that they learnt in the class room while providing an invaluable opportunity to further strengthen their work ready skills and team work.

Selection policy

Selection of students to follow the B.Sc. Honours Degree in Chemistry is based on student performance in the first two academic years. The intake is typically limited to maximum of 30 students.

Mode of Instruction and Assessment

The modules include lectures, tutorials, laboratory practicals, industrial visits and individual and group

projects/assignments. These are assessed through end-of-semester written examinations, practical tests, presentations and reports. There is an emphasis on analysis of real problems to reinforce learning. This provides the tools required for group and individual projects. For the practical class, assessments will include attendance, record book and a practical exams held separately for Organic, Inorganic, and Physical Chemistry. A minimum of 80% attendance will be an essential requirement for completing the practical component.

For Further Information, please contact;

Prof. N. T. Perera
Head/Department of Chemistry
E mail: theshi@sjp.ac.lk

Chemistry

B.Sc. Degree Course Units

Each student should take course units having a minimum cumulative credit value of 27.0

FIRST YEAR

Semester I

CHE 1061	Structure and Properties of Matter	c
CHE 1081	Organic Chemistry I	c
CHE 1101	Concepts in Inorganic Chemistry I	c
CHE 1121	Main Group and Transition Elements	c
CHE 1072	Chemistry Practical Module I (Semester I and II)	a

Semester II

CHE 1031	Chemical Thermodynamics	c
CHE 1091	Organic Chemistry II	c
CHE 1022	Introduction to Analytical Chemistry	c
CHE 1072	Chemistry Practical Module I (Semester I and II)	a

SECOND YEAR

Semester I

CHE 2051	Chemistry of Heterocyclic and Bioorganic Chemistry	c
CHE 2071	Phase Equilibria and Surface Chemistry	c
CHE 2081	Quantum Chemistry	c
CHE 2111	Concepts in Inorganic Chemistry II	c
CHE 2092	Chemistry Practical Module II (Semester I and II)	a

Semester II

CHE 2021	Chemistry of Coordination Compounds	c
CHE 2031	Organic Spectroscopy	c
CHE 2041	Electrochemistry	c
CHE 2061	Chemical Kinetics	c
CHE 2092	Chemistry Practical Module II (Semester I and II)	a

Course Type

-a-
Compulsory

-c-
Core

-o-
Optional

Course Type	THIRD YEAR		
-a- Compulsory	Semester I		
	CHE 3091	Environmental Chemistry	o *
-c- Core	CHE 3191	Metal Complexes in Catalysis	o
	CHE 3361	Polymer Chemistry and Technology	o #
-o- Optional	CHE 3371	Instrumental Analysis I	o
	CHE 3381	Instrumental Analysis II	o
.*_ This course is not open for students who follow Environmental Management and Forestry as a subject	CHE 3411	Colloids and Nanochemistry	o
	CHE 3441	Food Chemistry	o ~
	CHE 3152	Chemistry Practical Module III (Semester I and II)	a
-#- This course is not open for students who follow Polymer as a subject	Semester II		
	CHE 3011	Nuclear Chemistry and Applications	o
-~- This course is not open for students who follow Food-Science as a subject	CHE 3022	Industrial Utilization of Plant Materials	o
	CHE 3031	Laboratory Safety and Security	o
	CHE 3121	Basic Chemical Engineering	o
	CHE 3301	Structure and Function of Biomolecules	o
	CHE 3331	Quality Control and Assurance	o
	CHE 3401	Introduction to Molecular Modeling and Designing	o
	CHE 3451	Industrial Organic Chemistry	o
	CHE 3152	Chemistry Practical Module III (Semester I and II)	a

B.Sc. Honours Degree Course Units

THIRD YEAR

Semester I

CHE 3500	Mathematics for Chemistry	a
CHE 3591	Symmetry & Group Theory	c
CHE 3601	Advanced Electrochemistry	c
CHE 3631	Statistical Thermodynamics	c
CHE 3651	Diffraction Methods in Chemistry	c
CHE 3661	Organotransition Metal Chemistry	c
CHE 3681	Bio-inorganic Chemistry	c
CHE 3771	Modern Chromatographic Techniques	c
CHE 3781	Advanced Analytical Chemistry	c
CHE 3791	Chemistry of Biological Compounds	c
CHE 3812	Synthetic Organic Chemistry	c
CHE 3831	Organic Reaction Mechanisms	c
CHE 3742	Inorganic Chemistry Practical (Semester I and II)	a
CHE 3752	Organic Chemistry Practical (Semester I and II)	a
CHE 3762	Physical Chemistry Practical (Semester I and II)	a

Semester II

CHE 3521	Spectroscopic Methods in Inorganic Chemistry	c
CHE 3531	Structural Chemistry	c
CHE 3541	Inorganic Reaction Mechanisms	c
CHE 3581	Advanced Organic Spectroscopy	c
CHE 3611	Advanced Chemical Kinetics	c
CHE 3621	Advanced Quantum Chemistry	c
CHE 3671	Advanced Coordination Chemistry	c
CHE 3691	Molecular Photochemistry	c
CHE 3711	Biochemistry	c
CHE 3821	Polynuclear Aromatic Hydrocarbons and Heterocyclic Compounds	c
CHE 3841	Natural Product Chemistry	c
CHE 3851	Asymmetric Organic Synthesis	c

Course Type

-a-
Compulsory

-c-
Core

-o-
Optional

Course Type	FOURTH YEAR		
-a- Compulsory	Semester I		
	CHE 4511	Inorganic Materials	o
	CHE 4522	Chemistry of Natural Waters	o
-c- Core	CHE 4561	Polymer Chemistry	o #*
	CHE 4571	Molecular Spectroscopy	c
-o- Optional	CHE 4581	Advance Surface Chemistry	c
	CHE 4591	Advanced Chemical Thermodynamics	c
-#- Students who have followed Polymer science and technology as a subject in the first two years are not allowed to follow this course	CHE 4601	Industrial Management	o +
	CHE 4622	Food Chemistry and Technology	o ##**
	CHE 4741	Physical Chemistry of Polymers	o #
	CHE 4831	Polymer Blends and Composites	o
##- Students who have followed Food Science as a subject in the first two years are not allowed to follow this course.	CHE 4841	Polymer Coating and Paint Industry	o
	CHE 4861	Nanochemistry	o
	CHE 4921	Molecular Modeling and Computational Chemistry	c
	CHE 4931	Technological aspects in modern research	o
-+- Students who have followed Management as a subject in the first two years are not allowed to follow this course.	CHE 4992	Advanced Physical Organic Chemistry	c
	CHE 4908	Research Project (Semester I and II)	a
	Semester II		
	CHE 4011	New Trends in Organic Synthesis	o
	CHE 4541	Medicinal Chemistry	o
	CHE 4611	Basic Chemical Engineering	c
	CHE 4641	Polymer Technology	o #
	CHE 4651	Biophysical Chemistry	o
	CHE 4661	Chemistry of Plant Products and their Applications in Industry	o
	CHE 4701	Environmental Chemistry	o ++\$
	CHE 4761	Solid State Chemistry	c
	CHE 4811	Surface Techniques and Dynamic Surfaces	c
	CHE 4851	Quality Control and Assurance	o
	CHE 4911	Supramolecular Chemistry	o
	CHE 4951	Principles and Practices of Optical and Electron Microscopy	o
	CHE 4981	Atmospheric Chemistry	o
	CHE 4908	Research Project (Semester I and II)	a
-\$- Mandatory course for students who have not followed Forestry and Environmental Science as a subject in the first two years.			



CSC Computer Science

Offered by the Department of Computer Science

“Computer science deals with an integral part of modern society which drives the advances of other disciplines at an exponential rate”

B.Sc. Degree Programme with Computer Science

Course Code: CSC

Duration: 3 Years

Subject Combinations: Refer pages 162-167

For whom?

Students from physical science stream who are interested in pursuing careers related to Computer Science. The intake is limited to a maximum of 120 students in an academic year.

Career opportunities

A Computer Science degree opens doors to diverse career opportunities both in Sri Lanka and internationally. Graduates can work at leading software companies and technology-driven organizations, taking on roles such as Software Engineers, AI specialists, Cybersecurity Specialist, DevOps specialists, Business Analysts, and QA Automation Engineers. Additionally, industries such as banking, insurance, electronics, and government sectors, both locally and globally, offer employment in software development, systems support, and management.

A B.Sc. Honours Degree in Computer Science is highly valued by employers as it demonstrates advanced skills, knowledge, and achievement. Graduates with this degree are well-prepared for the job market, with strong prospects for securing high-ranking positions. Organizations such as computer manufacturers, software firms, tech consultancies, and multinational corporations actively seek skilled professionals for a wide range of roles—including Assistant Project Manager, Software Engineer, Business Analyst, DevOps Engineer, Cybersecurity Specialist, Data Scientist, Cloud Architect, UI/UX Designer, IT Project Manager, and Researcher—as demand for technology expertise continues to grow both locally and internationally.

In addition to industry roles, the degree offers opportunities in academia, allowing graduates to pursue careers at universities and institutes as educators and researchers. It also provides a solid foundation for further studies in Master's, MPhil's and Ph.D. programs, including opportunities for education abroad. This degree equips students with the expertise to excel in various fields and make meaningful contributions both locally and internationally.

Course overview

Learning Computer Science involves gaining a deep understanding of modern computing systems, encompassing both software and underlying hardware. Today's computing platforms—ranging from cloud infrastructures and distributed systems to intelligent software applications—are among the most complex and transformative technologies ever developed. Designing, building, and using these systems effectively presents significant intellectual and practical challenges. This programme emphasizes a strong integration of theory and practice, enabling students to apply foundational concepts to real-world problems. It covers a broad spectrum of contemporary software and hardware technologies and their applications across diverse domains. Students are introduced to modern programming paradigms, including procedural, object oriented, event-driven, functional, visual, and logic programming. In addition, the curriculum addresses key areas such as software engineering, web and cloud-based computing, data-centric systems, cybersecurity, and intelligent computing, including artificial intelligence and machine learning. The syllabus is comprehensive and continuously updated to reflect rapid technological advancements and evolving industry requirements.

Course structure

Computer Science will constitute one third of the

B.Sc. (General) degree program in allowed subject combinations. Students are required to take core course units in CSC having a minimum cumulative credit value of 27.0. These course units are designed to provide students with essential knowledge in theory, practice and skills that are required in computing industry.

Mode of instruction and assessment

Students enrolled in general degree program in Computer Science will be taught by an academic staff with well-established track records. The medium of instruction is English. The course units include; lectures, assignments, individual and group projects and laboratory practical. They are assessed through continuous assessments, end-of-semester written examinations, practical examinations, presentations and reports.

B.Sc. Honours Degree Programme in Computer Science

Course Code: CSC

Duration: 4 Years

For whom

Students who follow Computer Science as a subject for B.Sc. (General) degree program are selected for the special degree.

Career opportunities

Employers recognize a Honours Degree as proof of additional skills, knowledge and achievement. In the

present job market, Computer Science graduates are better placed than many others to obtain employment. The passion pursued in the final year will enable the students to guarantee high positions in the industry. Computer manufacturers and software houses, for example, recruit specialists to develop software solutions. Some of the current designations of Computer Science graduates are Lecturer, Assistant Project Manager, Software Engineer and Business Analyst etc.

The degree also prepares the students for further study in Master's, MPhil's and Ph.D. programs and opens up the possibility to have an exciting research career, helping communities to solve complex problems.

Course overview

The Computer Science Honours degree is designed for those who want to mark out as high achievers by gaining advanced skills and greater depth of knowledge in Computer Science which will widen the employability and career options in the industry and academia.

At the final year, students are required to carry out a research project and industrial placement scheme which exposes the students to the industrial and computing environment.

Course structure

During third year (Part I) students need to obtain minimum of 30.0 credits from Part I courses, out of which 27.0 credits from core course units and 3.0 credits from optional units. In fourth year (Part II) students are required to offer course units having a minimum cumulative credit value of 30.0 from Part II courses.

Mode of instruction and assessment

Students enrolled in Honours Degree programme in Computer Science will be taught by an academic staff with good track records. The medium of instructions is English. The course units include; lectures, assignments, individual and group projects and laboratory practicals. They are assessed through continuous assessments, end of semester written exams, practical examinations, presentations and reports.

For further information please contact:

Mr. M.D.R. Perera

Head/ Department of Computer Science

Email: head.computersci@sjp.ac.lk

Computer Science

Course Type

-c-
Core

-o-
Optional for those
doing Computer
Science

B.Sc. Degree Course Units

Each student should take course units having a minimum cumulative credit value of 27.0

FIRST YEAR

Semester I

CSC 1012	Introduction to Computer Programming	c
CSC 1022	Computer System Organization	c
CSC 1031	Software Development Fundamentals	c

Semester II

CSC 1042	Database Management Systems	c
CSC 1051	Full-Stack Fundamentals Laboratory	c
CSC 1062	Software Project Management and Process Design	c

SECOND YEAR

Semester I

CSC 2012	Data Structures and Algorithms I	c
CSC 2022	Computer System Architecture	c
CSC 2032	Object Oriented Programming	c

Semester II

CSC 2042	Operating Systems	c
CSC 2052	Knowledge Representation	c

THIRD YEAR

Semester I

CSC 3012	Machine Learning	c
CSC 3022	Networking and Communication	c
CSC 3032	Data structures and Algorithms II	o
CSC 3042	Human Computer Interaction	o
CSC 3052	Research Methodologies and Scientific Communication	o

CSC 3062	Software Architecture and Design	o
CSC 3071	DevOps Engineering and Practices	o
CSC 3082	Full Stack Development	o
CSC 3091	Software Group Project	o

Semester II

CSC 3122	Artificial Intelligence	c
CSC 3152	Visual Computing	c
CSC 3162	Computer Security	o
CSC 3192	Service Oriented Computing	o
CSC 3202	Evolutionary Computing and Swarm Intelligence	o
CSC 3212	Embedded Systems and IoT	o
CSC 3222	Data Science and Business Intelligence	o
CSC 3232	Cloud computing and virtualization	o
CSC 3242	Software Quality Assurance	o

B.Sc. Honours Degree Course Units

Each student should take course units having a minimum cumulative credit value of 30.0 from both PART I and PART II

PART I

Semester I

CSC 3012	Machine Learning	c
CSC 3022	Networking and Communication	c
CSC 3032	Data structures and Algorithms II	c
CSC 3042	Human Computer Interaction	c
CSC 3052	Research Methodologies and Scientific Communication	c
CSC 3062	Software Architecture and Design	c
CSC 3071	DevOps Engineering and Practices	o
CSC 3082	Full Stack Development	o

Course Type

-c-
Core

-o-
Optional for those
doing Computer
Science

Course Type

-c-
Core

-o-
Optional for those
doing Computer
Science

CSC 3091	Software Group Project	o
CSC 3102	Programming and Data Analysis with R (based on STA 326 2.0)	o
CSC 3112	Discrete and Categorical Data Analysis (based on STA 316 2.0)	o

Semester II

CSC 3122	Artificial Intelligence	c
CSC 3132	Theory of Computation	c
CSC 3141	Seminar	c
CSC 3152	Visual Computing	c
CSC 3162	Computer Security	c
CSC 3172	Deep Learning and Modern Trends	o
CSC 3182	Mobile Computing	o
CSC 3192	Service Oriented Computing	o
CSC 3202	Evolutionary Computing and Swarm Intelligence	o
CSC 3212	Embedded Systems and IoT	o
CSC 3222	Data Science and Business Intelligence	o
CSC 3232	Cloud computing and virtualization	o
CSC 3242	Software Quality Assurance	o
CSC 3252	Operations Research (based on STA 324 2.0)	o
CSC 3261	Introduction to Microprocessors (based on PHY 309 1.0)	o
CSC 3271	Optimization (MAT 323 1.0)	o
CSC 3281	Mathematical Modeling I (MAT 324 1.0)	o

PART II

Semester I

CSC 4012	Theory of Programming Languages	c
CSC 4022	Intelligent Systems	o
CSC 4032	Distributed Systems	o
CSC 4042	Computational Biology	o
CSC 4052	Robotics	o
CSC 4062	Advanced Database Systems	o
CSC 4072	System Administration	o
CSC 4082	Natural Language Processing	o

CSC 4092	Immersive Technologies and Game Development	o
CSC 4102	Emerging Technologies	o
CSC 4112	Multi-Agent Systems	o
CSC 4122	Cyber security	o
CSC 4132	Big Data Management	o
CSC 4141	Social Aspects and Professional Practices in IT	o
CSC 4151	Introduction to Quantum Computing	o
CSC 4162	Introduction to Nano-computing	o
CSC 4172	Digital Image Processing	o
CSC 4182	Project Management for IT system	o

Semester II

CSC 4196	Research Project (Semester I and II)	c
CSC 4206	Industrial Training	c

Course Type

-c-

Core

-o-

Optional for those
doing Computer
Science



ECN Economics

Offered by the Resource Economics Unit

“Economics is the science that analyzes the production, distribution, and consumption of goods and services”

B.Sc. Degree Programme with Economics

Course Code: ECN

Duration: 3 Years

Subject combinations : Refer pages 162-167

For whom?

The Economics programme is designed for mathematically competent students who follow the subject areas of statistics and mathematics and wish to experience a broader fundamental exposure in Economics or who want to become professional economists.

Course overview

Economics course units offered will provide an important opportunity for the students to gain a solid understanding in principles of economics along with applied areas related to natural resources, environment and industries.

This course of study provides a stimulating setting for the students to gain a solid understanding of economic applications useful in providing guidance for decision making under resource scarcity.



Course structure

Economics course units focus on the study of basic and advanced courses of theoretical economics such as Micro and Macro Economics and applied areas including Environmental economics, Industrial Economics, Project Planning and Analysis, Agricultural and Health Economics, and Resource Economics. From a total of 30 credits, minimum of 27 credits must be completed at the end of 3rd year to complete the degree. These include compulsory and optional course units.

The Department of Economics of the Faculty of Humanities and Social Sciences provides the expertise and support in conducting the basic and advanced courses of economics lecture series. Major part of the applied courses will be conducted by the lecturers from the Department of Forestry and Environmental Science and the Department of Food Science and Technology.

Mode of instruction and assessment

The teaching method of Economics is a blend of theory and practice. To ensure that students are acquiring the required knowledge and competencies, end of semester examinations, presentations and written reports will be held. Guest lectures and field visits are also given due importance throughout the semester.

Students who have successfully completed their general degree with a minimum GPA of 2.5 at the end of their third year B.Sc programme, can enter for the B.Sc. (Honours) Degree in Applied Sciences (Specialised in Economics) offered by the Resource Economics Unit. Students will be able to study advanced courses on applied economics under this programme and to complete their internship under economics, finance and statistics related institutions in both government and private sectors.

For further information please contact:

Prof. U.A.D. Prasanthi Gunawardena
Coordinator/Resource Economics Unit
Email – coordinator.econ@sjp.ac.lk

Economics

B.Sc. Degree Course Units

Each student should take course units having a cumulative credit value of 27.0.

Total credits - Compulsory credits - 23 : Optional credits - A minimum of 04 credits are required to be selected out of 07 credits

FIRST YEAR

Semester I

ECN 1013	Principles of Microeconomics	*
ECN 1022	Managerial Economics	*

Semester II

ECN 1033	Principles of Macroeconomics	*
ECN 1042	Environmental Economics	*

SECOND YEAR

Semester I

ECN 2013	Intermediate Microeconomics	*
ECN 2022	Industrial Economics	*

Semester II

ECN 2033	Intermediate Macroeconomics	*
ECN 2042	Advanced Resource Economics	*

THIRD YEAR

Semester I

ECN 3013	Advanced Microeconomics	*
ECN 3022	Agricultural Economics	**

Semester II

ECN 3032	Advanced Econometrics	**
ECN 3042	Project Planning and Analysis	**
ECN 3051	Health Economics	**
ECN 3071	Internship Training	**†

Course Type

*

Compulsory course units

**

Optional course units

-†-

A student may register for only one Internship Training/ Industrial Training course unit offered by any one Department.



EES

Electronic and Embedded Systems

Offered by the Department of Physics

“The Electronic and Embedded Systems course can best be described as a successful attempt to fulfill the national needs for advancements in the field of electronics, robotics and internet of things.”

B.Sc. Degree Programme with Electronics and Embedded Systems

Course Code: EES

Duration: 3 Years

Subject Combinations: Please see pages 162-167

For whom?

This proposed course is geared towards physical stream students interested in pursuing careers in

Physics and Electronics and Embedded Systems. Consideration will be given to the students who are selected by the University Grant Commission (UGC). It is expected that Electronics and Embedded Systems combined with Physics and Mathematics provide an innovative combination in order to graduate with essential knowledge, specific expertise and skills related to national needs. The intake is limited to a maximum of 30 students per academic year.



Career opportunities

The majority of students who are completing the B.Sc. General degree tend to seek job opportunities in academia as well as in industry. Therefore, a general degree program which is focused on producing graduates with more practical knowledge will certainly be of high demand. Also, with the rapid development of technology, automation, internet of things, and robotics applications are integrated in to our lives in forms of telecommunication, health

systems, entertainment, security, etc. Therefore, the emerging employment trends seek for graduates with knowledge in Electronics and Embedded Systems to develop automation, robotics and internet of things projects. The proposed Electronics and Embedded Systems course will be structured in a way that the students will gain knowledge in demanding fields thus opening new avenues of employment for science graduates.

Course overview

The developed curriculum of the Electronics and Embedded Systems program is structured to provide the prospective students a solid foundation of theory and practical in Physics, Electronics and Mathematics during their first two academic years. Therefore, the students to follow this undergraduate subject should select the combination containing Physics, Mathematics, and Electronics and Embedded Systems. The third year of study is emphasized more on the application of oriented courses, thus included course units in Embedded Electronics, Internet-of-Things (IOT), Robotics, Instrumentation and Automation.

Course structure

The Electronics and Embedded Systems Course is designed as a three year degree course which will focus on laboratory practical sessions while covering undergraduate level Physics and Mathematics. The students are required to take course units in Electronics and Embedded Systems with a minimum cumulative credit value of 27.0 during the three years. The course units comprise of 'compulsory', 'core', 'non-core' and 'optional' subjects so that the students are provided with the Electronics and Embedded Systems stream while allowing some level of flexibility to pursue optional interest.

For further information, please contact;

Dr. R.A.D.D. Dharmasiri

Course coordinator

Department of Physics

University of Sri Jayewardenepura, Nugegoda

E mail: dhanu@sjp.ac.lk

Electronic and Embedded Systems

B.Sc. Degree Course Units

Each student should take course units having a minimum cumulative credit value of 27.0

FIRST YEAR

Semester I

EES 1012	Introduction to Computer Programming	c
EES 1022	Fundamentals of 2D and 3D Computer-Aided Design	c
EES 1031	Electronics and Embedded Systems Lab	a

Semester II

EES 1041	Embedded Linux Systems	c
EES 1052	Probability and Statistics	c
EES 1061	Seminar	c
EES 1071	Circuit Simulations and Design Lab	a

SECOND YEAR

Semester I

EES 2012	Sensors and Actuators	c
EES 2022	Statistical Methods	c
EES 2031	Embedded Systems Mini Challenge	c

Semester II

EES 2042	Microprocessors and Microcontrollers	c
EES 2052	Data Acquisition and Signal Processing	c
EES 2061	Data Acquisition and Signal Processing Lab	a

THIRD YEAR

Semester I

EES 3012	Computer Integrated Control Systems	c
EES 3021	Circuit Fault Diagnostic	c
EES 3031	Embedded Systems Development and Automation Lab	a
EES 3082	Project (Sem I and Sem II)	o
EES 3091	Introduction to Machine Learning	o

Course Type

-a-
Compulsory

-c-
Core

Course Type

-a-
Compulsory

-c-
Core

-o-
Optional

Semester II

EES 3042	Internet of Things and Robotics	c
EES 3051	Internet of Things and Robotics Lab	a
EES 3061	Programmable Logic Controllers and Applications	o
EES 3071	Mobile Application Development	o
EES 3082	Project (Sem I and Sem II)	o
EES 3101	Electrical Machines	o

Note: Those who are doing Electronics and Embedded Systems as a subject must take PHY 3111 Computer Hardware and Networking course instead of PHY 3051 Microprocessors and Embedded Systems



EMF

Environmental Management and Forestry

Offered by the Department of Forestry and Environmental Science

“Environment Management involves making the environment healthier by protecting the environment and related resources and promoting sound ecology and management practices”

B.Sc. Degree Programme with Environmental Management and Forestry

Course code: EMF

Duration: 3 Years

Subject combinations: Refer pages 162-167

For whom?

Students from both biological and physical science streams who are interested in pursuing careers related to environment or natural resource management

and forestry. The intake is limited to maximum of 80 students in an academic year.

Career opportunities

With the environment becoming an essential component in decision making, there is a rising demand for competent graduates in environment related professions. The course in Environmental Management and Forestry will take you towards diverse and rewarding careers in government ministries, non-governmental organizations,



environmental and business consultancies, public sector organizations, and manufacturing and service industries in the private sector.

Course overview

The concept of sustainable development, which aims to harmonize the economic, social and environmental dimensions of development strategy, has now become a key aspect of policy making by governments throughout the world. As such, an indepth knowledge in environment, natural resources and their management is likely to provide one with an added advantage in the modern competitive career market. Environment Management and Forestry course is aimed at equipping students with knowledge and skills in arrange of key disciplines related to forestry and environment, along with employability skills such as communication, problem solving team work, self-direction and leadership.

The study of Environmental Management is not just about progressing you way towards obtaining a degree, It is more importantly about providing you with a solid base in fields of forestry and environment, and enabling you to make the right choice in the best interest of the society and environment. With such a solid foundation, graduates will be able to develop and implement best practice strategies for natural resources management in the public and private sectors.

Course structure

Environmental Management and Forestry will constitute one third of the B.Sc. (General) degree program in a permitted subject combination. Students are required to take course units in EMF having a minimum cumulative credit value of 27.0. These include compulsory, core, and elective course units. Compulsory, and core course units are designed to

provide students with essential knowledge and skills that are required in forestry and environmental management. The industry-based assignment/training project in the third year allows students to apply the concepts they have learned in the class room while providing an invaluable opportunity to further strengthen their work-ready skills.

B.Sc. Honours Degree in Environmental Management and Forestry

Duration: 4 Years

For whom?

The B.Sc. Honours Degree is aimed at preparing a new breed of experts in the field of forestry and experts in the field of forestry and environment with insight, skills, knowledge and ability to appreciate all aspects in decision making for sustainable management of natural resources.

Course overview

The core curriculum is designed to provide students with in-depth knowledge, skills and a broader perspective of forestry and environmental management that is demanded by the industry. The final year research project helps students to sharpen their scientific reasoning, research and analytical skills and make them prepare to take up research and academic careers. The degree is recognized by many universities in Europe, U.S. and Australia, thereby providing an ideal framework to obtain research

positions and PhD studentships abroad.

Selection Policy

Selection of students to follow the B.Sc. Honours Degree in Environmental Management and Forestry is based on student's performance in the first two academic years. The intake is typically limited to a maximum of 12 students to ensure a personalized attention guidance to each student.

Mode of Instruction and assessment

Students enrolled in both B.Sc. General and Honours Degree programs will be taught by an academic staff with an established track record, who appreciate the necessity of an integrated approach for the management and use of the world's environmental resources. The modules include lecturers, tutorials, laboratory practicals, field classes and individual and group projects/ assignments. These are assessed through end-of-semester written examinations, practical tests, presentations and reports. There is an emphasis on the analysis of real problems, with practical case studies to reinforce learning. This provides the tools required for the group and individual projects.

For further information please contact:

Dr. Chaamila Pathirana
Head, Department of Forestry and
Environmental Science
Email: dfes@sci.sjp.ac.lk
Phone: 0112 804685

Environmental Management and Forestry

Course Type

-a-
Compulsory

-c-
Core

-n-
Optional for those
not doing Forestry

-o-
Optional for those
doing Forestry

B.Sc. Degree Course Units

Each student should take course units having a minimum cumulative credit value of 27.0

FIRST YEAR

Semester I

EMF 1011	Ecological Principles	c
EMF 1031	Forest Mensuration and Inventory	c
EMF 1061	Principles and Practice of Silviculture	c
EMF 1131	Practical Module in Silviculture, Ecology and Forest Mensuration	a
EMF 1151	Key Skills for Resource Managers	c

Semester II

EMF 1021	Environmental Chemistry	c
EMF 1081	Forest Biology	c
EMF 1141	General Geology and Soil Science	c
EMF 1161	Practical Module in Environmental Chemistry and Forest Biology	a
EMF 1171	Principles of Wildlife Ecology	c

SECOND YEAR

Semester I

EMF 2011	Tropical Forest Ecology	c
EMF 2131	Surveying, Natural Resource Mapping and GIS	c
EMF 2141	Practical Module in Surveying, Mapping, GIS and Soil Science, Forest Tree Improvement	a
EMF 2201	Wastewater Management	c
EMF 2211	Environmental Pollution and its Control	c

Semester II

EMF 2162	Wood Science and Forest Based Industries	c
EMF 2181	Tree Diversity and Systematics	c
EMF 2191	Practical Module in Wood Science and Plant Systematics	a
EMF 2221	Principles in Hydrology and Climatology	c

Course Type

THIRD YEAR

Semester I

EMF 3132	Field / Factory Assignment (Semester I & II)	a
EMF 3141	Forest and Environmental Policies and Laws	c
EMF 3151	Environmental and Social Impact Assessment	c
EMF 3161	Corporate Environmental Management	o
EMF 3171	Resource and Environmental Economics	c
EMF 3191	Water Resource Management	c
EMF 3211	Wildlife Conservation and Management	c
EMF 3231	Forest Tree Improvement	c

Semester II

EMF 3071	Forest Management	c
EMF 3111	Agroforestry and Social Forestry	c
EMF 3132	Filed/ Factory Assignment (Semester I & II)	a
EMF 3181	Forest Pathology and Entomology	o
EMF 3191	Water Resource Management	c
EMF 3221	Land Use Planning and Management	o
EMF 3301	Ecotourism Planning and Management	o
EMF 3311	Project Planning and Analysis	s
EMF 3331	Applications of GIS in Resource Management	o
EMF 3701	Integrated Resource Management	o

B.Sc. Honours Degree Course Units

Part I

Semester I

EMF 3132	Field/Factory Assignment (Semester I & II)	a
EMF 3141	Forest and Environmental Policies and Laws	c
EMF 3151	Environmental and Social Impact Assessment	c
EMF 3161	Corporate Environmental Management	c
EMF 3171	Resource and Environmental Economics	c

-a-
Compulsory

-c-
Core

-n-
Optional for those
not doing Forestry

-o-
Optional for those
doing Forestry

-s-
Optional for all
students in the
faculty; Those
who are doing
economics as a
subject are not
allowed to do this
course unit.

Course Type			
-a- Compulsory	EMF 3191	Water Resource Management	c
	EMF 3211	Wildlife Conversation and Management	c
	EMF 3231	Forest Tree Improvement	c
	EMF 3511	Conservation Biology	c
	EMF 3521	Wood Structure, Identification and Timber Grading	c
-c- Core	EMF 3541	Tree Physiology	a
	EMF 3561	Seminars on Special Topics I	a
	EMF 3671	Chemistry and Industrial Utilization of Plant Products (Based on CHE 302 1.0)	o
-n- Optional for those not doing Forestry	EMF 3661	Rural Sociology	c
-o- Optional for those doing Forestry		Semester II	
	EMF 3071	Forest Management	c
-s- Optional for all students in the faculty; Those who are doing economics as a subject are not allowed to do this course unit.	EMF 3111	Agroforestry and Social Forestry	c
	EMF 3132	Field/Factory Assignment (Semester I & II)	a
	EMF 3181	Forest Pathology and Entomology	o
	EMF 3221	Land Use Planning and Management	c
	EMF 3301	Ecotourism Planning and Management	c
	EMF 3311	Project Planning and Analysis (Previously EMF 364 1.0)	s
	EMF 3531	Environmental Microbiology	c
	EMF 3571	Research Methodology	c
	EMF 3581	Advanced Silviculture	c
	EMF 3591	Advanced Resource Economics	c
	EMF 3611	Indigenous Knowledge in Natural Resource Management	c
	EMF 3621	Green Business Development	o
	EMF 3651	Seminars on Special Topics II	a
	EMF 3691	Cleaner Production and Green Technology (previously Cleaner Production and Industrial Ecology)	c
	EMF 3701	Integrated Resource Management	c
EMF 3711	Urban Forestry	o	

Part II

Semester I

EMF 4511	An Ecosystem Approach to Forest Management	c
EMF 4531	Plant Systematics	c
EMF 4551	Forest Harvesting and Sawmilling	c
EMF 4562	Seminars on Special Topics I	a
EMF 4578	Research Project (Semester I & II)	a
EMF 4612	Advances in Environmental Pollution Control	c
EMF 4631	Environmental Epidemiology and Toxicology	c
EMF 4671	Soil and Soil Conservation	c
EMF 4681	Remote Sensing, GIS and Mapping	c
EMF 4691	Operational Research in Environmental Management	c
EMF 4741	Protected Area Management	c
EMF 4771	Bioethics	o
EMF 4781	Disaster Management	o
EMF 4811	Ecohydrology	c

Semester II

EMF 4542	Assignment on Forest Management Plan Preparation	c
EMF 4578	Research Project (Semester I & II)	a
EMF 4581	Wood Based Composites	c
EMF 4591	Forestry for Rural Development	c
EMF 4711	Energy and Environment	o
EMF 4721	Land Reclamation and Soil Remediation	c
EMF 4751	Economic Instruments in Environmental Management	o
EMF 4762	Seminars on Special Topics II	a
EMF 4802	Environmental Modeling	c

Course Type

-a-
Compulsory

-c-
Core

-n-
Optional for those
not doing Forestry

-o-
Optional for those
doing Forestry



FST

Food Science & Technology

Offered by the Department of Food Science and Technology

“Food Science is the study of physical, biological and chemical components of food and the concepts of food processing. Food Technology is the application of the above for preservation and safe use of food”

B.Sc. Honours Degree Programme in Food Science and Technology

Course Code: FST
Duration: 4 years

For whom?

Biological Science students who are selected by University Grants Commission (UGC) through a special window. The intake is limited to maximum of

70 students per academic year.

Opportunities

There is big demand for FST graduates in food ingredient manufacture, food plant equipment and packaging manufacture, food service, government administration/food legislation/food technology, public analysts in laboratories, environmental health department, trading standards and departments, journalism/information service, research/education

institutes and associations, oversea locations (food sector) and consulting (local and international).

Course overview

The B.Sc. Honours Degree in Food Science and Technology has been designed to enable the prospective FST graduates to be able to demonstrate excellence in their future professions through transferring the knowledge and practical skills related to all subjects and facilitating to apply both theoretical knowledge and related practical skills appropriately in different situations. It is also expected that they will develop their technical competencies in order to meet any challenging situation in the food industry. The abilities and skills expected to transfer to the SJP FST graduates through the degree programme include intellectual skills, practical skills, research skills, generic skills, numeracy skills, communication skills with special emphasis on scientific communication and technology skills (ICT), interpersonal team work skills, self management and professional development skills.

Course structure

Students are required to take course units in FST having a cumulative credit value of 120. These include compulsory, core and elective course units. In addition, the students are also offered non-credit base course units throughout the course. Compulsory and core course units are designed to provide students with the knowledge essential in working in the field of

Food Science and Food Science Technology. The in-plant training programme which focuses on real world industrial exposure (in fourth year first semester) and graduate research project (in fourth year second semester) are two vital components to facilitate our undergrads in getting hands on experience and in applying the concepts they learned in the classroom into practices and research.

Mode of instruction and assessment

Students enrolled in both general and special degree programmes will be taught by an academic staff with well-established track record. The medium of instruction is English. The course units include; lectures, assignments, individual and group projects, field classes and laboratory practicals. They are assessed through end-of-semester written examinations, practical examinations, presentations and reports.

B.Sc. Degree Programme with Food Science

Course Code: FSC

Duration: 3 Years

Subject Combination: Refer pages 162-167

For whom?

This course is for students from the Biological Science stream who are interested in pursuing careers in Food Science. The intake is limited to a maximum of 30 students per academic year.



Career opportunities

Food Science and Technology is a fast growing and diversifying industry. Graduates undertaking FSC as a subject have many opportunities to apply their knowledge to solve problems associated with food packaging, shelf-life, etc.

This course is aimed at equipping students with knowledge and skill in a range of key disciplines related to Food Science along with employability skills such as ICT, problem solving, team work, self-management and professional development.

Course structure

Food Science will constitute one third of the B.Sc. (General) degree programme. Students are required to take course units in FSC having a minimum cumulative credit value of 30. These include compulsory, core and optional course units.

For further information, please contact;

Dr. Piumi De A. Abeyesundara
Head/Department of Food Science and Technology
E mail: piumiabey@sjp.ac.lk

Food Science & Technology

B.Sc. Honours Degree in Food Science and Technology

Each student should take course units having a minimum cumulative credit value of 120

FIRST YEAR

Semester I

FST 1541	Pest Management in Food Industry (Based on FST 253 1.0)	c
FST 1501	Food Science and Technology Practical I: Qualitative and Quantitative Analyses of Food Components	a
FST 1551	Introduction to Computer Applications for Food Sciences	c
FST 1601	Principles of Organic Chemistry I (As per CHE 108 1.0)	c
FST 1611	Behaviour of Transition Elements in Food (FST 162 1.0 Main Groups and Transition Elements)	c
FST 1621	Career Skills Development (Based on FST 457 1.0)	c
FST 1631	Chemistry of Living Systems	c
FST 1661	Structure and Properties of Matter (As per CHE 106 1.0)	c
FST 1681	Basic Practices in Food Industry (Based on FST 186 0.0)	c
FST 1711	Concepts in Inorganic Chemistry I (As per CHE 103 1.0)	c
FST 1762	Mathematics for Food Sciences	c
FST 1971	Chemistry Practical (As per CHE 107 2.0, Organic, Inorganic, Physical)	a
Total		13

FIRST YEAR

Semester II

FST 1531	Food Science and Technology Practical II: Basics of Food Quality	a
FST 1642	Introduction to Analytical Chemistry (As per CHE 102 2.0)	c
FST 1651	Chemical Thermodynamics (As per CHE 103 1.0)	c
FST 1671	Principles of Organic Chemistry II (As per CHE 109 1.0)	c
FST 1732	Marketing Management (Based on FST 258 2.0)	c
FST 1752	Entrepreneurship and Innovation (based on FST 259 2.0)	c
FST 1812	Food Physics (Based on FST 177 1.0; FST 180 1.0; and FST 278 1.0)	c
FST 1872	Food Microbiology	c
FST 1882	Introduction to Animal and Plant-Based Food Products	c
FST 1981	Chemistry Practical	a
Total		16

Course Type

-a-
Compulsory

-c-
Core

-o-
Optional

Course Type			
-a- Compulsory	SECOND YEAR		
	Semester I		
-c- Core	FST 2501	Food Science and Technology Practical III: Food Preservation	a
	FST 2512	Statistics for Food Science I	c
	FST 2562	Advanced Analytical Techniques for Food Industry (based on FST 297 2.0)	c
	FST 2602	Applied Human Nutrition (Based on FST 169 1.0)	c
	FST 2621	Electrochemistry (As per CHE 204 1.0)	c
	FST 2711	Hospitality Management (Based on FST 392 1.0)	c
-o- Optional	FST 2731	Environment Management and Water Quality Assurance	c
	FST 2802	Unit Operations in Food Processing	c
	FST 2812	Food Preservation Technology	c
	FST 2861	Analytical Microbiology	c
	FST 2941	Chemistry Practical (Based on CHE 209 2.0)	a
	Total		16
	SECOND YEAR		
Semester II			
	FST 2521	Food Science and Technology Practical IV: Post Harvest Management and Microbiological Aspects of Foods	a
	FST 2542	Food Engineering (Based on FST 378 2.0)	c
	FST 2611	Organic Spectroscopy (As per CHE 203 1.0)	c
	FST 2641	Chemical Kinetics (As per CHE 206 1.0)	c
	FST 2651	Nutrition and Dietetics (Based on 268 1.0)	c
	FST 2692	Post-Harvest Management of Plant and Animal Commodities	c
	FST 2792	Food Safety and Regulations (Based on FST 370 1.0)	c
	FST 2831	Supply Chain Management (Based on FST 456 1.0)	c
	FST 2892	Statistics for Food Science II (Based on FST 351 2.0)	c
	FST 2902	Food Chemistry	c
	FST 2912	Quality Systems for Food Industry	c
	FST 2951	Flavour Science	c
	FST 2991	Chemistry Practical	a
	Total		19

THIRD YEAR

Semester I

FST 3502	Food Science and Technology Practical V: Food Analysis and Product Technology	a
FST 3522	Grain and Bakery Technology (Based on FST 292 1.0 and FST 383 1.0)	c
FST 3562	Food Quality Management (Based on FST 376 2.0)	c
FST 3572	Food Packaging (Based on FST 282 1.0)	c
FST 3582	Food Analysis and Food Structures (based on FST 361 1.0)	c
FST 3641	ICT for Food Science and Technology	c
FST 3651	Operations Management	c
FST 3711	Seafood Science and Processing Technology	c
FST 3721	Sensory Science for Consumer Analytics	c
FST 3852	Statistics for Food Science III (Based on FST 366 2.0)	c
FST 3881	Confectionery Technology	c
FST 3952	Beverage Technology	c
Total		19

THIRD YEAR

Semester II

FST3532	Food Science and Technology Practical VI: Advanced Food Analysis and Product Technology	a
FST 3551	Animal Feed Technology	o
FST 3901	Nano Technology in Food Systems	o
FST 3741	Fish and Meat Processing Technology	c
FST 3752	Advanced Sensory Science for Product Forecasting	c
FST 3772	Spices, Root, and Tuber Crops Processing Technology (based on FST 386 1.0)	c
FST 3802	Social Mobilisation and Knowledge Transfer	c
FST 3841	Fruits and Vegetables Processing Technology	c
FST 3871	Fats and Oil Processing Technology	c
FST 3891	Mechanical Aspects of Food Processing Technology (based on FST 379 and FST 391 1.0)	c
FST 3931	Kernel, Nut and Oilseed Processing Technology	c
FST 3972	Experimental Design and Analysis for Food Research and Industry	c
FST 3981	Sustainable Food Systems and Circular Economy (Based on FST 359 1.0)	c
FST 3991	Dairy Processing Technology	c
Total		19

Course Type

-a-
Compulsory

-c-
Core

-o-
Optional

Course Type			
-a- Compulsory	FOURTH YEAR		
	Semester I		
-c- Core	FST 4581	Strategic Management	c
	FST 4611	Food Toxicology and Allergens	c
	FST 4621	Phytochemical Compounds in Foods	c
	FST 4811	Industrial Microbiology	c
	FST 4965	Industrial/ Research/ Field Placement	a
-o- Optional	FST 4972	Feasibility Study and Business Planning	c
	Total		11
	FOURTH YEAR		
	Semester II		
	FST 4930	Research and Communications	a
	FST 4988	Research Project	a
	Total		08
	Total number of credits — 120		

Food Science

B.Sc. Degree Course Units

Each student should take course units having a minimum cumulative credit value of 30.0

FIRST YEAR

Semester I

FSC 1121	Food Business Management	c
FSC 1242	Food Commodities for Value Addition	c
FSC 1311	Basics of Biochemistry	c
FSC 1481	Food Science and Technology Practical I	a

FIRST YEAR

Semester II

FSC 1132	Science and Processing of Tea, Coffee, and Cocoa (based on FSC 221 1.0)	c
FSC 1222	Introduction to Food Crop and Animal Technology	c
FSC 1491	Food Science and Technology Practical II	a

SECOND YEAR

Semester I

FSC 2512	Food Preservation Technology	c
FSC 2142	Applied Human Nutrition	c
FSC 2481	Food Science and Technology Practical III	a

SECOND YEAR

Semester II

FSC 2312	Food Chemistry	c
FSC 2521	Postharvest Management	c
FSC 2491	Food Science and Technology Practical IV	a
FSC 2151	Food Safety and Regulations	c

THIRD YEAR

Semester I

FSC 3162	Food Analysis and Food Structures	c
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Course Type

-a-
Compulsory

-c-
Core

-o-
Optional

Course Type			
	FSC 3142	Food Packaging (based on FSC 353 1.0)	c
	FSC 3481	Food Science and Technology Practical V (Proximate Analysis)	a
-a- Compulsory		THIRD YEAR	
		Semester II	
-c- Core	FSC 3711	Fish and Meat Processing Technology	o
	FSC 3721	Dairy Technology	o
	FSC 3731	Fruits and Vegetables Processing Technology	o
-o- Optional	FSC 3631	Microbiology of Foods	c
	FSC 3491	Food Science and Technology Practical VI (Microbiology)	a
	FSC 3951	Seminar	c



GMB

Genetics & Molecular Biology

Offered by the Genetics & Molecular Biology Unit

“Genetics is central to all biological sciences, which when combined with knowledge on Molecular Biology techniques has a variety of multidisciplinary applications”

B.Sc. Degree Programme with Genetics & Molecular Biology

Subject combinations: Refer pages 162-167

Course code: GMB

Duration: 3 years

For whom?

Biological Science stream students who are interested in pursuing research-based careers in academic, technological and industrial organizations. The

intake is limited to a maximum of 35 students (30 students from Subject combination 1 and 5 students from Subject combination 2) in an academic year. The selection of students is based on the highest Z-scores from the GCE Advanced level examination from the students who apply.

Career opportunities

This program is designed to provide basic and practical knowledge of Genetics and Molecular Biology which is a subject scarce in Sri Lanka, thereby



producing capable professionals for employment in a spectrum of fields. The ideal graduate of the program will have a sound foundation in Genetics and be competent in Molecular Biology techniques, opening doors for them in many arenas. Genetics is pivotal to all biological sciences and is an evolving field, thus allowing graduates of this field to be employed as scientists in vast variety of areas such as crop production, insecticide development, animal well-being and production, and identification of genetic disorders. As the necessity for introducing Genetics and Molecular Biology to schools and other

institutions is being recognized, the need for qualified personnel to teach the curriculum will arise, and graduates of this program will be well suited for the role. The design of the program and the professional network of the academics of the program make those interested in pursuing higher studies in related fields well positioned to do so at renowned institutions worldwide.

Course overview

This program is introduced with the objective of

creating well-rounded individuals, and the curriculum is designed to cater to this. Starting with basic courses such as Fundamentals of genetics, Molecular cell biology, and Molecular genetics, and gradually feeding into advanced courses such as Gene expression and regulation, Bioinformatics, Genomics and proteomics, the curriculum for the program is diverse and covers many areas of interest. The students will also have the opportunity to get industrial training in related areas giving them much-needed exposure to standing out in the competitive job market. The courses are designed not only to deliver knowledge but also to bring out hidden facets such as creativity and leadership. A key feature of the program is the opportunity for students to be inventors through a student-led project in the third year, where they will identify a need and develop a product or service to fulfill it. Not only will this allow students to put into practice what they have learned, but will also create individuals who are independent and can take initiative.

Course structure

Students following the B.Sc. Degree will acquire 30 credits each from Chemistry, Biology / Environmental Management and Forestry and Genetics and Molecular Biology subject combinations during the three years totaling 90 credits at graduation. Course units are classified as compulsory, core and optional and are designed to provide the students with basic and specialized knowledge and skills required in the

field.

B.Sc. Honours Degree Programme in Genetics & Molecular Biology

Duration: 4 years

Career opportunities

The main objective of the B.Sc. (Honours) Degree Program in Genetics & Molecular Biology is to produce a cohort of students who have in-depth knowledge and hands-on experience in advanced areas of Genetics and Molecular Biology. The honours curriculum is designed in a way in which students will acquire specific knowledge, practical experience, and soft skills that set them apart from other science graduates in Sri Lanka. Therefore, students will be able to confidently pursue higher studies in a related field. Students will have immense opportunities around the world as academics and researchers in a diverse range of fields.

Course overview

Students following the B.Sc. (Honours) degree will acquire 20 credits each from Chemistry, Biology / Environmental Management and Forestry and Genetics and Molecular Biology subject combinations during the first two years totaling 60 credits. The remaining 60 credits will be acquired from level 6 courses in Genetics and Molecular Biology during the third and fourth years totaling 120 credits by

graduation.

Selection

The ten students with the highest GPA at the end of the first two years will be selected to follow this program. The minimum GPA is 3.5.

Mode of instruction and assessment

The academic staff of the unit is committed to providing a well-rounded learning experience. Lectures and practicals will be conducted in English and relevant course material will be uploaded on LMS, the online learning management system. Courses are designed such that students get a solid foundation, hands-on laboratory experience, and an opportunity to bring out their hidden talents. Learning is a multifaceted process and students will be continuously assessed via interactive classroom discussions, presentations, individual and group projects, and semester-end written and practical examinations.

For further information, please contact;

Dr. Pamoda Jayatunga

Coordinator

Genetics & Molecular Biology Unit

Email: coordinator_gmbu@sjp.ac.lk

Genetics & Molecular Biology

B.Sc. Degree Course Units

FIRST YEAR

Semester I

GMB 1012	Molecular Cell Biology	c
GMB 1022	Fundamentals of Genetics	c
GMB 1311	Laboratory Work in Genetics and Molecular Cell Biology	a

Semester II

GMB 1032	Fundamentals of Molecular Genetics	c
GMB 1052	Techniques in Molecular Biology and Genetic Engineering	c
GMB 1321	Laboratory Work in Molecular Biology Techniques	a

SECOND YEAR

Semester I

GMB 2091	Introduction to Bioinformatics	c
GMB 2112	Genomics and Proteomics	c
GMB 2051	Gene Expression and Regulation	c
GMB 2331	Laboratory Work in Recombinant DNA Technology and Gene Regulation	a

Semester II

GMB 2071	Quantitative and Population Genetics	c
GMB 2121	Immunobiology	c
GMB 2042	Microbes and Microbial Genetics	c
GMB 2341	Laboratory Work in Microbial Genetics and Immunology	a

Course Type

-a-
Compulsory

-c-
Core

-o-
Optional

Course Type	THIRD YEAR		
	Semester I		
-a- Compulsory	GMB 3172	Biochemistry	c
	GMB 3361	Laboratory Work in Biochemistry, RNA and Protein Techniques	a
-c- Core	GMB 3481	Research Skills Development	o
	GMB 3041	Developmental Genetics	o
	GMB 3191	Career Skills Development	o
-o- Optional	GMB 3152	Introduction to Computer Programming and Web Designing	o
	GMB 3291	Occupational Competence	o
	Semester II		
	GMB 3421	Epigenetics	c
	GMB 3262	Molecular Entomology	o
	GMB 3441	RNA Biology	c
	GMB 3461	Nanobiology	c
	GMB 3501	Mini-Project	a
	GMB 3432	Molecular Basis of Diseases	o
	GMB 3211	Molecular Modeling and Computational Biochemistry	o
	GMB 3232	Protein Engineering	o
	GMB 3271	Bioeconomics	o
	GMB 3051	Scientific Communication	a
	GMB 3291	Occupational Competence	o
	GMB 3181	Human Genetics and Counseling	o
	GMB 3162	Bioelectronics	o
	GMB 3211	Molecular Modeling and Computational Biochemistry	o
	GMB 3232	Protein Engineering	o
	GMB 3271	Bioeconomics	o
	GMB 3432	Molecular Basis of Diseases	o
	GMB 3262	Molecular Entomology	o

B.Sc. Honours Degree Course Units

Honours Part I

Semester I

GMB 3172	Biochemistry	c
GMB 3131	Cell Signaling and signal transduction	c
GMB 3112	Modern Biotechnology	c
GMB 3481	Research Skills Development	a
GMB 3361	Laboratory Work in Biochemistry, RNA and Protein Techniques	a
GMB 3402	Special topics in genetics and molecular biology	a
GMB 3512	Molecular Immunology	c
GMB 3041	Developmental Genetics	o
GMB 3152	Introduction to Computer Programming and Web Designing	o
GMB 3521	Advanced Bioinformatics	o
GMB 3291	Occupational Competence	o
GMB 3191	Career Skills Development	o

Semester II

GMB 3421	Epigenetics	c
GMB 3441	RNA biology	c
GMB 3461	Nanobiology	c
GMB 3491	Research Methodology	c
GMB 3413	Current Topics in Genetics and Molecular Biology	a
GMB 3371	Advance Laboratory techniques	a
GMB 3181	Human Genetics and Counseling	o
GMB 3162	Bioelectronics	o
GMB 3211	Molecular Modeling and Computational Biochemistry	o
GMB 3232	Protein Engineering	o
GMB 3271	Bioeconomics	o
GMB 3432	Molecular Basis of Diseases	o
GMB 3262	Molecular Entomology	o

Course Type

-a-
Compulsory

-c-
Core

-o-
Optional

Course Type	Honours Part II Semester I		
-a- Compulsory	GMB 4112	Molecular and Cellular Toxicology	c
	GMB 4132	Tissue and cell culture	c
	GMB 4071	Scientific Writing	c
-c- Core	GMB 4211	Advanced Population Genetics	o
	GMB 4151	Journal Club	o
	GMB 4252	Virology	o
-o- Optional	GMB 4031	Stem Cells and Regenerative Biology	o
	GMB 4222	Drug Design and Development	o
	GMB 4092	Pharmaceutical biotechnology	o
	GMB 4062	Molecular Microbial Ecology	o
	GMB 4108	Research Project (Semester 1 & 2)	a
	GMB 4182	Marine Biotechnology for Sustainable Development	o
	Semester II		
	GMB 4082	Neurobiology	o
	GMB 4122	Molecular Diagnostics and Therapeutics	o
	GMB 4162	Molecular Evolution	o
	GMB 4012	Case Studies in Genetics and Molecular Biology	o
	GMB 4191	Systems Biology	c
	GMB 4021	Molecular Ecology	o
	GMB 4108	Research Project (Semester 1& 2)	a



ICH Industrial Chemistry

Offered by the Department of Chemistry

“Industrial Chemistry is the link between academic research and industrial scale physical and chemical processes which transform raw materials into products that are beneficial to mankind”

B.Sc. Honours Degree in Industrial Chemistry

Course code: ICH

Duration: 4 years

Subject combinations : refer pages 162-167

For whom?

The main objective of the B.Sc. Honours degree in Industrial Chemistry program is to prepare the prospective students as industrial chemists and

introduce them to the basic attitudes and skills that would be required for their work in industry.

Career opportunities

The B.Sc. Honours Degree in Industrial Chemistry, offered by the Department of Chemistry is aimed at training professionals in the field of chemistry to develop skills required of chemists who will be working in industry. The strong foundations laid by the program would enable the students to seek

employment at industries as R&D manager, bench scientist, technical support specialist, or in quality control/quality assurance work. In addition to that, students also can acquire postgraduate qualifications from recognized universities which would lead to a career path in academia in universities and other institutions.

Course overview

The courses offered in the industrial chemistry honors degree program play an important role in the development of skills required of chemists who intended to be working in industry. In this regard, all courses are designed to bridge the industry-academia skill gap and also introduce more applied chemistry into the degree program in addition to the courses that offer fundamentals of chemistry

Course structure

The industrial chemistry Honours degree students in their third year follow advanced theoretical courses in the core subject areas: organic, inorganic, physical and analytical chemistry, while fourth year students follow applied chemistry courses designed to address the needs of modern knowledge-based industries. Students in the fourth year are also required to carry out an industrial process oriented research project.

The research project helps the students to apply their chemistry knowledge to industrial processes. In addition, students enhance their scientific reasoning, research and analytical skills which prepare them to

become chemists who have a good understanding of both chemistry and chemical engineering concepts. At the end of the research project, a dissertation is submitted for assessment, which is evaluated after an oral presentation followed by a viva voce examination.

Selection

Selection of the students to follow the B.Sc. Honours degree in industrial chemistry is based on the student performance in the first two academic years. The intake is typically limited to a maximum of 10 students.

Mode of instruction and assessment

The modules include lectures, tutorials, laboratory practical, industrial visits and individual and group projects and assignments. They are assessed through end-of-semester written examinations, practical tests, presentations and reports. There is an emphasis of analysis of real industrial problems to reinforce learning. For the practical class, assessment will include attendance, record book and a practical exam. A minimum of 80% attendance will be an essential requirement for completing the practical component.

For further information, please contact;

Dr. Upul Kumarasinghe
Course coordinator
Email: upulk@sjp.ac.lk

Industrial Chemistry

Course Type	B.Sc. Honours Degree Course Units		
-a- Compulsory	FIRST YEAR		
	Semester I		
	CHE 1061	Structure and Properties of Matter	c
	CHE 1081	Organic Chemistry I	c
	CHE 1101	Concepts in Inorganic Chemistry I	c
	CHE 1121	Main Group and Transition Elements	c
	CHE 1072	Chemistry Practical Module I (Semester I and II)	a
	Semester II		
	CHE 1031	Chemical Thermodynamics	c
	CHE 1091	Organic Chemistry II	c
	CHE 1022	Introduction to Analytical Chemistry	c
	CHE 1072	Chemistry Practical Module I (Semester I and II)	a
	SECOND YEAR		
	Semester I		
	CHE 2051	Chemistry of Heterocyclic and Bioorganic Chemistry	c
	CHE 2071	Phase Equilibria and Surface Chemistry	c
	CHE 2081	Quantum Chemistry	c
	CHE 2111	Concepts in Inorganic Chemistry II	c
	CHE 2092	Chemistry Practical Module II (Semester I and II)	a
	Semester II		
	CHE 2021	Chemistry of Coordination Compounds	c
	CHE 2031	Organic Spectroscopy	c
	CHE 2041	Electrochemistry	c
	CHE 2061	Chemical Kinetics	c
	CHE 2092	Chemistry Practical Module II (Semester I and II)	a
-c- Core			
-o- Optional			

THIRD YEAR

Semester I

CHE 3500	Mathematics for Chemistry	c
ICH 3511	Introduction to Bioinformatics and Bio-modeling	c
ICH 3551	Solid State Chemistry	c
ICH 3571	Industrial Electrochemistry	c
ICH 3621	Catalysts and Catalyst Design for Industrial Applications	c
ICH 3661	Chromatography for Industry	c
ICH 3692	Food chemistry and Technology	c
ICH 3722	Industrial Biochemistry and Biotechnology	c
ICH 3742	Instrumental Methods of Analysis	c
ICH 3762	Organic Chemistry Practical (Semester I and II)	a
ICH 3772	Inorganic Chemistry Practical (Semester I and II)	a
ICH 3782	Physical Chemistry Practical (Semester I and II)	a

Semester II

ICH 3632	Organic Synthesis and Industrial Applications	c
ICH 3642	Spectroscopic Techniques for Identification of Inorganic Compounds	c
ICH 3652	Spectroscopic Techniques for Identification of Organic Compounds	c
ICH 3672	Microscopic and Scattering Techniques	c
ICH 3702	Molecular Modelling and computational chemistry	c
ICH 3732	Advance Chemical Kinetics and Thermodynamics	c
ICH 3752	Industrial Applications of Green Chemistry for Sustainable Development	c

FOURTH YEAR

Semester I

ICH 4511	Extractive Metallurgy	o
ICH 4531	Glass, Ceramics and their Composites	o
ICH 4552	Industrial Waste Management	o
ICH 4591	Nanotechnology and Applications in Industry	o
ICH 4742	Chemistry of Woods and Wood Products	o
ICH 4802	Industrial Organic Chemistry	o

Course Type

-a-
Compulsory

-c-
Core

-o-
Optional

Course Type	Course ID	Course Name	Grade
-a- Compulsory	ICH 4812	Physical Organic Chemistry	c
	ICH 4832	Natural Products in Industrial chemistry	o
	ICH 4852	Industrial Management and Marketing	o
	ICH 4738	Industrial Training and Industry Based Research Project (Semester I and II)	a
-c- Core	Semester II		
	ICH 4571	Alternative Energy Sources and Energy Storage Devices	o
-o- Optional	ICH 4672	Fundamentals of Process Engineering	o
	ICH 4762	Petroleum Chemistry and Petrochemical Industry	o
	ICH 4782	Pharmaceutical Chemistry	o
	ICH 4792	Novel Developments in Polymer, Rubber and their Composites	o
	ICH 4823	Industrial Minerals and their Value-added Products	o
	ICH 4842	Quality Assurance, Accreditation and Project Management	o
	ICH 4738	Industrial Training and Industry-Based Research Project (Semester I and II)	a



ICT

Information & Communication Technology

Offered by Department of Computer Science

“Information and Communication Technology stresses on unified communication and integrating telecommunication devices, computers and software, all of which allow users to access, store, transmit and manipulate information”

B.Sc. Degree Program with Information and Communication Technology

Course Code: ICT

Duration: 3 Years

Subject combinations: Refer pages 162-167

For whom?

Physical Science Students who are selected by the University Grants Commission (UGC) through a special window. The intake is limited to a maximum of

50 students per academic year.

Career opportunities

Graduates have a broad range of career opportunities, particularly in technology-driven industries. ICT professionals are highly sought after in software companies, banking and finance, insurance, electronics, telecommunications, and government sectors. They are well prepared for roles such as Computer Programmer, Web Developer, Database Analyst, Systems Analyst, Social Media



Manager, Community Manager, and Technology Support Specialist. With strong technical and problem-solving skills, ICT graduates can pursue careers in software development, systems and network support, digital media management, and IT-related business operations across both public and private organizations.

Course overview

Learning ICT equips students with a strong foundation in computer systems and their application in developing automated and technology-driven solutions. The programme integrates both software and hardware concepts, providing a comprehensive understanding of computing systems within real-world environments. The curriculum effectively bridges theory and practice, covering key areas such as procedural and object-oriented programming, software engineering, database systems, net-centric computing, visual computing, and multimedia technologies. Regular curriculum updates ensure alignment with emerging technologies and industry demands. Graduates are equipped with solid technical knowledge, critical thinking abilities, and practical skills necessary to succeed in the rapidly evolving ICT industry.

Course structure

ICT will constitute one third of the B.Sc. (General) degree program in allowed subject combinations. Students are required to take core course units in ICT having a minimum cumulative credit value of 27.0. These course units are designed to provide student with essential knowledge in theory, practice and skills that are required in ICT industry.

Mode of instruction and assessment

Students will be taught by academic staff with good track records. The medium of instructions is English. The course units include; lectures, assignments, individual/group projects and laboratory practical. They are assessed through continuous assessments, end of semester written examinations, practical examinations, presentations and reports.

For further information please contact:

Mr. M.D.R. Perera
Head/ Department of Computer Science
Email: head.computersci@sjp.ac.lk

Information & Communication Technology (ICT)

B.Sc. Degree Course Units

Each student should take course units having a minimum cumulative credit value of 27.0

FIRST YEAR

Semester I

ICT 1011	Computer Programming	c
ICT 1022	Computer Systems Architecture	c
ICT 1032	Software Architecture and Design	c

Semester II

ICT 1042	Operating Systems and System Administration	c
ICT 1051	Database Systems and Administration	c
ICT 1062	Object Oriented Programming	c

SECOND YEAR

Semester I

ICT 2012	Data Structures and Algorithms	c
ICT 2022	Full Stack Development	c
ICT 2031	DevOps Engineering and Practices	c

Semester II

ICT 2041	Cloud Computing	c
ICT 2052	Artificial Intelligence and Machine Learning	c
ICT 2062	Data Science and Business Intelligence	c

THIRD YEAR

Semester I

ICT 3012	Embedded Systems and IoT	o
ICT 3022	Cyber Security	o

Course Type

-c-
Core

-o-
Optional

Course Type		
-c- Core	ICT 3032 Big Data Management ICT 3042 Immersive Technologies and Game Development ICT 3052 Modern Trends in IT	0 0 0
-o- Optional	Semester II ICT 3062 Quality Assurance and Project Management ICT 3072 Human Computer Interactions ICT 3082 Service Oriented Computing ICT 3092 Project ICT 3102 Artificial Intelligence and Automation ICT 3112 Emerging Technologies	0 0 0 0 0 0



MAN

Management science

Offered by the Department of Mathematics

“Mathematics is the Queen of modern science and is an efficient source of useful concepts and tools that are used to understand reality”

B.Sc. Degree Programme with Management Science

Course Code : MAN

Duration : 3 Years

Subject combination: Refer pages 162-167

For whom?

Management science study stream can be selected by both physical science and bio-science stream students who are interested in enhancing their capabilities

in management and administration of business organizations.

Career opportunities

Individuals are taught how to work with a team in order to achieve some pre-defined goals and targets of the respective organizations utilizing human resources, financial resources, natural resources and technological resources. Following the course will offer graduates excellent career opportunities in different fields of management including accounting,

banking, finance, international business, human resources and marketing.

Course overview

Management science course units offered in our faculty may provide an applied approach to understanding business and management and the context in which they operate. This programme further offers students a wide range of management stream subject areas whilst requiring them to carryout researches relating to course areas to enhance their knowledge on business world. We believe that the flexibility and academic rigour of this degree will make it very attractive to students and employers which enable students to exploit most of their strengths and interests.

Course structure

The management science course units focus on the study of key disciplines, such as Management, Accounting Processes, Economics, Statistics, Operations Research, Forecasting, Marketing and Organizational Behaviour. Of the total of 31

credits, a cumulative credit value of 27 is required to be completed at the end of 3rd year. This include compulsory and optional course units.

Mode of instruction and assessment

The Faculty of Management Studies and Commerce render their expertise and support to conduct the lecture series. Management Science uses higher order assessment activities which include interactive learning sessions, tutorials, end semester examinations and individual and group assignments to better reflect what undergraduate students can really do to demonstrate their learning growth. These assessments may test cognitive processing skills of students with regard to task-based problem-solving and decision making skills.

For further information please contact:

Dr. Anuradha Iddagoda
Senior Lecturer
Management Science Unit
Email : anuradhaiddagoda@sjp.ac.lk

Dr. K. A. Kamal Gnanaweera
Senior Lecturer
Management Science Unit
Email : kamal@sjp.ac.lk

Management Science

B.Sc. Degree Course Units

Each student should take course units having a minimum cumulative credit value of 27.0

FIRST YEAR

Semester I

MAN 1022	Principles of Micro Economics	c
MAN 1031	Methods of Operational Research I	c
MAN 1042	Management Process	c

Semester II

MAN 1262	Principles of Macro Economics	c
MAN 1281	Introduction to Statistics	c
MAN 1292	Introduction to Entrepreneurship	c

SECOND YEAR

Semester I

MAN 2012	Introduction to Human Resource Management	c
MAN 2022	Methods of Operational Research II	c
MAN 2031	Fundamentals of Accounting for Business	c

Semester II

MAN 2262	Introduction to Organizational Behaviour	c
MAN 2272	Statistical Quality Control & Industrial Statistics	c
MAN 2281	Business Law	c

THIRD YEAR

Semester I

MAN 3012	Fundamentals of Marketing	o
MAN 3022	Forecasting	o
MAN 3031	MIS and Accounting Information Systems for Managers	o

Semester II

MAN 3261	Production Control	o
MAN 3272	Microcomputers and their Applications	o
MAN 3282	Research Methodology	o
MAN 3291	Strategic Management	o

Course Type

-c-
Core

-o-
Optional



MAT

Mathematics

Offered by the Department of Mathematics

“Mathematics is the Queen of modern science and is an efficient source of useful concepts and tools that are used to understand reality”

B.Sc. Degree with Mathematics

Course Code: MAT

Duration : 3 Years

Subject combinations: Refer pages 162 - 167

For whom?

For students in the Physical Science stream who are interested in science and technology-oriented careers

with strong computational and logical thinking skills in Mathematics.

Career opportunities

Mathematics has now found an increasingly significant influence in many diverse fields, from management to medicine. Mathematics related professionals are in high demand worldwide in various capacities in academic institutes, research institutes and engineering and technical sectors.

Course overview

Scientific and industrial progress in recent years has made Mathematics one of the most important subjects of our time. An undergraduate degree with Mathematics opens pathways to diverse career opportunities in many fields. Beyond career prospects, the study of Mathematics cultivates logical thinking and the ability to analyse complex problems, thereby enabling individuals to contribute meaningfully to society. It serves not only as the language of science but also as a foundation for clear and disciplined reasoning.

Course structure

Mathematics (MAT) is offered as one of the three subjects required for the BSc degree within an approved subject combination for Physical Science students. The programme includes both core and optional course units designed to provide key mathematical knowledge and skills essential for a Physical Science graduate. The curriculum covers major areas of Mathematics such as Linear Algebra, Calculus, Differential Equations, Numerical Methods, and Scientific Computing.

In response to the increasing demand for Computational Mathematics, the department has incorporated practical components into several Mathematics course units, with students having access to a well-equipped computer laboratory.

The department also offers a Basic Mathematics course for students in the Biological Science stream.

For further information please contact:

Dr. R. Sanjeewa

Head/Department of Mathematics

E-mail: sanjeewa@sjp.ac.lk

Telephone: +94 112803470 / +94 112758386

Mathematics

B.Sc. Degree Course Units

Each student should take course units having a minimum cumulative credit value of 27.0

FIRST YEAR

Semester I

MAT 1013	Discrete Mathematics	c
MAT 1032	Differential Equations	c
MAT 1040	Scientific Computing I	c
MAT 1051	Basic Mathematics	o#

Semester II

MAT 1053	Linear Algebra I (Prerequisites: MAT 1013)	c
MAT 1072	Calculus I	c
MAT 1080	Scientific Computing II (Prerequisites: MAT 1040)	c

SECOND YEAR

Semester I

MAT 2013	Linear Algebra II (Prerequisites: MAT 1053)	c
MAT 2062	Numerical Methods	c

Semester II

MAT 2073	Calculus II (Prerequisites: MAT 1072)	c
MAT 2082	Partial Differential Equations I	c

THIRD YEAR

Semester I

MAT 3032	Mathematical Statistics I	o*
MAT 3042	Graph Theory	o
MAT 3082	Optimization (Prerequisites: MAT 2013, MAT 2073)	o
MAT 3092	Classical Mechanics	o
MAT 3102	Mathematical Modelling I	o

Course Type

-c-
Core

-o-
Optional

o#
Those who have done Combined Mathematics as a subject in A/L are not allowed to do this course

o*
Those who have done Statistics as a subject in the first or second year are not allowed to do this course unit

-o-
Optional

o*
Those who have
done Statistics as a
subject in the first or
second year are not
allowed to do this
course unit

Semester II

MAT 3122	Numerical Analysis (Prerequisites: MAT 2062)	o
MAT 3132	Mathematical Perspectives in Machine Learning (Prerequisites: MAT 2013, MAT 2073)	o
MAT 3142	Computational Mathematics	o
MAT 3152	Fluid Dynamics	o
MAT 3162	Quantum Mechanics	o
MAT 3172	Mathematical Statistics II (Prerequisites: MAT 3032)	o*



PMT

Pure Mathematics

Offered by the Department of Mathematics

“Mathematics, rightly viewed, possesses not only truth, but supreme beauty.”

BSc Degree with Mathematics and Pure Mathematics

Course Code: PMT

Duration : 3 Years

Subject combinations: Refer pages 162 - 167

For whom?

This programme is intended for students in the

Physical Science stream who have a strong interest in exploring mathematics in depth, particularly in areas such as algebra, analysis, geometry and numbers. It is also well suited for students who wish to apply analytical and logical reasoning skills to novel and emerging areas of science and technology.

Career opportunities

Graduates with a background in pure mathematics develop highly transferable skills in logical reasoning,

quantitative analysis, and abstract thinking. These competencies open opportunities in diverse sectors including education, information technology and scientific research. The program also provides a strong foundation for postgraduate studies in mathematics and related fields.

Course overview

The Pure Mathematics (PMT) programme provides students with a strong foundation in both theoretical and applied mathematics. The curriculum covers the core areas of pure mathematics including algebra, analysis and geometry, together with selected applied topics offered through Mathematics (MAT) courses. Through this programme, students develop a holistic understanding of mathematics as they analyse complex problems and explore mathematical ideas through abstraction, generalisation, and rigorous reasoning.

Course Structure:

During the first two years, the Pure Mathematics (PMT) curriculum focuses on building a strong foundation in the central areas of mathematics including Algebra, Analysis, Geometry, and Number Theory, with a strong emphasis on mathematical reasoning, rigour, and proof-based thinking. These courses introduce students to the fundamental structures and ideas that underpin modern mathematics.

In the third year, students have the opportunity

to deepen and broaden their knowledge through a range of optional courses in Algebra, Analysis, and Geometry. These courses further develop both theoretical understanding and connections to applications, allowing students to explore advanced mathematical concepts and methods.

Together with the topics covered in the Mathematics (MAT) courses, the programme enables students to gain a comprehensive understanding of the core areas of mathematics while also appreciating their diverse applications across science, technology, and other quantitative disciplines.

BSc Honours Degree in Mathematics

Course Code: PMT

Duration : 4 Years

Subject combinations: Refer pages 162-167

For whom?

This programme is intended for students who wish to study mathematics in depth and develop strong analytical, logical, and problem solving skills. It is particularly suitable for those interested in advanced topics in both pure and applied mathematics and who may wish to pursue careers in research, science, technology, or further academic study.

Career opportunities

Throughout the degree programme, students receive rigorous preparation for advanced study and research in both pure and applied mathematics. Alongside their academic training, they develop a versatile set of skills, including critical thinking, creative problem-solving, and perseverance that equips them for a wide range of career paths in academia, industry, and beyond, including research, data science, finance, technology, and engineering.

Course overview

The BSc Honours degree in Mathematics is designed to cultivate a profound and comprehensive understanding of the discipline by emphasizing the exploration of structures, patterns, and conceptual relationships at the heart of mathematical thought. The programme's foundation is built upon four central pillars of Pure Mathematics: Algebra, Analysis, Topology and Geometry, each representing a core area of theoretical inquiry.

Course Structure:

The first two years of the programme focus on building a solid foundation in the core areas of both pure and applied mathematics. During this period, students engage extensively in inquiry and problem-solving activities, with a strong emphasis on mathematical reasoning, rigour, and proof-based thinking. The third and fourth years build upon this foundation by introducing more advanced topics that deepen students' understanding of modern mathematics.

The programme is structured around key pathways in Algebra, Analysis, Topology, and Geometry, which collectively represent the major branches of mathematics. Through a combination of core and optional courses, students have the opportunity to explore these areas in depth while gaining insight into the fundamental structures and ideas that underpin modern mathematical theory.

In the final year, students undertake a Pure Mathematics research project that provides a unique opportunity to develop mathematical independence and engage in open-ended inquiry. This experience enables students to refine their ability to communicate complex mathematical ideas clearly and effectively, both in written and oral form, while cultivating the depth of understanding and intellectual maturity expected of a mathematics graduate.

Selection

From Physical Science Intake from P09, P10, P11, P12 and I03. Those who have followed above combinations including PMT are eligible for this programme. The selection will be based upon the GPA obtained for PMT courses in first two years. The number of candidates depend on the available resources of the department of Mathematics.

For further information please contact:

Dr. R. Sanjeewa

Head/Department of Mathematics

E-mail: sanjeewa@sjp.ac.lk

Telephone: +94 112803470 / +94 112758386

Pure Mathematics

BSc Degree with Mathematics and Pure Mathematics Course Units

Each student should take course units having a minimum cumulative credit value of 27.0

FIRST YEAR

Semester I

PMT 1013	Foundations of Mathematics	c
PMT 1022	Introduction to Number Theory	c

Semester II

PMT 1033	Analysis I (Prerequisites: PMT 1013)	c
PMT 1042	Geometry (Prerequisites: PMT 1013)	c

SECOND YEAR

Semester I

PMT 2013	Algebra I (Prerequisites: MAT 1053)	c
PMT 2022	Analysis II (Prerequisites: PMT 1033)	c

Semester II

PMT 2033	Algebra II (Prerequisites: PMT 2013)	c
PMT 2042	Analysis III (Prerequisites: PMT 2022)	c

THIRD YEAR

Semester I

PMT 3012	Analysis IV (Prerequisites: PMT 2042)	c
PMT 3022	Functions of Several Variables (Prerequisites: PMT 2042)	o
PMT 3032	Differential Geometry of Curves and Surfaces (Prerequisites: MAT 2013, PMT 2042)	o

Semester II

PMT 3042	Applied Algebra (Prerequisites: PMT 2033)	o
PMT 3052	Dynamical Systems	o
PMT 3062	Combinatorics	o

Course Type

-c-
Core

-o-
Optional

Course Type-c-
Core-o-
Optional**BSc Honours Degree in Mathematics Course Units****THIRD YEAR****Semester I**

PMT 3072	Honours Linear Algebra (Prerequisites: MAT 2013)	c
PMT 3083	Group Theory (Prerequisites: PMT 2033)	c
PMT 3092	Number Theory I (Prerequisites: PMT 1022)	c
PMT 3103	Topology I (Prerequisites: PMT 2042)	c
PMT 3113	Honours Real Analysis I (Prerequisites: PMT 2042)	c
PMT 3122	History of Mathematics	o
AMT 3622	Machine Learning I (Based on CSC 369 2.0 Machine Learning)	o

Semester II

PMT 3133	Complex Analysis (Prerequisites: PMT 3113)	c
PMT 3143	Ring Theory (Prerequisites: PMT 3083)	c
PMT 3153	Honours Real Analysis II (Prerequisites: PMT 3113)	c
PMT 3163	Topology II (Prerequisites: PMT 3103)	c
PMT 3173	Honours Graph Theory	o
AMT 3642	Partial Differential Equations II (Prerequisites: MAT 2082)	o
AMT 3652	Mathematical Methods (Prerequisites: MAT 2082)	o
AMT 3662	Numerical Analysis (Prerequisites: MAT 2062)	o
AMT 3702	Machine Learning II (Based on CSC 375 2.0 Machine Learning II) (Prerequisites: AMT 3622)	o

FOURTH YEAR**Semester I**

PMT 4013	Measure Theory (Prerequisites: PMT 3153)	c
PMT 4022	Seminar and Report Writing	c
PMT 4032	Module Theory (Prerequisites: PMT 3143)	o
PMT 4042	Differential Geometry (Prerequisites: PMT 3072, PMT 3153, PMT 3163)	o
PMT 4052	Mathematical Logic (Prerequisites: PMT 1013)	o
PMT 4062	Univalent Functions and Conformal Mapping	o
PMT 4998	Research Project	c

Semester II

PMT 4073	Functional Analysis (Prerequisites: PMT 3103, PMT 4013)	c
PMT 4083	Fields and Galois Theory (Prerequisites: PMT 3083, PMT 3143)	c
PMT 4092	Axiomatic Geometry (Prerequisites: PMT 1042)	o
PMT 4102	Number Theory II (Prerequisites: PMT 3092)	o
PMT 4113	Honours Combinatorics	o
PMT 4998	Research Project	c

Course Type

-c-

Core

-o-

Optional



MBL Microbiology

Offered by the Department of Botany

“Microbiology is an applied science that investigates and harnesses the industrial potential of microscopic organisms for a wide-spectrum of beneficial applications in agriculture, medicine and related fields such as the environment and food industry”

B.Sc. Degree Programme with Microbiology]

Course code: MBL

Duration: 3 Years

Subject combinations: Refer pages 162-167

For whom?

Biological science stream students who are interested in pursuing careers in academic, technological, industrial or environmental organizations. The

intake is limited to a maximum of 60 students in an academic year. Minimum number for the course is 20 in an academic year.

Career opportunities

The spectrum of jobs available for microbiology graduates include employment in fields such as, quality assurance, environmental surveillance and monitoring, food and beverage industries, research, secondary school teaching, veterinary sciences,

biofertilizer industry and agriculture, crop protection and medicine and the pharmaceutical industry.

Course overview

Microbiology is a far more exciting area of science as it investigates the unseen world around us. Although it is a very broad subject, throughout much of its history microbiology focused on three areas, fermentation, food and medicine. Manipulation of genetic information of microbes for the large-scale production of beneficial products including antibiotics, beverages, biological catalysts and hormones, has unleashed the potential of microorganisms to transform basic substrates to invaluable yields of products, within the realms of medicine, agriculture and industrial applications.

The discipline microbiology, which was originally heavily dependent on the culture of microorganisms, has evolved with the advent of time, to incorporate molecular biology and genomics techniques for the identification and characterization of individual microorganisms from microbial assortments found within diverse ecological niches. In spite of the advances made in applied microbiology in the last two decades, the field of microbiology is largely an untapped discipline with virtually unlimited potential as many microbes are to be discovered and studied.

Course structure

The subject Microbiology constitutes one third of the B.Sc. (General) degree program in an allowed

subject combination. All students who wish to offer microbiology will have to follow common compulsory and core course units during the first three semesters of the degree programme prior to the selection of microbiology as their chosen field of study. At the end of three years, total credit value gained by a student who has opted for general degree following a particular course should not be less than 27.0. A student can also opt for a special degree spending an additional year offering more advanced areas pertaining to respective subjects they have selected.

B.Sc. Honours Degree Programme in Microbiology **Duration: 4 Years**

Career opportunities

The career opportunities available for graduates of the Honours Degree Program in Microbiology, will be centered on academia as well as practicing their trade as researchers in a diverse range of hierarchical positions undertaking in depth studies on contemporary research topics with the objectives of bridging gaps in knowledge and unraveling uninvestigated areas of Applied Microbiology.

Course overview

The department offers special degree programs in Microbiology for a few students with the intention of producing graduates having an in-depth knowledge, better skills and competent in handling various aspects of the subject selected. The core curriculum



of the special degree program is designed to provide advanced knowledge in the subject and simultaneously to impart hands-on experience in the world of work through an industrial training program in a government research institute or in a private sector organization for a short period of time. The final year research project assists students to improve problem solving ability, critical thinking, and time management, thereby preparing them to become professionals.

Selection

Selection of students to follow a Honours degree in Microbiology is based on their performance during the first two academic years. The intake is limited to a maximum of 10 students per course.

Instruction and assessment

Through the knowledge and experience of academic staff of the Department of Botany and of visiting staff, we endeavor to expose students to a range of teaching and learning activities, based on the course units identified under each of the subjects offered by the department. The modules conducted include lectures, laboratory practical classes, tutorials, field classes, individual and group assignments / projects. Majority of these modules are assessed through semester end theory examination, practical examination, presentations and reports/ theses, while a few are assessed continuously.

For further information please contact:

Dr. I.U. Kariyawasam
Head/Department of Botany
E mail: isurufasi@sjp.ac.lk

Microbiology

B.Sc. Degree Course Units

Each Student Should take course units having a minimum cumulative credit value of 27.0

FIRST YEAR

Semester I

PBL/PBT/MBL 1212	Cell Biology and Fundamentals of Plant Biochemistry	c
PBL/PBT/MBL 1272	Plant Diversity	c
PBL/PBT/MBL 1311	Practical Module I	a

Semester II

PBL/PBT/MBL 1231	Principles of Ecology	c
PBL/PBT/MBL 1292	Plant Form and Function	c
PBL/PBT/MBL 1261	Classical Genetics	c
PBL/PBT/MBL 1321	Practical Module II	a

SECOND YEAR

Semester I

PBL/PBT/MBL 2212	Bioenergetics and Plant Metabolism	c
PBL/PBT/MBL 2332	Microbial Life	c
PBL/PBT/MBL 2311	Practical Module I	a

Semester II

MBL 2342	Phytopathogenic Microorganisms	c
MBL 2352	Microbial Genetics	c
MBL 2321	Practical Module II	a

THIRD YEAR

Semester I

MBL 3211	Soil and Agricultural Microbiology	c
MBL 3281	Extremophiles	c
MBL 3332	Industrial Microbiology	c
MBL 3311	Practical Module I	a

Course Type

-a-

Compulsory

-c-

Core

-o-

Optional for all those doing Plant Biotechnology

-s-

Optional for all student in the faculty (Students should get the approval of the Head of the Department before commencement of lectures)

-†-

A student may register for only one Internship Training/ Industrial Training course unit offered by any one Department

Course Type			
-a- Compulsory	Semester II		
	MBL 3231	Food and Dairy Microbiology	c
	MBL 3241	Medical Microbiology	o
	MBL 3261	Industrial Management	c
	MBL 3271	Bioinformatics and Molecular Modeling	c
-c- Core	MBL 3321	Practical Module II	a
-o- Optional for all those doing Plant Biotechnology	THIRD YEAR (Honours Part I)		
	Semester I		
	MBL 3802	Microbial Ecology	c
	MBL 3812	Microbial Systematics	c
	MBL 3854	Seminar	c
-s- Optional for all student in the faculty (Students should get the approval of the Head of the Department before commencement of lectures)	MBL 3881	Immunology	c
	MBL 3892	Advanced Industrial Microbiology	c
	MBL 3921	Genome Mapping	c
	Semester II		
	MBL 3822	Microbes in Pest Management	c
-‡- A student may register for only one Internship Training/ Industrial Training course unit offered by any one Department	MBL 3831	Microbial Biochemistry	c
	MBL 3854	Seminar	c
	MBL 3861	Laboratory techniques	c
	MBL 3872	Biostatistics	c
	MBL 3931	Advanced Mycology	c
	MBL 3941	Nanobiology	c
	FOURTH YEAR (Honours Part II)		
	Semester I		
	MBL 4801	Bioprospecting	c
	MBL 4818	Research Project on Microbiology	c
	MBL 4891	Bioethics & Biosafety	c
	MBL 4902	Pharmaceutical Microbiology	c
	MBL 4912	Standardization & Quality Management	c

MBL 4922	Organization and Dynamics of Genomes	c
MBL 4982	Postharvest Management of Perishables	c

Semester II

MBL 4818	Research Project on Microbiology	c
MBL 4832	Advanced Plant Pathology	c
MBL 4842	Advanced Plant Virology	c
MBL 4932	Environmental Microbiology	c
MBL 4941	Product Development and Marketing Management	c
MBL 4962	Plant Quarantine	c
MBL 4971	Laboratory Management for Microbiologists	c
MBL 4992	Molecular Diagnosis of Plant Diseases	c

Course Type

-a-
Compulsory

-c-
Core

-o-
Optional for all
those doing Plant
Biotechnology

-s-
Optional for all
student in the faculty
(Students should
get the approval
of the Head of the
Department before
commencement of
lectures)

-‡-
A student may
register for only one
Internship Training/
Industrial Training
course unit offered
by any one
Department



PBT

Plant Biotechnology

Offered by the Department of Botany

“Plant Biotechnology is an applied science that is centered on harnessing beneficial genes from plants to produce a host of helpful functions for human well-being”

B.Sc. Degree Programme with Plant Biotechnology

Course code: PBT

Duration: 3 Years

Subject combinations: Refer pages 162-167

For whom?

Biological science stream students who are interested in pursuing careers in academic, technological,

industrial or environmental organizations. The intake is limited to a maximum of 60 students in an academic year. Minimum number for course is 20 in an academic year.

Career opportunities

As the country is forging ahead to be the economic hub of Asia, graduates in Biotechnology will definitely have a variety of rewarding careers in both public and private sector establishments. Qualified

biotechnologists are needed across many sectors, including academic, technological, industrial and environmental organizations. In particular, the demand for biotechnology graduates is high within the fields, medicine and agriculture, where the tinkering of genes to maximize the beneficial traits of the gene products, takes precedence. In addition, with the strengthening of the 'transgenic' wave in agriculture, there will be even more opportunities for biotechnology graduates to embark on fruitful careers in the area of contemporary biotechnology.

Course overview

The rapid growth of biological knowledge is placing its prominence among other sciences. Currently there are many real-world problems that entail plants: escalating pressure for food, the need for renewable energy resources, habitat preservation are being driven by the ever growing human population. In order to overcome these problems require detailed knowledge of life's component parts at every level from molecules to ecosystems.

Biotechnology is the practical application of biological science to improve the lives of humans and quality of the environment, by exploiting the potential of biological organisms as 'factories' or 'bio-industrial units' capable of manufacturing invaluable products, including food, pharmaceuticals, nutraceuticals, vaccinations, hormones, enzymes and miscellaneous biological agents. Many of these applications are not

new but through the understanding of the genetic code followed by genetic engineering, biotechnology has turned out to be an exciting and fascinating field of science. It is only through Biotechnology that it would be possible to overcome the twenty first century real-world problems.

Course structure

The subject biotechnology constitutes one third of the B. Sc. (General) degree program in an allowed subject combination. All students who wish to offer plant biotechnology will have to follow common compulsory and core course units during the first three semesters of the degree programme prior to the selection of plant biotechnology as their chosen field of study. At the end of three years, total credit value gained by a student who has opted for general degree following a particular course should not be less than 27.0. A Student can also opt for a Honours degree spending an additional year offering more advanced areas pertaining to respective subject they have selected.

B.Sc. Honours Degree Programme in Plant Biotechnology

Duration: 4 Years

Career opportunities

The career opportunities available for graduates of

the Honours Degree Program in Plant Biotechnology, will be centered on academics as well as practicing their trade as researchers in a diverse range of hierarchical positions undertaking in depth studies on contemporary research topics with the objectives of bridging gaps in knowledge and unraveling complex areas of Applied Plant Biotechnology.

Course overview

The department offers Honours degree programs in Plant Biotechnology for few students with the intention of producing graduates having an in-depth knowledge, better skills and competent in handling various aspects of the subject selected. The core curriculum of the special degree program is designed to provide advanced knowledge in the subject and simultaneously to impart hands-on experience in the world of work through an industrial training program in a government research institute or in a private sector organization for a short period of time. The final year research project assists students to improve on problem solving ability, critical thinking, and time management and there-by prepare them to become professionals.

Selection

Selection of students to follow a Honours degree in Plant Biotechnology is based on their performance during the first two academic years. The intake is limited to a maximum of 10 students per course.

Instruction and assessment

Through the knowledge and experience of the academic staff of the Department of Botany and of visiting staff, we endeavor to expose students to a range of teaching and learning activities, based on the course units identified under each of the subjects offered by the department. The modules conducted include lectures, laboratory practical classes, tutorials, field classes, individual and group assignments / projects. Majority of these modules are assessed through semester end theory examination, practical examination, presentations and reports/ theses, while a few are assessed continuously.

For further information please contact:

Dr. I.U. Kariyawasam
Head/Department of Botany
E mail: isurufasi@sjp.ac.lk

Plant Biotechnology

B.Sc. Degree Plant Biotechnology Course

FIRST YEAR

Semester I

PBL/PBT/MBL 1212	Cell Biology and Fundamentals of Plant Biochemistry	c
PBL/PBT/MBL 1272	Plant Diversity	c
PBL/PBT/MBL 1311	Practical Module I	a

Semester

PBL/PBT/MBL 1231	Principles of Ecology	c
PBL/PBT/MBL 1261	Classical Genetics	c
PBL/PBT/MBL 1292	Plant Form and Function	c
PBL/PBT/MBL 1321	Practical Module II	a

SECOND YEAR

Semester I

PBL/PBT/MBL 2212	Bioenergetics and Plant Metabolism	c
PBL/PBT/MBL 2332	Microbial Life	c
PBL/PBT/MBL 2311	Practical Module I	a

Semester II

PBT 2242	Gene Technology	c
PBT 2281	Genes and Gene Action	c
PBT 2291	Systematics of Flowering Plants	c
PBT 2321	Practical Module II	a

THIRD YEAR

Semester I

PBT 3211	Crop Biotechnology	c
PBT 3221	Plant Tissue Culture	c
PBT 3352	Plant Pathology	c
PBT 3311	Practical Module I	a

Course Type

-a-
Compulsory

-c-
Core

-o-
Optional for all those doing Plant Biotechnology

-s-
Optional for all student in the faculty (Students should get the approval of the Head of the Department before commencement of lectures)

-‡-
A student may register for only one Internship Training/ Industrial Training course unit offered by any one Department

Course Type			
-a- Compulsory	Semester II		
	PBT 3241	Medical Biotechnology	o
	PBT 3252	Industrial Biotechnology	o
	PBT 3271	Bioinformatics and Molecular Modeling	c
-c- Core	PBT 3321	Practical Module II	a
-o- Optional for all those doing Plant Biotechnology	THIRD YEAR (Honours Part I)		
	Semester I		
	PBT 3801	Plant Genetic Resources Management	c
	PBT 3832	Genome Mapping	c
	PBT 3842	Plant Cell Culture	c
	PBT 3854	Seminar	c
-s- Optional for all student in the faculty (Students should get the approval of the Head of the Department before commencement of lectures)	PBT 3921	Biotechnology in Floriculture	c
	PBT 3982	Advanced Plant Systematics	c
	PBT 3992	Plant Biochemistry	c
	Semester II		
PBT 3854	Seminar	c	
PBT 3861	Advanced Microbial Genetics	c	
PBT 3872	Biostatistics	c	
PBT 3891	Marine Biotechnology	c	
PBT 3931	Plant Synthetic Biology	o	
PBT 3941	Nanobiology	c	
	FOURTH YEAR (Honours Part II)		
	Semester I		
PBT 4818	Research Project on Plant Biotechnology	c	
PBT 4832	Cellular Molecular Biology	c	
PBT 4852	Advanced Plant Tissue Culture	c	
PBT 4882	Plant Breeding	c	
PBT 4891	Bioethics and Biosafety	c	
PBT 4912	Standardization and Quality Management	c	
PBT 4922	Organization and Dynamics of Genomes	c	

Semester II

PBT 4818	Research Project on Plant Biotechnology	c
PBT 4842	Palynology	c
PBT 4861	Cell Signaling	c
PBT 4901	Plant Developmental Genetics	c
PBT 4932	Advanced Plant Virology	c
PBT 4962	Plant Quarantine	c
PBT 4992	Molecular Diagnosis of Plant Diseases	c
PBT 4941	Product Development and Marketing Management	c

Course Type

-a-

Compulsory

-c-

Core

-o-

Optional for all those doing Plant Biotechnology

-s-

Optional for all student in the faculty (Students should get the approval of the Head of the Department before commencement of lectures)



PBL

Plant Biology

Offered by the Department of Botany

“Plant Biology is both a fundamental and applied science dealing with the structure, function, interactions, environment, evolution and taxonomy of plants”

B.Sc. Degree programme with Plant Biology

Course Code: PBL

Duration: 3 years

Subject combinations: Refer pages 162-167

For whom?

Biological science stream students who are interested in pursuing careers in academic, technological, industrial, or environmental organizations. The intake is limited to a maximum of 60 students in an

academic year. Minimum number for course is 20 in an academic year.

Career opportunities

The range of employment opportunities available for plant biology graduates include, as plant biologists, taxonomists, researchers, secondary school teachers, agriculturists, quarantine and border control agents, roles in western and traditional medicine, park rangers and tour guides, and employment in conservation and biodiversity projects.

Course overview

The study of plants is vital as they are critical for sustaining life on earth, through generation of oxygen and providing food and medicine for all life forms including man to exist. Plant Biology or Botany is the science of plant life including fungi, algae, and viruses. Plant biology began with early human efforts to identify edible, medicinal and poisonous plants, making it one of the oldest branches of science, which gets updated continuously. With high levels of malnutrition and deficiency diseases in diverse regions of the world including South Asia, there is a need to maximize the potential of food crops, to ensure that mouths are fed, and deficiency diseases are eradicated from the face of the earth. In order to harness the fullest potential of plants as manufacturing units of foods, biological processes that form the foundation of the vitality of plants, should be extensively studied and the labyrinths of interlocking biological pathways elucidated, which essentially requires the aptitude and dedication of a new breed of plant biologists.

Sri Lanka is a nation rich in endemic biodiversity and there is a vast amount of untapped resources to be harnessed from our unique assortment of flora found within our island shores. In order to reap the benefits of our endemic plant biodiversity, it is essential that a pool of graduates is developed with an in-depth knowledge in contemporary plant biology. Therefore, the discipline, plant biology, engineers a strong foundation for a student to impending pursue

a rewarding career while securing his/her interests in the appreciation of the diversity in plant life.

Course structure

The subject plant biology constitutes one third of the B.Sc. (General) degree programme in an allowed subject combination. All students who wish to offer plant biology will have to follow common compulsory and core course units during the first three semesters of the degree programme prior to the selection of plant biology as their chosen field of study. At the end of three years, total credit value gained by a student who has opted for general degree following a particular course should not be less than 27.0. A student can also opt for a Special degree spending an additional year offering more advanced areas pertaining respective subject he/she has selected

B.Sc. Honours Degree Programme in Plant Biology **Duration: 4 years**

Career opportunities

The career opportunities available for graduates of the Honours Degree Program in Plant Biology, will be centered on academia as well as practicing their trade as researchers in a diverse range of different positions undertaking in depth studies on contemporary research topics with the objectives of bridging gaps in knowledge and opening investigated areas of fundamental Plant Biology.



Course overview

The department offers Honours degree programs in Plant Biology for few students with the intention of producing graduates having an in- depth knowledge, better skills and competent in handling various aspects of the subject selected. The core curriculum of the Honours degree program is designed to provide advanced knowledge in the subject and simultaneously to impart hands-on experience in the world of work through an internship program in a government research institute or in a private sector organization for a short period. The final year research project assists students to improve on problem solving ability, critical thinking, and time management and there by preparing them to become professionals.

Selection

Selection of students to follow an Honours degree in Plant Biology is based on their performance during the first two academic years. The Plant Biology

Honours degree intake is limited to a maximum of 10 students and a minimum of 05 students per course.

Instructions and assessment

Through the knowledge and experience of academic staff of the Department of Botany and of visiting staff, we endeavor to expose students to a range of teaching and learning activities, based on the course units identified under each of the subjects offered by the department. The modules conducted include lectures, laboratory practical classes, tutorials, field classes, individual and group assignments/ projects. Majority of these modules are assessed through semester end theory examination, practical examination, presentations, and reports/theses, while a few are assessed continuously.

For further information please contact:

Dr. I.U. Kariyawasam
Head/Department of Botany
E mail: isurufasi@sjp.ac.lk

Plant Biology

FIRST YEAR

Semester I

PBL/PBT/MBL 1212	Cell Biology and Fundamentals of Plant Biochemistry	c
PBL/PBT/MBL 1272	Plant Diversity	c
PBL/PBT/MBL 1311	Practical Module I	a

Semester II

PBL/PBT/MBL 1231	Principles of Ecology	c
PBL/PBT/MBL 1261	Classical Genetics	c
PBL/PBT/MBL 1292	Plant Form and Function	c
PBL/PBT/MBL 1321	Practical Module II	a

SECOND YEAR

Semester I

PBL/PBT/MBL 2212	Bioenergetics and Plant Metabolism	c
PBL/PBT/MBL 2332	Microbial Life	c
PBL/PBT/MBL 2311	Practical Module I	a

Semester II

PBL 2241	Plant Physiology	c
PBL 2251	Fundamentals of Recombinant DNA Technology	c
PBL 2281	Genes and Gene Action	c
PBL 2291	Systematics of Flowering Plants	c
PBL 2321	Practical Module II	a

THIRD YEAR

Semester I

PBL 3221	Plant Tissue Culture	c
PBL 3242	Horticulture and Landscaping	c,s
PBL 3352	Plant Pathology	c
PBL 3311	Practical Module I	a

Course Type

-a-
Compulsory

-c-
Core

-o-
Optional for all
those doing Plant
Biotechnology

-s-
Optional for all
student in the faculty
(Students should
get the approval
of the Head of the
Department before
commencement of
lectures)

Course Type			
-a- Compulsory	Semester II	PBL 3261 Applied Microbiology	o
		PBL 3321 Practical Module II	a
		PBL 3332 Economic Botany	c
-c- Core	Plant Biology		
	THIRD YEAR (Honours Part I)		
	Semester I		
-o- Optional for all those doing Plant Biotechnology		PBL 3802 Plant Biochemistry	c
		PBL 3821 Soil and Soil Fertility	c
		PBL 3832 Genome Mapping	c
		PBL 3854 Seminar	c
		PBL 3982 Advanced Plant Systematics	c
		PBL 3992 Herbal Science and Technology	c
-s- Optional for all students in the faculty (Students should get the approval of the Head of the Department before commencement of lectures)	Semester II		
		PBL 3841 Fundamentals of GIS	c
		PBL 3854 Seminar	c
		PBL 3861 Advanced Genetics	c
		PBL 3872 Biostatistics and Computer Applications	c
		PBL 3941 Nanobiology	c
		PBL 3941 Laboratory techniques	c
		PBL 3962 Environmental Botany	c
-‡- A student may register for only one Internship Training/ Industrial Training course unit offered by any one Department	FOURTH YEAR (Honours Part II)		
	Semester I		
		PBL 4818 Research Project on Plant Biology	c
		PBL 4831 Recent Trends in Ethnobotany	c
		PBL 4852 Advanced Plant Tissue Culture	c
		PBL 4861 Plant Genetic Resources Management	c
		PBL 4882 Plant Breeding	c
		PBL 4891 Bioethics and Biosafety	c

PBL 4912	Standardization and Quality Management	c
PBL 4982	Postharvest Management of Perishables	c

Semester II

PBL 4802	Crop Protection	c
PBL 4818	Research Project on Plant Biology	c
PBL 4822	Advanced Plant Pathology	c
PBL 4922	Advanced Applied Microbiology	c
PBL 4941	Product Development and Marketing Management	c
PBL 4842	Advanced Plant Virology	c
PBL 4962	Plant Quarantine	c

Course Type

-a-
Compulsory

-c-
Core

-o-
Optional for all
those doing Plant
Biotechnology

-s-
Optional for all
students in the
faculty (Students
should get the
approval of the
Head of the
Department before
commencement of
lectures)



PHY Physics

Offered by the Department of Physics

Physics is a creative activity of human mind. Studying Physics provides you with a delightful and a rewarding experience that will make you suitable for any future career.

B.Sc. Degree programme with Physics as a subject

Course Code: PHY

Duration: 3 years

Subject combinations: Refer pages.: 162-167

For whom?

The course is primarily for the students of physical science stream who are interested in studying physics and are hoping to pursue knowledge and skills to succeed in a career in science, education, industry

and in management. The Department also welcomes students with a biological science background, who are seeking career opportunities where both physics and biology are involved, to read physics as a subject. They are even eligible to read for a Honours Degree in Physics provided they reach the required standard.

Career opportunities

The Bachelor of Science General Degree is designed to provide you with the necessary knowledge and skills



to succeed in the career of your choice. Opportunities include positions in scientific and educational services, position in industry etc. The B.Sc. Degree could open doors to these possibilities and many more.

Course overview

Physics is a natural science which encompasses a vast array of sub-fields ranging from the Solid state and sub-atomic regimes like Nuclear and Quantum physics to the study of the universe through Relativity and Astrophysics and the everyday applications such as Electronics and Optics.

A degree in physics offers you not only the subject knowledge but also the tools to be creative and think differently. It equips you with the analytical

and personal skills that are essential for personal development, for any path you decide to take in the future.

Course structure

The Bachelor of Science General Degree spans over three years. The students are required to take course units in Physics with a minimum cumulative credit value of 27.0 during the three years. The course units comprise of 'compulsory', 'core', 'non-core', 'optional', subjects so that the students are provided with the core knowledge of the physics stream while allowing some level of flexibility to pursue optional interest.

B.Sc. Honours Degree in Physics

Duration: 4 years

For whom?

The Honours Degree programme is aimed at the students who are interested in taking Physics as a career and would like to pursue an academic/research line in the future.

Course overview

The B.Sc. Honours degree caters to those of you who are fascinated by the beauty of physics and hope to pursue an academic and research career. However, this is well-balanced by some practical courses including an industrial placement scheme which exposes the students to the industrial and scientific environment of the country.

Course structure

The students are required to take course units in Physics with a minimum cumulative credit value of 30.0 each in the third and fourth years. The course units consist of 'compulsory', 'core' non-core, 'optional', subjects so that the students are provided with the core knowledge of the physics stream while allowing some level of flexibility to pursue optional interest.

Selection policy

Selection of students to follow the B.Sc. Honours Degree in Physics is based on student's performance in the first two academic years. The intake is typically

limited to a maximum of 20 students.

Mode of instruction and assessment

Students enrolled in both General and Honours Degree programs will be guided by academic staff with established track record. The modules include lectures, tutorials, laboratory practicals, individual and group projects, seminars, internship, and assignments. These are assessed through end-of-semester written examinations, practical examinations, presentations, and reports.

For further information, please contact;

Prof. W.K.I.L Wanniarachchi
Head/ Department of Physics
E-mail: head.physics@sjp.ac.lk

Physics

B.Sc. Degree Course Units

Each student should take course units having minimum cumulative credit value of 27.0

FIRST YEAR

Semester I

PHY 1011	Fundamentals of Electronics (Unaudited Unit)	o
PHY 1022	Mathematics for Bio Science Students-Semester I & II (Unaudited Unit)	o
PHY 1032	Mechanics and Properties of Matter	c
PHY 1041	Electricity and Magnetism	c
PHY 1051	Waves and Vibrations	c
PHY 1062	Practical (Elementary)- Semester I & II	a

Semester II

PHY 1072	Analog and Digital Electronics	c,n
PHY 1081	Special Theory of Relativity	c,n
PHY 1091	Atomic Physics	c
PHY 1062	Practical (Elementary)-Semester I & II	a

SECOND YEAR

Semester I

PHY 2012	Optics I	c
PHY 2022	Applied Electricity	c
PHY 2031	Practical (Optics)- Semester 1 & II	a
PHY 2041	Practical (Electronics)- Semester 1 & II	a

Semester II

PHY 2051	Statistical Physics I	c
PHY 2061	Mathematical Physics I	c
PHY 2072	Thermodynamics	c
PHY 2031	Practical (Optics)- Semester 1 & II	a
PHY 2041	Practical (Electronics)- Semester 1 & II	a

Course Type

-a-
Compulsory

-c-
Core

-n-
Optional for those
not doing Physics

-o-
Optional for those
doing Physics

Course Type	THIRD YEAR		
-a- Compulsory	Semester I		
	PHY 3011	Electromagnetic Theory I	c
	PHY 3021	Quantum Mechanics I	c
-c- Core	PHY 3031	Practical (Applied) -Semester I & II	a
	PHY 3041	Practical (Computational)-Semester I & II	a
	PHY 3061	Geophysics I	s
-o- Optional for those doing Physics	PHY 3071	Solid State Physics I	o
	PHY 3081	Sensors and Measurement Techniques	o
	PHY 3092	Group Project – Semester I & II	o
-s- Optional for all students in the faculty	Semester II		
	PHY 3051	Microprocessors and Embedded Systems	c [#]
	PHY 3031	Practical (Applied) -Semester I & II	a
-#- Those who are doing Electronics & Embedded Systems as a subject must take PHY 3111 Computer Hardware and Networking instead of PHY 3051 Microprocessors and Embedded Systems	PHY 3041	Practical (Computational)-Semester I & II	a
	PHY 3101	Space Physics	s
	PHY 3111	Computer Hardware & Networking	o
	PHY 3121	Industrial Physics	s
	PHY 3131	Astronomy	s
	PHY 3141	Metrology	o
	PHY 3151	Nanophysics I	o
	PHY 3161	Physics Education	o
	PHY 3171	Medical Physics	o
	PHY 3181	Biophysics	o
PHY 3191	Nuclear and Particle Physics	o	
Comments :			
PHY 3131: Some familiarity with Advanced Level mathematics will be essential for this course.			
PHY 1081: Knowledge in algebra is a prerequisite for this course.			

In addition to the above optional units, the students may offer any one of the B.Sc. (Special) Degree units if they have necessary prerequisite knowledge and if the time table permits. Decision with regard to the suitability of a student to follow such a unit shall be made by the lecturer in charge of that unit.

B.Sc. (Honors) Degree Course Units

PART I

Semester I

PHY 3011	Electromagnetic Theory I	c
PHY 3021	Quantum Mechanics I	c
PHY 3031	Practical (Applied) -Semester I & II	a
PHY 3041	Practical (Computational)-Semester I & II	a
PHY 3061	Geophysics I	c
PHY 3071	Solid State Physics I	c
PHY 3512	Mathematical Physics II	c
PHY 3522	Nuclear Physics	c
PHY 3532	Telecommunication	c
PHY 3542	Seminar	c
PHY 3554	Practical (Advanced) – Semester I & II	a
PHY 3581	Computational tools of Physics	o
PHY 3081	Sensors and Measurement Techniques	o

Semester II

PHY 3051	Microprocessors and Embedded Systems	c*
PHY 3031	Practical (Applied) -Semester I & II	a
PHY 3041	Practical (Applied) -Semester I & II	a
PHY 3562	Solid State Physics II	c
PHY 3572	Geophysics II	c
PHY 3602	Workshop Technology	c
PHY 3554	Practical (Advanced) – Semester I & II	a
PHY 3101	Space Physics	s
PHY 3111	Computer Hardware & Networking	o
PHY 3121	Industrial Physics	s
PHY 3131	Astronomy	s
PHY 3141	Metrology	o
PHY 3151	Nanophysics I	o
PHY 3161	Physics Education	o

Course Type

-a-
Compulsory

-c-
Core

-o-
Optional for those
doing Physics

Course Type	Course ID	Course Name	Grade
-a- Compulsory	PHY 3171	Medical Physics	o
	PHY 3181	Biophysics	o
-c- Core	PART II		
	Semester I		
	PHY 4522	Statistical Physics II	c
	PHY 4532	Microprocessor and Computer Interfacing	o†
	PHY 4548	Project – Semester I & II	c
	PHY 4553	Internship	c
	PHY 4572	Particle Physics and Instrumentation	c
	PHY 4623	Classical Mechanics	c
	PHY 4631	Nanophysics II	o
	PHY 4642	Computer Integrated Control Systems	o
--o- Optional for those doing Physics	Semester II		
	PHY 4513	Electromagnetic Theory II	c
	PHY 4563	Quantum Mechanics II	c
	PHY 4582	Space and Atmospheric Physics	c
	PHY 4592	Computational Techniques for Physics	c
	PHY 4601	Mathematical Physics III	o
	PHY 4548	Project – Semester I & II	c
	Comments:		
PHY 3131: Some familiarity with Advanced Level mathematics will be essential for this course.			
PHY 1081: Knowledge in algebra is prerequisite for this course.			
PHY 3572: PHY 3061 Geophysics I is prerequisite for this course.			
-s- Optional for all students in the faculty	Semester I		
	Semester II		
	PHY 4513	Electromagnetic Theory II	c
	PHY 4563	Quantum Mechanics II	c
	PHY 4582	Space and Atmospheric Physics	c
	PHY 4592	Computational Techniques for Physics	c
	PHY 4601	Mathematical Physics III	o
	PHY 4548	Project – Semester I & II	c
	Comments:		
	PHY 3131: Some familiarity with Advanced Level mathematics will be essential for this course.		
PHY 1081: Knowledge in algebra is prerequisite for this course.			
PHY 3572: PHY 3061 Geophysics I is prerequisite for this course.			
_*- Students who followed EES subjects in their first and second years must take PHY 3111 Computer Hardware & Networking instead of PHY 3051 Microprocessors and Embedded Systems.	Semester I		
	Semester II		
	PHY 4513	Electromagnetic Theory II	c
	PHY 4563	Quantum Mechanics II	c
	PHY 4582	Space and Atmospheric Physics	c
	PHY 4592	Computational Techniques for Physics	c
	PHY 4601	Mathematical Physics III	o
	PHY 4548	Project – Semester I & II	c
	Comments:		
	PHY 3131: Some familiarity with Advanced Level mathematics will be essential for this course.		
PHY 1081: Knowledge in algebra is prerequisite for this course.			
PHY 3572: PHY 3061 Geophysics I is prerequisite for this course.			
-†- Students who followed EES subjects in their first and second years must take PHY 4642 Computer Integrated Control Systems instead of PHY 4532 Microprocessors and Computer Interfacing.	Semester I		
	Semester II		
	PHY 4513	Electromagnetic Theory II	c
	PHY 4563	Quantum Mechanics II	c
	PHY 4582	Space and Atmospheric Physics	c
	PHY 4592	Computational Techniques for Physics	c
	PHY 4601	Mathematical Physics III	o
	PHY 4548	Project – Semester I & II	c
	Comments:		
	PHY 3131: Some familiarity with Advanced Level mathematics will be essential for this course.		
PHY 1081: Knowledge in algebra is prerequisite for this course.			
PHY 3572: PHY 3061 Geophysics I is prerequisite for this course.			



PSC

Polymer Science

Offered by the Department of Polymer Science

“Polymer Science holds a unique place within material science as it creates useful materials by changing molecular scale properties of monomers and by applying different chemical and processing techniques, catering for a wide range of applications.”

B. Sc. Honours Degree Program in Polymer Science

Course code: PSC

Duration: 4 years

Subject combinations: Refer pages 162-167

Career opportunities

This degree is designed for students to obtain an in-depth knowledge in polymer science and to thereby produce professionals for the polymer industry and

academia. As there are over five thousand polymer related industries including plastics, rubber, textile, etc. in Sri Lanka, the students who graduate with a degree in polymer science have a high opportunity to enter into the employment market and to contribute to the country's economy through research and development in the field of polymer science and by sharing their knowledge with the industries and helping these industries to prosper. Also, the program would open up great opportunities for students to



follow postgraduate degrees through research in recognized universities and research institutes in the world.

Course overview

B.Sc. Honours Degree Program in Polymer Science is designed to create competent graduates to meet

the demands of polymer related industries, research institutes and postgraduate institutes. The syllabus includes fundamentals of polymer science, more specialized and most recent advanced courses in the discipline, along with a large number of optional courses in terms of polymer engineering and technology and other fields to meet the current

demand in the country. The program is also designed for students to develop a variety of different soft skills essential for their career success and to excel in a very competitive job market.

Course structure

First two years comprises of compulsory and core course units which would lay a foundation for them to specialize in polymer science and technology. Based on students' performance in the first two years, limited number of students will be selected to follow B.Sc. Honours Degree program in polymer science depending on the available resources. Courses in third and fourth years comprise of a large number of specialized core and optional courses for students to be an experts in the field of polymer science. The practical course units are specially designed to cover almost all the applications in the polymer industry with hands on experience to apply theoretical concepts that they learnt along with a number of industrial/field visits for students to experience how things related to polymer science are utilized in the world. Students are required to carry out a research project which would enable students to gather hands on experience on scientific research and to obtain a variety of soft skills such as analytical thinking and reasoning, problem solving, etc. through research in the fourth year. A dissertation will be evaluated through an oral presentation and viva voce examination.

Mode of instruction and assessment

The courses in the syllabus are delivered as lectures, tutorials, practicals, assessments, reports, projects, etc. The medium of instruction is English. The students are assessed through end semester examinations, practical tests, reports and presentation

For further information please contact:

Head/Department of Polymer Science

E-mail: head.polymer@sjp.ac.lk

Polymer Science

Course Type	B.Sc. Honours Degree Course Units		
-a- Compulsory	FIRST YEAR		
	Semester I		
	PSC 1013	Polymer Chemistry	c
	PSC 1022	Polymer Physics	c
-c- Core	Semester II		
	PSC 1032	Polymer Degradation: Prevention and Sustainable Applications	c
	PSC 1043	Polymeric Materials	c
-o- Optional	SECOND YEAR		
	Semester I		
	PSC 2011	Polymer Thermodynamics and Solution Properties	c
	PSC 2022	Polymer Technology	c
	PSC 2032	Polymer Viscoelasticity and Rheology	c
	Semester II		
	PSC 2042	Polymer Characterization	c
	PSC 2051	Polymer Kinetics	c
	PSC 2062	Polymer Processing and Products Testing	c
	THIRD YEAR		
	Part I		
	Semester I		
	PSC 3012	Basic Chemical Engineering and Unit Operations in Polymer Industry	c
	PSC 3023	Latex Products, Tyres, Coatings and Adhesives	c
	PSC 3032	Polymers for Textile Industry	c
	PSC 3042	Management for Business Insight	o
	PSC 3051	Polymer Synthesis and Characterization - Laboratory	a
	PSC 3063	Mould and Tool Designing	c
	PSC 3072	Organic Chemistry for Polymer Modifications	o
	PSC 3082	Statistical Thermodynamics and Computational Methods in Polymer Science	c
	PSC 3094	Applied Polymer Science - Laboratory	a

			Course Type
Semester II			
PSC 3102	Polymer Blends and Composites	c	-a-
PSC 3113	Testing of Polymers	c	Compulsory
PSC 3121	Plastic Latex and Rubber: Processing and Performance Evaluation Laboratory	o	-c-
PSC 3132	Scattering and Microscopic Techniques for Polymer Characterization	c	Core
PSC 3142	Thermal Analysis Techniques for Polymer Characterization	c	
PSC 3152	Research Methodology & Scientific Writing	a	-o-
PSC 3161	Seminar	c	Optional
FOURTH YEAR			
Part II			
Semester I			
PSC 4012	Computational Tools for Polymer Industry and Finite Element Analysis	c	
PSC 4021	Applications of Engineering Concepts in Polymer Industry	c	
PSC 4031	Polymeric Materials in Energy and Sensing	o	
PSC 4041	Polymer Synthesis	c	
PSC 4058	Research Project	a	
PSC 4063	Advance Applications in Polymer Science and Technology	c	
PSC 4073	Recycling and Upcycling of Polymer Waste	c	
PSC 4081	Molecular Modelling and Computational Chemistry	o	
Semester II			
PSC 4092	Modelling 2D and 3D drawings in Polymer Industry	c	
PSC 4102	Emerging Trends in Polymer Science	c	
PSC 4112	Hydrogels	c	
PSC 4121	Quality Control and Assurance	c	
PSC 4132	Life Cycle Analysis for Polymer Products and Processes	c	
PSC 4142	Applied Statistics for Polymer Science	c	

Polymer Science and Industrial Management

Offered by the Department of Polymer Science

“Polymer Science holds a unique place within material science as it creates useful materials by changing molecular scale properties of monomers and by applying different chemical and processing techniques, catering for a wide range of applications.”

B. Sc. Honours Degree Program in Polymer Science and Industrial management

Course code: PSM

Duration: 4 years

Career opportunities

This degree is designed for students to obtain an in-depth knowledge in polymer science and industrial management aspects and to thereby produce professionals specifically for the polymer industry. As there are over five thousand polymer related industries including plastics, rubber, textile, etc. in Sri Lanka, the students who graduate with a degree in polymer science and industrial management have a high opportunity to enter into the employment market specially as management trainees or any other executive level because of their sound polymer science and management background which is unique within the Sri Lankan context.

Course overview

The B.Sc. Honours Degree Program in Polymer Science and Industrial Management is designed to develop competent graduates equipped to meet the demands of polymer-related industries. The curriculum begins by strengthening students' foundations in basic sciences, core management principles, and soft skills. As students progress into their second and third years, they delve deeper into advanced topics in polymer science and industrial management, enriched by practical and experiential learning opportunities. The fourth year marks a pivotal phase, where students apply their knowledge through two comprehensive internships, gaining invaluable real-world experience and preparing them for successful careers in the industry.

Polymer Science and Industrial Management

Course structure

This innovative program offers a well-balanced curriculum that integrates core scientific principles with hands-on industrial experience. Students will gain in-depth knowledge through specialized course units in Polymer Science and Technology, Management Science, and essential multidisciplinary subjects such as Chemistry, Physics, Mathematics, Statistics, Computer Science, and English Communication.

A distinctive feature of the program is its two six-month internships such as Management and Polymer Science and Technology, a first among state universities in Sri Lanka for science students. These internships provide invaluable exposure to real-world applications, allowing students to apply theoretical concepts, work with advanced industry technologies, and develop crucial soft skills such as problem-solving, critical thinking, communication, teamwork, and leadership. Additionally, students who demonstrate outstanding academic performance (based on their GPA at the end of the third year) have the opportunity to undertake a research project in Polymer Science and Technology instead of the second internship. This option provides a strong foundation for those aspiring to pursue higher studies in the field.

With its unique blend of scientific expertise, industrial training, managerial knowledge, and soft skills development, this program stands out among undergraduate degree offerings at government universities in Sri Lanka. The combination of dual internships, research opportunities, and a multidisciplinary curriculum makes it an ideal choice for students looking to excel in Polymer Science and Technology while also preparing for leadership roles in the industry.

Mode of instruction and assessment

The courses in the syllabus are delivered as lectures, tutorials, practicals, assessments, reports, projects, etc. The medium of instruction is English. The students are assessed through end semester examinations, practical tests, reports and presentation

For further information please contact:

Head/Department of Polymer Science

E-mail: head.polymer@sjp.ac.lk

Prof. Thilini Gunasekara

Coordinator of B.Sc. (Honours) degree in Polymer Science and Industrial Management

E-mail: thiliniidg@sjp.ac.lk

Polymer Science and Industrial Management

Course Type	B.Sc. Honours Degree Program with Polymer Science & Industrial Management			
-a- Compulsory	FIRST YEAR			
	Semester I			
	PSM 1112	Chemistry for Polymer Science I	c	
	PSM 1122	Mathematics I	c	
	PSM 1132	Physics for Polymer Science I	c	
	PSM 1141	English Language Enhancement I	c	
	PSM 1212	Management for Business Insight	c	
	PSM 1221	Seminar I -Academia and Professional Development	c	
	PSM 1313	Polymer Chemistry	c	
	PSM 1322	Polymer Physics	c	
	Semester II			
	PSM 1152	Chemistry for Polymer Science II	c	
	PSM 1162	Mathematics II	c	
PSM 1172	Physics for Polymer Science II	c		
PSM 1181	English Language Enhancement II	c		
PSM 1191	Scientific computing for Industrial Polymer Science	c		
PSM 1232	Business Economics	c		
PSM 1332	Polymer Degradation: Prevention and Sustainable Applications	c		
PSM 1343	Polymeric Materials	c		
-c- Core	SECOND YEAR			
	Semester I			
	PSM 2112	Industry Statistics	c	
	PSM 2122	Applied Electricity and Basic Electronics for Polymer Science	c	
	PSM 2131	English for Occupational Purposes I	c	
	PSM 2212	Fundamentals of Accounting and Finance	c	
	PSM 2222	Project Management	c	
	PSM 2231	Seminar II- International Industrial Standards	c	
	PSM 2311	Polymer Thermodynamics and Solution Properties	c	
	-o- Optional			

PSM 2322	Polymer Characterization	c
PSM 2332	Polymer Technology	c

Semester II

PSM 2151	Basic Laboratory Skills	a
PSM 2171	English for Occupational Purposes II	c
PSM 2242	Professional Marketing Essentials	c
PSM 2252	Information Systems for Managers	c
PSM 2262	Human Resources Management	c
PSM 2342	Polymer Viscoelasticity and Rheology	c
PSM 2352	Polymer Processing and Product Testing	c
PSM 2142	Statistical Methods	c
PSM 2163	Materials Data Sciences and Informatics	c

THIRD YEAR

Semester I

PSM 3111	Academic Writing and Communication Skills	c
PSM 3212	Management for Entrepreneurs	c
PSM 3222	Operations Management	c
PSM 3232	Fundamentals of Management Theories	c
PSM 3241	Seminar III - Citizenship and Society	c
PSM 3312	Basic Chemical Engineering and Unit Operations in Polymer Industry	c
PSM 3322	Finite Element Methods for Polymer Industry	c
PSM 3332	Polymers for Textile Industry	c
PSM 3341	Polymer Practical I	a

Semester II

PSM 3121	Academic Writing and Communication Skills	c
PSM 3252	Sustainability Management	c
PSM 3262	International Business	c
PSM 3391	Polymer Kinetics	o

Course Type

-a-
Compulsory

-c-
Core

-o-
Optional

Course Type			
-a- Compulsory	PSM 3272	Strategic Management	c
	PSM 3401	Polymer Practical II	a
	PSM 3352	Polymer Blends and Composites	o
	PSM 3362	Sustainable Solutions for Polymer Waste	o
	PSM 3372	Mould and Tool Designing	o
-c- Core	PSM 3381	Quality Control and Assurance	o
	PSM 3391	Polymer Kinetics	o
-o- Optional			
	FOURTH YEAR		
	Semester I		
	PSM 4212	Innovation and Knowledge Management	c
	PSM 4227	Internship in Management and Industrial Development	c
	PSM 4313	Applied Polymer Science	c
	PSM 4323	Computer Aided Modelling and Drawing in Polymer Industry	o
	PSM 4331	Utilities and Process Control in Polymer Industry	o
	PSM 4341	Occupational Health and Safety	o
	PSM 4351	Upcycling	o
	Semester II		
	PSM 4407	Research Project in Polymer Science and Technology	c
	PSM 4363	Testing of Polymers	o
	PSM 4372	Life Cycle Analysis for Polymer Products and Processes	o
	PSM 4382	Scatteing and Microscopic Techniques for Polymer Characterization	o
	PSM 4392	Thermal Analysis Techniques for Polymer Characterization	o



PSC

Polymer Science and Technology

Offered by the Department of Polymer Science

“Polymer Science is a blend of organic chemistry, physical chemistry, material physics, statistical mathematics, and inorganic chemistry. Polymer Technology is a combination of polymer science, some aspects of chemical engineering, rheology, and reactor designing for polymerization, mechanical aspects and mould designing. Its interdisciplinary nature makes it a fascinating and challengeable subject”

B. Sc. Degree Program with Polymer Science & Technology as a subject

Subject combinations: Refer pages 162-167

Course code: PSC

Duration: 3 years

For whom?

Polymer Science and Technology is globally

established with a wide scope in cost effective and energy saving benefits for the sustainability of the modern era. Students from physical and bio science streams who have an interest in the field of polymer science and technology are eligible. The current intake is limited to maximum of 90 students per academic year.



Opportunities

Polymer industry has become a major contributor towards national economy since the early 1930's. The function of the University of Sri Jayewardenepura in workforce development in the Polymer industry is quite dominant. With the winning combination of a strong foundation of theoretical knowledge gained through three years of course units and practical hands-on experience, students find it easy to get established in the Sri Lankan polymer-based industries

as polymer chemists, technologists, technicians, and management personnel.

Course overview

The Department of Polymer Science University of Sri Jayewardenepura has developed into an active center of providing well educated and responsible young scientists in the field of Polymer Science and Technology. The subject is offered in such a way to provide mastery in scientific theory, technology,

initiative, and creativity in the field of Polymer Science and Technology. We are constantly striving to improve our policies and develop our curriculum, in such a way to awaken creativity while nourishing their minds with knowledge. Thus, many strategic activities such as frequent industrial seminars, industrial visits, curriculum developments, workshops, conferences and since of late, organizing an annual symposiums are all part of the program.

Course structure

Chemistry, Physics and Polymer Science and Technology (PSC) are the three compulsory subjects for students who seek to join in the PSC program. Course units in chemistry, physics, and PSC in the first two years are compulsory and cover the core area of the subjects. Students in the PSC stream are eligible for a special degree program in chemistry, physics, or Polymer Science if they can meet the criterion at the end of the second year. A range of optional course units are offered with industrial training in polymer-based industry for the students in the third year.

For further information please contact:

Head/Department of Polymer Science

E-mail: head.polymer@sjp.ac.lk

Polymer Science & Technology

B.Sc. Degree Program with Polymer Science & Technology

FIRST YEAR

Semester I

PSC 1013	Polymer Chemistry	c
PSC 1022	Polymer Physics	c

Semester II

PSC 1032	Polymer Degradation: Prevention, and Sustainable Applications	c
PSC 1043	Polymeric Materials	c

SECOND YEAR

Semester I

PSC 2011	Polymer Thermodynamics and solution properties	c
PSC 2022	Polymer Technology	c
PSC 2032	Polymer Viscoelasticity and Rheology	c

Semester II

PSC 2042	Polymer Characterization	c
PSC 2051	Polymer Kinetics	c
PSC 2062	Polymer Processing and Products Testing	c

THIRD YEAR

Semester I

PSC 3012	Basic Chemical Engineering and Unit Operations in Polymer Industry	o
PSC 3023	Latex Products, Tyres, Coatings and Adhesives	o
PSC 3032	Polymers for Textile Industry	o
PSC 3042	Management for Business Insight	o
PSC 3051	Polymer Synthesis and Characterization Laboratory	c
PSC 3061	Mould and Tool Designing	o

Course Type

-a-
Compulsory

-c-
Core

-o-
Optional

Course Type	Semester II		
-a- Compulsory	PSC 3102	Polymer Blends and Composites	o
	PSC 3113	Testing of Polymers	o
-c- Core	PSC 3121	Plastic Latex and Rubber: Processing and Performance Evaluation - Laboratory	a
-o- Optional	PSC 3172	Applied Entrepreneurship in Polymer Science	o



SSM

Sports Science & Management

Offered by the Department of Sports Science

Sports Science and Management is a discipline that studies the application of scientific principles, techniques, and management practices with the aim of improving sporting performance.

B.Sc. Honours Degree in Sports Science and Management

Course Code: SSM

Duration: 4 years

Subject combinations: Refer pages 162-167

For whom?

Advanced level students in the stream of Arts/ Biological Science / Physical Science / Commerce/ Technology or any other combination (any three

subjects) who have obtained the stipulated Z score set for the Sports Science and Management Degree programme by the University Grant Commission. The maximum number of students admitted to this course will be limited to 90.

Course overview

The study of Sport Science and Management incorporates areas of sports physiology, training principles, strength and conditioning, sports medicine, applied sports physiology, sports nutrition,



management, practical knowledge of selected sports teaching and coaching practicals, etc.

Course structure

The Sports Science and Management degree is an Honours degree with full-time coursework consisting of four academic years (eight semesters). Students need to complete 120 credits of coursework/research to qualify for the award of the Bachelor of Science Honours in Sports Science and Management.

Modes of instruction and assessment

Assessment of course units are varied and comprised into a combination of coursework, continuous assessments, research reports and internship placements. Students are given the opportunity to give oral presentations as a part of formative assessment

tasks and are encouraged to develop practitioner skills alongside academic skills through the use of different assessment methods.

For further information please contact:

Dr. H. P. N. Perera

Head/Department of Sports Science

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Sports Science and Management

B.Sc. Honours Degree in Sports Science and Management

Each student should take course units having a minimum cumulative credit value of 120.

FIRST YEAR

Semester I

SSM 1012	Introductory Biology	c
SSM 1022	Introduction to Physics	c
SSM 1031	Principles of Mathematics	c
SSM 1091	Introduction to Information Technology I (based on SSM 104 1.5)	c
SSM 1532	Introduction to Sports Psychology	c
SSM 1622	Sport Management	c
SSM 1861	Fundamental Skills of Swimming	c
SSM 1872	Fundamental Movements and Skills Analysis of Athletics I	c
SSM 1881	Rhythmic Movements in Aerobics	c

Semester II

SSM 1062	Basic Biochemistry	c
SSM 1082	Sports Biomechanics	c
SSM 1101	Introduction to Information Technology II	c
SSM 1111	Introduction to Mathematical Software	c
SSM 1241	Physiology I	c
SSM 1251	General Anatomy I	c
SSM 1551	Sports Sociology	c
SSM 1891	Fundamental Movements and Skills Analysis of Athletics II	c
SSM 1903	Fundamental Movements and Skills Analysis of Ball Games	c
SSM 1911	Fundamental Movements and Skills Analysis of Gymnastics	c
SSM 1922	Aerobics for Fitness and Health Promotion	c

Course Type

-c-
Core

-o-
Optional

-e-
Elected

Course Type	SECOND YEAR		
-c- Core	Semester I		
	SSM 2012	Human Nutrition	c
-o- Optional	SSM 2232	Physiology II	c
	SSM 2242	General Anatomy II	c
	SSM 2411	Healthy Living Styles	c
	SSM 2623	Leadership and Human Resource Management in Sports Industry	c
	SSM 2702	General Theory of Sports Training	c
-e- Elected	SSM 2912	Fundamental Movements and Skills Analysis of Racket Sports	c
	SSM 2921	Weightlifting and Strength Applications	c
	SSM 2150	Professional Skills Development I	a
-a- Compulsory	Semester II		
	SSM 2032	Analytic Methods in Sports	c
	SSM 2252	Exercise and Sports Physiology	c
	SSM 2542	Applied Sports and Exercise Psychology	c
	SSM 2602	Financial Accounting	c
	SSM 2712	Strength and Conditioning I	c
	SSM 2721	Long Term Athlete Development	c
	SSM 2932	Fundamental Movements and Skills Analysis of Coordination Sports	c
	SSM 2942	Mixed Martial Arts	c
	SSM 2160	Professional Skills Development II	a
	THIRD YEAR		
Semester I			
	SSM 3622	Sport Marketing	c
	SSM 3632	Management Accounting in Sport	c
	SSM 3712	Strength and Conditioning II	c
	SSM 3722	Introduction to Sports Physiotherapy	c
	SSM 3732	Sports Medicine	c
	SSM 3742	Advanced Analytic Methods in Sports	c
	SSM 3761	Principles of Ayurveda for Sports Practices	c
	SSM 3872	Physical Education Pedagogy	c
	SSM 3150	Professional Skills Development III	a

Semester II

SSM 3522	Practicum in Sports and Physical Education	c
SSM 3642	Financial Management	c
SSM 3652	Sport Entrepreneurship and Business Development	c
SSM 3662	Sport Organizational Behavior #	o
SSM 3672	Operations Research in Sports #	o
SSM 3702	Research Methodology	c
SSM 3752	Dietetics	c
SSM 3882	Sports for Special Populations	c
SSM 3901	Advanced Training in Selected Sports	c

FOURTH YEAR

Semester I

SSM 4531	Yoga and Relaxation Techniques	c
SSM 4602	Facilities Design and Management	c
SSM 4622	Sports Budgeting and Finance	c
SSM 4642	Sport Tourism and Outdoor Recreation	c
SSM 4652	Advanced Sport Marketing	c
SSM 4671	Sport Policy and Development##	o
SSM 4708	Research Project in Sport Science and Management	a
SSM 4723	Sports Nutrition and Health Promotion	c
SSM 4731	Forensic Science in Sports ##	o
SSM 4741	Olympism and Olympic Movement ##	o
SSM 4822	Sports Law	c

Semester II

SSM 4632	Sports Event Management	c
SSM 4662	Sport Strategic Management	c
SSM 4708	Research Project in Sport Science and Management	a
SSM 4713	Internship in Sports Science and Management###	o
SSM 4753	Entrepreneurial Venture Development in Sport Science & Management###	o

Course Type

-c-Core

-o-Optional

-e-Elected

-#- A student must choose at least one of the two optional course units SSM 366 2.0 and SSM 367 2.0 in order to complete the SSM degree programme.

-##-A student must choose at least one of the three optional course units SSM 467 1.0, SSM 473 1.0 and SSM 474 1.0 in order to complete the SSM degree programme

-###-A Student must choose at least one of the two optional course units of SSM 471 3.0 and SSM 475 3.0 in order to complete the SSM degree programme

-a-Compulsory



STA Statistics

Offered by the Department of Statistics

Statistics is the study of collecting, analysing, interpreting and presenting data.

“Statistical thinking will one day be as necessary for efficient citizenship as the ability to read and write”

- H.G. Wells (1866 - 1946) in his book ‘Mankind in the Making (1903)’-

B.Sc. Degree Programme with Statistics

Course code: STA

Duration: 3 Years

Subject combinations: Refer pages 162-167

For whom?

Students from physical science stream who are interested in pursuing careers in Statistics or related disciplines. The intake at present is limited to a

maximum of 160 students in an academic year.

Career opportunities

Graduates who follow Statistics as a subject are employed as statisticians, teachers, business analysts, quality assurance managers, banking officers, planning executives, etc.

Course overview

Statistics plays a vital role in all aspects of databased

investigations using well designed experiments and surveys to discover the patterns in data, and to determine the principal causes of important effects. It is the science of drawing reliable conclusions through data collection, analysis, interpretation and presentation under uncertainty. The theory and methods of statistics are essential in a wide variety of fields such as biology, economics, engineering, medicine, public health, psychology, marketing, education, and insurance. Our degree program provides a solid training in theory, methods, and applications of statistics which are necessary for both academia and industry where advanced knowledge is required. It is developed with a strong emphasis on industry-based skills, underpinned by sound scientific knowledge and understanding.

Course structure

A three-year program is offered to students who choose the above subject combinations. All first and second year courses are core units. These courses provide a solid foundation in Statistics and computational skills with an introduction to different fields of applications. Third year general degree students have a range of optional courses in applied areas. In addition to the essential theoretical knowledge, Statistics undergraduates are given an ample opportunity to collect and analyze data and prepare statistical reports related to real world problems. They also gain vital experience in solving real world problems through

the Statistical Consultancy Unit of the Department of Statistics which offers its services to both on campus and off campus researchers. Further, students are given plenty of opportunities for practical work using industry standard computer packages such as MINITAB, SPSS, R, Eviews, etc.

B.Sc. Honours Degree in Statistics

Duration: 4 years

For whom?

The honours degree program is designed for students who aspire to be leaders in various functional areas in statistics such as academia, research, government and industry.

Career opportunities

Statisticians are consistently rated among the top jobs when factors such as salary, working conditions, and interest are combined. In general, statisticians can easily fit into careers in any field. The public and private sector rely on statistical information for decision making, regulation, controlling and planning. Some major areas of applications of Statistics are the production of government statistics, pharmaceutical research, industrial quality management, risk assessment in insurance (actuarial statistics), environmental monitoring and assessment, medical research, etc.



Some of our past graduates holding honours degrees in Statistics are now employed as lecturers at various state universities and private educational institutes affiliated to foreign universities, while many others are employed as directors, managers, executive officers of state and private banks, group compliance and systems managers, project officers, logistic analysts, management trainees, research assistants, financial analysts, program assistants, etc. Some are pursuing higher studies abroad.

Course overview

The B.Sc. honours degree in Statistics is aimed at

preparing experts in the field of Statistics. Our degree provides a firm foundation in Statistics, together with relevant mathematical and computing knowledge required to pursue higher studies in Statistics related disciplines. The degree is recognized by many universities in Canada, Europe, USA, and Australia. Doctoral degree or similar postgraduate qualifications from a recognized university would lead the career path in academia in the widely expanding university system in Sri Lanka.

Course structure

The core curriculum offered under the honours

degree is an excellent preparation for careers where statistical, mathematical and computing skills are highly valued. The courses in the third year of the Statistics honours degree are all core units while in the fourth year a wider choice of specialized optional courses is offered. Throughout the curriculum, special emphasis is placed on the up-to-date applications of Statistics in industry.

Statistics honours degree students are required to complete a comprehensive guided project which is evaluated by an oral presentation followed by a viva voce examination. In addition, students undergo a four-month, full - time, industrial training. Further, they are provided with the opportunity to solve real world problems through the Statistical Consultancy Unit enabling them to gain experience as a statistical consultant.

Selection Policy

Selection of students for the B.Sc. honours degree in Statistics is based on student performance in the first two academic years. The number of students typically depends on availability of human and other resources in the department.

Mode of instruction and assessment

Students enrolled in both B.Sc. and B.Sc.(Honours) Degree programs are taught by highly skilled, knowledgeable academic staff who are up to date

with current applications of statistical methods. Most of the basic core teachings are provided through lectures while seminars and group tutorials offer the opportunity to discuss subject matter in greater detail and raise questions in a more informal setting.

Course units are assessed through mid and end of-semester written examinations, practical tests, quizzes, presentations, viva voce examinations, and reports. Diversified learning activities and assessment methods such as seminar presentations, individual and group assignments, case studies, individual and group projects are used to encourage active and participatory learning. This diversification helps to improve soft skills such as oral and written communication, teamwork and time-management skills demanded by the employers.

For further information please contact:

Dr. Rajitha M. Silva

Head/Department of Statistics

E mail: head.stat@sjp.ac.lk

Statistics

Course Type

-c-
Core

-o-
Optional for those
following statistics

B.Sc. Degree Course Units

Each student should take course units having a minimum cumulative credit value of 27.0

FIRST YEAR

Semester I

STA 1132	Descriptive Statistics	c
STA 1142	Probability and Distribution Theory I	c
STA 1151	Elements of Sampling	c

Semester II

STA 1232	Probability and Distribution Theory II	c
STA 1242	Data Analysis I	c
STA 1251	Statistical Communication	c

SECOND YEAR

Semester I

STA 2132	Inferential Statistics	c
STA 2141	Nonparametric Statistics	c
STA 2152	Sampling Techniques	c

Semester II

STA 2242	Regression Analysis	c
STA 2252	Design and Analysis of Experiments	c
STA 2261	Data Analysis II	c

THIRD YEAR

Semester I

STA 3122	Time Series Analysis	c
STA 3142	Multivariate Statistical Methods	o
STA 3162	Discrete and Categorical Data Analysis	c
STA 3172	Advanced Designs of Experiments	o

STA 3192	Advanced Regression Analysis	o
STA 3262	Programming and Data Analysis with R	o
STA 3512	Research Methodology	o

Semester II

STA 3131	Statistical Decision Theory	o
STA 3152	Essential Skills in Statistics	c
STA 3212	Statistical Quality Assurance	o
STA 3222	Medical Statistics	o
STA 3252	Independent Study	o [#]
STA 3302	Data Analysis and Preparation of Reports	c
STA 3322	Compilation of Official Statistics	o*
STA 3332	Econometric Models	o
STA 3481	Internship Training	o [#]

B. Sc. Honours Degree Course Units

Part I

Semester I

STA 3122	Time Series Analysis	c
STA 3142	Multivariate Statistical Methods	c
STA 3162	Discrete and Categorical Data Analysis	c
STA 3172	Advanced Designs of Experiments	c
STA 3182	Advanced Distribution Theory	c
STA 3192	Advanced Regression Analysis	c
STA 3232	Actuarial Statistics (based on AMT 3022 Actuarial Science)	o
STA 3242	Operations Research (based on MAT 3572)	o
STA 3262	Programming and Data Analysis with R	c
STA 3342	Advanced Sampling Theory	o
STA 3512	Research Methodology	c
STA 3542	Machine Learning 1 (based on CSC 3692 Machine Learning I)	o

Semester II

STA 3131	Statistical Decision Theory	o
STA 3152	Essential Skills in Statistics	c

Course Type

-c-
Core

-o-
Optional for those
following Statistics

-o[#]-
B.Sc. (General)
degree students who
have followed STA
351 2.0 Research
Methodology can
do this course as an
optional course

-o*-
Those who are
doing Economics
as a subject are not
allowed to do this
course

-o[#]-
A student may
register for only one
Internship Training/
Industrial Training
course unit offered by
any one Department

Course Type

-c-
Core

-o-
Optional for those
following Statistics

STA 3212	Statistical Quality Assurance	o
STA 3222	Medical Statistics	o
STA 3272	Theory of Multivariate Statistics	c
STA 3292	Advanced Statistical Inference	c
STA 3302	Data Analysis and Preparation of Reports	c
STA 3312	Stochastic Processes	c
STA 3322	Compilation of Official Statistics	o
STA 3352	Generalized Linear and Non-linear Models	c
STA 3362	Statistical Data Mining	c
STA 3552	Optimization (based on MAT 4532)	o
STA 3561	Optimization (based on MAT 3081)	o
STA 3582	Database Management Systems (based on CSC 1042 Database Management Systems)	o##
STA 3572	Artificial Intelligence (based on CSC 3162 Artificial Intelligence)	o

Part II

STA 4722	Bayesian Inference	c
STA 4742	Statistical Consultancy	c
STA 4752	Econometric Models	o
STA 4772	Spatial Statistics	o
STA 4782	Advanced Time Series Analysis	c
STA 4802	Current Topics in Statistics	o
STA 4812	Seminar	c
STA 4838	Research Project	c
STA 4844	Industrial Training in Statistics	c
STA 4852	Measure Theory (based on MAT 4523)	o
STA 4862	Survival Analysis	o
STA 4872	Computational Inference	o
STA 4902	Linear Mixed Models and Generalized Linear Mixed Models	o
STA 4912	Special Topics in Statistics	o
STA 4922	Data Visualisation (based on ASP 4602)	o



ZOO Zoology

Offered by the Department of Zoology

The zoology discipline is devoted to unlocking the mysteries of animal life and equips students with the tools to understand life and unravel the complex connections that sustain ecosystems. This hands-on journey provides the essential skills to address real-world challenges while open for meaningful careers where graduates can make a measurable impact on the world's most pressing biological challenges.

B.Sc. Degree Programme with Zoology

Course code: ZOO

Duration: 3 Years

Subject combinations: Refer pages 162-167

For whom?

Students from biological sciences streams who are interested in pursuing careers in Zoology.

Career opportunities

Sri Lanka's rich endemic biodiversity and public health landscape create a critical demand for skilled zoologists. This program directly addresses national priorities by developing a talent pool equipped with the specialist knowledge to harness our natural heritage and tackle tropical diseases through research, surveillance, and community outreach. Our graduates are prepared for a wide spectrum of impactful careers, contributing to national development through roles in government ministries, private environmental firms, universities, research institutes, public health, education, and entrepreneurial ventures.

Course overview

The Zoology discipline is designed to provide holistic and contemporary education that blends specialist knowledge with applied laboratory and field studies. The program will cultivate the next generation of scientists, equipping them to address the unique biological challenges and aspirations of Sri Lanka as an island nation. The curriculum provides a comprehensive foundation in modern zoological principles, preparing students to engage in critical areas.

Beyond scientific expertise, the program is committed to developing essential professional skills. Students graduate as effective communicators, creative problem-solvers, and collaborative leaders, fully prepared for a successful and impactful career in the future.

Course structure

Students are required to take course units equaling a minimum cumulative credit value of 27.0. Course units are classified as compulsory, core, and optional course units, and the course units are designed to provide the student with specialist knowledge and skills required in contemporary Zoology.

B.Sc. Honours Degree Programme in Zoology

Duration: 4 Years

Career opportunities

The career opportunities available for graduates of the Honours Degree Program in Zoology will be centered on academia, government ministries, consultancy firms, and as well as practicing their trade as researchers at a diverse range of hierarchical positions, undertaking in-depth studies on contemporary research topics with the objectives of bridging gaps in knowledge and deciphering cryptic areas of fundamental Zoology.

Course overview

The B.Sc. Honours Degree in Zoology is designed to cultivate the next generation of scientific leaders through advanced training in contemporary zoological science. This program delivers a superior level of specialist knowledge, combining deep, focused inquiry with a broad interdisciplinary perspective, all

reinforced by rigorous practical training. A cornerstone of the programme is the final year research project, which is pivotal in developing a student's capacity for independent research. This experience hones critical analytical skills and enhances professional competencies in communication and collaboration, providing a direct pathway to a career in academia or specialist research. As such, the Honours Degree is the ideal foundation for high-achieving students pursuing graduate studies and leadership roles within the field

Selection

Selection of students for the Honours Degree Programme is based on the performance in the first two years, and the intake is based on availability of staff and resources.

Instruction and assessment

Students in both the General and Honours Degree programmes will learn from diverse and eminent lecturers with distinguished track records in academia and research. The Department of Zoology fosters a comprehensive learning environment that integrates lectures, laboratory practicals, demonstrations, tutorials, field studies, and project assignments. This multifaceted approach ensures a balanced development of specialist knowledge and hands-

on skills. Student progress is continuously assessed through a variety of methods, including end-of-semester examinations, practical tests, presentations, reports, and group assignments.

For further information please contact:

Prof. Dinithi Peiris
Head/Department of Zoology
E-mail: dinithi@sjp.ac.lk
Tel: +94 112804515

Zoology

Course Type

-a-
Compulsory

-c-
Core

-o-
Optional for all those
doing Zoology

-*_
Compulsory with a
pass (D+) Grade will
not be considered for
the GPA

B.Sc. Degree Course Units

Each student should take course units having minimum cumulative credit value of 27.0

FIRST YEAR

Semester I

ZOO 1171	Histology	c
ZOO 1181	Animal Diversity	c
ZOO 1201	Laboratory and Field Work	a
ZOO 1261	Evolution	c
ZOO 1281	Cell Biology	c

Total Credits - 10

Semester II

ZOO 1211	Ecology	c
ZOO 1241	Comparative Functional Anatomy	c
ZOO 1251	Laboratory and Field Work	a
ZOO 1291	Fundamentals of Environmental Science	c
ZOO 1301	Insect Biology	c

SECOND YEAR

Semester I

ZOO 2191	Parasitology	c
ZOO 2201	Laboratory and Field Work	a
ZOO 2241	Biodiversity and Conservation	c
ZOO 2302	Animal Physiology	c

Total Credits - 10

Semester II

ZOO 2181	Animal Behaviour	c
ZOO 2261	Laboratory and Field Work	a
ZOO 2281	Developmental Zoology	c
ZOO 2312	Genetics and Molecular Biology	c

THIRD YEAR

Total Credit = 20

Course Type

Semester I

ZOO 3222	Aquaculture and Ornamental Fish Breeding	o
ZOO 3242	Surface and Ground Water Ecology (Based on ARM 3012)	o
ZOO 3251	Research Project	o
ZOO 3261	Laboratory and field Work	a
ZOO 3282	Marine Fisheries Management (Based on ARM 2022)	o
ZOO 3301	Environmental Toxicology	o
ZOO 3401	Wildlife Ecology	o
ZOO 3422	Recombinant DNA Technology	o
ZOO 3482	Statistical Data Analysis (based on STA 3492 Introductory Statistics)	c

-a-

Compulsory

-c-

Core

-o-

Optional for all those doing Zoology

-‡-

A student may register for only one Internship Training/ Industrial Training course unit offered by any one Department

Semester II

ZOO 3272	Nutrition	o
ZOO 3321	Environmental Physiology (Based on ARM 3101)	o
ZOO 3331	Laboratory and Field Work	a
ZOO 3431	Fundamentals of Immunology	o
ZOO 3441	Fundamentals of Microbial Ecology	o
ZOO 3451	Wildlife Management	o
ZOO 3471	Integrated Watershed Management (Based on ARM 3111)	o
ZOO 3652	Industrial Training	o [†]
ZOO 3662	Insect Pest Management	o

B. Sc. Honours Degree Course Units

Part I

Total Credit = 30

Semester I

ZOO 3222	Aquaculture and Ornamental Fish Breeding	o
ZOO 3242	Surface and Ground Water Ecology (Based on ARM 3012)	o
ZOO 3262	Laboratory and Field Work	a
ZOO 3282	Marine Fisheries Management (Based on ARM 2022)	o
ZOO 3301	Environmental Toxicology	o
ZOO 3352	Fundamentals of GIS	o

Course Type			
-a- Compulsory	ZOO 3361	Coastal Zone Management (Based on ARM 3151)	o
	ZOO 3371	EIA Methodologies	o
	ZOO 3401	Wildlife Ecology	o
	ZOO 3422	Recombinant DNA Technology	o
	ZOO 3482	Statistical Data Analysis (based on STA 3492 Introductory Statistics)	c
-c- Core	ZOO 3611	Medical Entomology	o
	Semester II		
-o- Optional for all those doing Zoology	ZOO 3272	Nutrition	o
	ZOO 3321	Environmental Physiology	o
	ZOO 3332	Laboratory, Field and Museum work	a
-#- These optional units have to be selected by students based on their research project	ZOO 3431	Fundamentals of Immunology	o
	ZOO 3441	Fundamentals of Microbial Ecology	o
	ZOO 3451	Wildlife Management	o
	ZOO 3471	Integrated Watershed Management (Based on ARM 3111)	o
	ZOO 3492	Marine and Coastal Ecology (Based on ARM 3092)	o
	ZOO 3622	Research Methodology	c
	ZOO 3632	Current Topics in Zoology	a
	ZOO 3652	Industrial Training	c
	ZOO 3662	Insect Pest Management	o
	Part II		
Semester I			
ZOO 4002	Advanced Immunology	o [#]	
ZOO 4012	Fisheries Management	o [#]	
ZOO 4022	Food chemistry	o [#]	
ZOO 4042	Advanced Ichthyology	o [#]	
ZOO 4052	Fundamental Concepts in Agricultural Entomology	o [#]	
ZOO 4062	Molecular Genetics	o [#]	
ZOO 4072	Advanced Microbial Ecology	o [#]	
ZOO 4082	Wildlife Conservation and Management	o [#]	
ZOO 4092	Arthropod Vectors of Human Diseases	o [#]	

ZOO 4121	Literature Review	a
ZOO 4132	Biochemical Signalling	o [#]
ZOO 4232	Limnology - Advanced aspects	o [#]
ZOO 4302	Freshwater Pollution and Management	o [#]
ZOO 4313	Special Topics in Zoology	a
ZOO 4321	Hematology	c
ZOO 4331	Radiation Biology	c
ZOO 4342	Statistical Methods (based on STA 4992 Statistical Methods)	c

Semester II

ZOO 4142	Molecular Principles of Human Diseases	o
ZOO 4212	Fish Population Dynamics	o [#]
ZOO 4222	Food Management	o [#]
ZOO 4242	Aquaculture Engineering Principles	o [#]
ZOO 4252	Bio-intensive Intergrated Pest Management	o [#]
ZOO 4262	Molecular Systematics	o [#]
ZOO 4272	Applications of Microbial Ecology	o [#]
ZOO 4282	Tetrapod Biology	o [#]
ZOO 4292	Mosquito Biology	o [#]
ZOO 4918	Research Project (Semester I & II)	a

Course Type

-a-

Compulsory

-c-

Core

-o-

Optional for all those doing Zoology

-#-

These optional units have to be selected by students based on their research project



ASP / ASB / ASC **B.Sc. (Honours) Degree in Applied Sciences** **(Four-year Extended Degree Programme)**

Offered by the Faculty of Applied Sciences

The B.Sc. (Honours) Degree in Applied Sciences (3+1) is a dynamic programme designed to shape the next generation of industry-ready science professionals. By combining a strong academic foundation with hands-on technical training, students gain valuable practical experience, critical thinking abilities, and problem-solving skills essential for thriving in modern scientific industries. Graduates of this programme emerge as innovative, adaptable, and highly competent professionals, fully equipped to drive technological advancement, research excellence, and contribute meaningfully to national economic development. With a clear focus on employability and industry relevance, this degree ensures that students acquire the practical knowledge and expertise required to meet the evolving demands of their respective fields.

B.Sc. Honours Degree in Applied Sciences

Course Code: ASC/ASP/ASB

Duration: 4 years (3+1)

Subject combinations: Refer pages 162-167

For Whom

This program is designed for students who have entered the faculty of Applied Sciences, University of Sri Jayewardenepura through Physical, Biological or Polymer Science streams and have achieved a minimum GPA of 2.5 by the end of the fifth semester of their B.Sc. degree. The programme is offered through eight departments (Mathematics, Chemistry, Physics, Zoology, Botany, Forestry & Environmental Science, Statistics and Polymer Science) as well as associated units (Resource Economics, Management Science, Genetics & Molecular Biology) of the faculty. The extended year combines advanced coursework and an industry-based project reflecting the collaborative effort of the faculty to meet the needs of the industrial sector in Sri Lanka. Intake is limited to a maximum of 120 students, as determined by the Faculty of Applied Sciences, based on available resources.

There is a growing demand for graduates with professional qualifications to meet both current and future requirements of the industrial sector in Sri Lanka. By structuring this degree as a four-year programme with an industry-based project component, students gain access to a broad spectrum of career opportunities while also fulfilling the requirements for higher studies. As science graduates are not limited to a single field, this programme opens the door to diverse career pathways, ensuring that the degree is highly recognised both nationally and internationally.

Course overview

The B.Sc. (Honours) Degree in Applied Sciences is a full-time, four-year degree programme conducted in English, extending from the general B.Sc. degree in the Physical, Biological, or Polymer Science streams. The programme is aligned with SLQF Level 6 / NVQL 6 of the Sri Lankan Qualifications Framework (SLQF) under the Ministry of Higher Education.

In the fourth year, each student must complete course units with a minimum cumulative credit value of 30, in addition to the 90 credits earned from their B.Sc. General Degree Programme. The academic year is divided into two semesters of fifteen weeks each.

First Semester: Students must register for 17 credits, including 9 core credits (c) focused on industrial applications offered by the Faculty of Applied Sciences, and 8 optional credits (o) offered by their respective departments based on their discipline or field of study.

Second Semester: Students must register for 13 credits, comprising 10 compulsory credits (a) for an industrial-based project / in-plant training in their selected discipline, along with 2 core credits (c) assigned by the Faculty. During this semester, students undertake industrial-based project / in-plant training four days a week, attending core lectures at the university on Fridays. credits from her/his discipline/ focus subject area

To successfully graduate, students must:

- Maintain satisfactory attendance for all core courses offered by the Faculty of Applied Sciences.
- Register for a minimum of 46 credits in their discipline/focus subject over the four years.
- Complete a minimum of five months of in-plant training.

This structure ensures that graduates are highly competent, industry-ready professionals with the practical knowledge and experience required to excel in their chosen fields.

The B.Sc. (Honours) Degree in Applied Sciences is offered through the following departments, along with their respective disciplines.

Discipline	Department offering the course
Mathematics	Mathematics
Applied Mathematics	Mathematics
Chemistry	Chemistry
Polymer Science and Technology	Polymer Science
Zoology	Zoology
Aquatic Resource Management	Zoology
Forestry and Environmental Science	Forestry and Environmental Science
Physics	Physics
Electronics and Embedded Systems	Physics
Microbiology	Botany
Plant Biotechnology	Botany
Plant Biology	Botany

Biology	Botany and Zoology
Statistics	Statistics
Genetics and Molecular Biology	Genetics and Molecular Biology Unit
Economics	Resource Economics Unit
Management Science	Management Science Unit

A student is required to complete industrial-based project / in-plant training relevant to their focus subject area, under the guidance of both an external supervisor from the industry and an internal supervisor from the respective department. A thesis based on the project must be prepared and submitted to the department in order to fulfill the requirements of the degree programme and qualify for graduation.

Selection criteria

At the end of the third year, students interested in the programme are required to submit an application indicating their preferred discipline.

Applicants must have successfully completed the compulsory English course units offered by the Faculty during the first three semesters, achieving at least a pass grade. Selection for the required discipline will be based solely on the student's GPA, calculated from course units completed during the first five semesters of the B.Sc. degree (up to the first semester of the third year), as well as the availability of resources in the respective discipline, as determined by the Faculty of Applied Sciences.

Students who wish to be selected for the programme are required to maintain satisfactory attendance for courses offered by certain Departments.

Instruction and assessment

Students' performance in each course unit is evaluated and graded through one or more methods, including theory-based examinations, continuous assessments, assignments, reports, case studies, and oral examinations, as determined by the lecturer-in-charge of the respective course unit. The method of assessment for each course unit will be communicated to students at the beginning of the semester by the lecturer-in-charge. In course units comprising multiple assessments or examinations, the marks obtained in each component are combined to determine the student's final grade for the course.

For further information please contact:

Prof. D. C. T. Dissanayake
Program Coordinator
Email: chamari@sjp.ac.lk

FOURTH YEAR

The relevant course units are listed below.

Course Type

a: Candidates should register and follow these compulsory course units should obtain a minimum specified grade at the examination to qualify for the

degree and/or Class.

c: Candidates should register and follow these core course units to qualify for the degree or class.

n: These course units are chosen by candidates according to their preference, but based on the selection criteria set by the FAS. To register for this course, candidates should not have been registered for this field of study at USJ previously. (eg: Those who have not taken Management in B.Sc general degree program can register for ASP 434 2.0 Industrial Management).

o: These course units are chosen by candidates according to their preference in the relevant fields, but based on the selection criteria set by the FAS. This course unit may or may not have a pre-requisite in the relevant.

B.Sc. Hons Degree in Applied Sciences

Course Type	(Four-year Extended Degree Programme)		
-a- Compulsory	ASC 4022	Waste Management and Cleaner Production	c
	ASC 4032	Entrepreneurship and Small Business Management	c
	ASC 4041	Industrial Law and Intellectual Property	c
	ASC 4072	Scientific Education and Teaching Methodology	c
-c- Core	Semester I		
	ASC 4022	Waste Management and Cleaner Production	c
	ASC 4032	Entrepreneurship and Small Business Management	c
	ASC 4072	Scientific Education and Teaching Methodology	c
-o- Chosen by candidates according to their preference in the relevant fields, but based on the selection criteria set by the PMC	Optional Course Units Offered from Departments		
	Students must take 8 credits from the following courses offered by each department according to their interest. Students may follow some of the following course units in the fourth year if they have not followed them before. Some of the courses have prerequisites included therein.		
	ASB 4032	Plant Breeding	o
	ASP 4062	Industrial Organic Chemistry	o
	ASP 4212	Computational Mathematics*	o
	ASB 4212	Advanced plant tissue culture	o
	ASP 4222	Mathematical Modelling II	o
	ASB 4222	Plant Tissue Culture	o
	ASB 4231	Bioethics and Biosafety	o
	ASB 4242	Advanced Plant Pathology	o
-*_ Candidates who have done Applied Mathematics as a subject are not eligible to take this course unit	ASP 4252	Financial Mathematics	o
	ASB 4252	Plant Biochemistry	o
	ASB 4262	Herbal Technology	o
	ASB 4272	Plant Cell Culture	o
	ASB 4292	Advanced molecular Genetics	o
	ASB 4302	Wildlife conservation and management	o
	ASB 4312	Freshwater Pollution and Management	o
	ASB 4322	Fundamentals of GIS	o
	ASB 4332	Marine Biotechnology	o
	ASB 4342	Microbial Ecology	o
-#- Candidates who have done Management Science as a subject are not eligible to take this course unit	ASB 4352	Marine Resources Management	o
	ASB 4362	Pond and hatchery Management practices in Aquaculture	o

			Course Type
ASB 4372	EIA methodologies	o	
ASB 4382	Fisheries Economics & marketing	o	
ASB 4392	Postharvest Pathology	o	-a-
ASB 4412	Advanced Microbial Ecology	o	Compulsory
ASB 4432	Advanced Plant Virology	o	
ASB 4442	Biochemical Cell Signaling	o	-c-
ASB 4472	Advanced Microbial Genetics	o	Core
ASB 4481	Immunology	o	
ASB 4502	Molecular Genetics		-o-
ASB 4602	Standardization and Quality Management	o	Chosen by
ASB 4611	Linkage Mapping	o	candidates according
ASB 4622	Molecular and Cellular Toxicology	o	to their preference
ASB 4632	Tissue and Cell culture	o	in the relevant fields,
ASB 4641	Stem cells and regenerative biology	o	but based on the
ASB 4652	Pharmaceutical Biotechnology	o	selection criteria set
ASB 4662	Marine biotechnology for sustainable development	o	by the PMC
ASB 4672	Molecular microbial ecology	o	
ASB 4681	Journal Club for Genetics and Molecular Biology	o	-*-
ASB 4692	Molecular Diagnostics and Therapeutics	o	Candidates who
ASB 4702	Pharmaceutical Biotechnology	o	have done Applied
ASB 4902	Advanced Limnology	o	Mathematics as
ASB 4912	Arthropod Vectors of Human Diseases	o	a subject are not
ASP 4012	Environmental and Green Chemistry	o	eligible to take this
ASP 4022	Modelling and Computational Chemistry	o	course unit
ASP 4032	Soil Science and Mineral Based Industries	o	
ASP 4042	Biological Sensors and Imaging	o	-#-
ASP 4123	Modelling 2D and 3D Drawings in Polymer Industry		Candidates who have
ASP 4133	Applied Polymer Sciences - II	o	done Management
ASP 4143	Application of CAD Drawing in Polymer Industry Introduction to	o	Science as a subject
ASP 4152	Computational Tool for Polymer Technology	o	are not eligible to
ASP 4161	Polymers in Packaging Industry	o	take this course unit
ASP 4172	Advanced Polymeric Materials	o	
ASP 4232	Graph Theory with Applications (Based on AMT 454 2.0)		

B.Sc. Hons Degree in Applied Sciences

Course Type			
-a- Compulsory	ASP 4262	Graph Theory with Applications)	0
	ASP 4272	Operational Research (Based on AMT 455 2.0 Operational Research II)	0 [#]
	ASP 4282	Actuarial Science (Based on AMT 312 2.0 Actuarial Science)	0 [*]
-c- Core	ASP 4282	Genome Mapping (Based on MAT 356 2.0 Applicable Mathematics)	0 0 [*]
	ASP 4292	Non-linear Differential Equations and Dynamical Systems (Based on AMT 352 2.0 Non-linear Differential Equations and Dynamical Systems)	0
-o- Chosen by candidates according to their preference in the relevant fields, but based on the selection criteria set by the PMC	ASP 4302	Applied mathematical Techniques (New 2020)	0
	ASP 4312	Operations Management	0
	ASP 4322	Supply Chain Management	0
	ASP 4332	Project Appraisal Techniques	0
	ASP 4342	Industrial Management	0
	ASP 4352	Accounting and Finance	0
	ASP 4382	An Introduction to Answer Set Prolog (Based on AMT 457 2.0 An Introduction to Answer Set Prolog) (New 2021)	0 0
	ASP 4412	Physics of Ceramics and Glass	0
-*_ Candidates who have done Applied Mathematics as a subject are not eligible to take this course unit	ASP 4422	Applied Geophysics	0
	ASP 4431	Computational Physics in Advanced Programming	0
	ASP 4441	Physics of Agricultural materials	0
	ASP 4451	Philosophy of Science	0
	ASP 4461	Fundamentals of Digital Signal Processing	0
	ASP 4471	Advanced Nano physics	0
	ASP 4481	Nuclear Physics II	0
	ASB 4492	Biochemical Signalling	0
-#- Candidates who have done Management Science as a subject are not eligible to take this course unit	ASB 4502	Molecular Genetics	0
	ASP 4512	Multivariate Statistical Methods	0
	ASB 4521	Coastal Zone Management	0
	ASP 4522	Advanced Design and Analysis of Experiments	0
	ASP 4532	Special Topics in Statistics	0
	ASP 4542	Programming and Data Analysis with R	0
	ASP 4552	Statistical Methods of Research	0
	ASP 4562	Survival Analysis	0

ASP 4572	Advanced Distribution Theory	o
ASP 4592	Advanced Regression Analysis	o
ASB 4612	Drug Designing and Development	o
ASP 4602	Data Visualization	o
ASP 4712	Environmental Policy	o
ASP 4722	Advanced Economic Modeling	o
ASP 4732	Advanced Econometrics II	o
ASP 4742	International Economics	o
ASP 4752	Watershed and River Basin Management	o
ASP 4762	Sustainable Building Design	o
ASP 4772	Sustainable Energy Management and Technology	o
ASP 4782	Soil and its Applications	o
ASP 4792	Advances in Environmental Pollution Control	
ASP 4812	System on Chip	o
ASP 4822	Embedded Machine Learning	o
ASP 4832	Advanced Programmable Logic Controllers	o
ASP 4842	Image Processing and Embedded Computer Vision	o
ASP 4852	Human Machine Interaction Lab (New 2020)	o
ASP 4861	Reflection Seismology	o
ASP 4872	Telecommunication	o
ASP 4881	Device Fabrication Technology	o
ASP 4922	Applied Optimal Control	

Semester 11

ASC 4061	Seminar/Workshop	c
ASC 4052	Research Methodology, Scientific Writing and Business English	c
ASC 4081	Industrial based Project	a

Course Type

-a-

Compulsory

-c-

Core

-o-

Chosen by candidates according to their preference in the relevant fields, but based on the selection criteria set by the PMC

-*-

Candidates who have done Applied Mathematics as a subject are not eligible to take this course unit

-#-

Candidates who have done Management Science as a subject are not eligible to take this course unit

B. Sc. Degree Courses



B. Sc. Degree Courses

In the first year, all students except those following B.Sc. Honours Degree in Food Science and Technology, BSC Honours in Polymer Science and Industrial Management and, B.Sc. Honours Degree in Sports Science and Management should register for the B.Sc. Degree programme selecting a combination of three subjects as given below.

Students who wish to select one of the following subjects offered by the Department of Botany (PBT, PBL or MBL) shall follow it as a common course until the first semester of the second year. However, a student who wishes to change a course subject offered by the Department of Botany (PBT, PBL or MBL) can do so at the beginning of the second semester of the second year.

Students who have entered through the Biological Science stream of G.C.E. Advanced Level can select one of the combinations given below.

Combination No:	Combinations available for Biological Science Students
B01	Chemistry, Zoology, Physics
B02	Chemistry, Zoology, PBT/PBL/MBL
B03	Chemistry, PBT, EMF
B04	Chemistry, Zoology, ARM
B05	Chemistry, Management Science, PBL
B06	Chemistry, Management Science, Zoology
B07	Chemistry, Food Science, Biology
B08	Chemistry, Management Science, ARM
B09	Chemistry, Biology, GMB
B10	Chemistry, ARM, EMF
B12	Chemistry, EMF, GMB
B13	Chemistry, Biology, Management Science

PBT-Plant Biotechnology; PBL-Plant Biology; MBL-Microbiology; EMF-Environmental Management and Forestry; ARM-Aquatic Resource Management; GMB-Genetics and Molecular Biology

Students who have entered through the Physical Science stream of G.C.E. Advanced Level Examination can select one of the following combinations.

B. Sc. Degree Courses

Combination No:	Combinations available for Physical Science Students
P01	Mathematics, Chemistry, Physics
P02	Mathematics, Chemistry, Statistics
P03	Mathematics, Physics, Statistics
P04	Mathematics, Chemistry, Management Science
P05	Mathematics, Physics, Management Science
P06	Mathematics, Computer Science, Statistics
P07	Mathematics, Computer Science, Physics
P08	Mathematics, Statistics, Economics
P09	Mathematics, Applied Mathematics, Computer Science
P10	Mathematics, Physics, EES
P11	Mathematics, Management Science, Applied Mathematics

EES - Electronics and Embedded Systems

The following subject combinations are available for students entering from either Biological Science stream or Physical Science stream.

Combination No.	Combinations available for Biological Science/Physical Science Students
C01	Chemistry, EMF, Management Science
C02	Chemistry, Physics, PSC

EMF- Environmental Management and Forestry; PSC - Polymer Science and Technology

Students who have entered through the Physical Science stream following Combined Mathematics, Physics and ICT at the G.C.E. Advanced Level Examination must select one of the following combinations.

Combination No.	Combinations available for students who have sat for Combined Mathematics, Physics and ICT
I01	Mathematics, Physics, ICT
I02	Mathematics, Physics, EES

ICT - Information and Communication Technology; EES- Electronics and Embedded Systems

In addition to the course units offered under the above-mentioned subject combinations, it is mandatory that optional course units for 2 credit value are selected from the course units offered for the development of technical and/or entrepreneurial skills of undergraduates.

Course Units offered for the Development of Technical and Entrepreneurial Skills

These course units are offered with two objectives:

1. to inculcate diverse technical skills other than those associated with their chosen study streams
2. to develop entrepreneurial skills

The course units offered to developing diverse skills in undergraduates are specifically designed with a view of developing diverse skills that will not be acquired through the course units offered by their respective study streams. Students are expected to gain insightful knowledge and hands-on experience as well as socioemotional stability through the outcome-based teaching- learning experience.

The contents of some of the selected course units will enable students to start their businesses through the skills developed through the course units and related activities that will train them to become successful entrepreneurs. The Internship Training course unit will enable students to gain an understanding of the workplace environment thus giving them the experience and the competence to integrate into the world of work successfully and confidently.

It is mandatory for all students to fulfil 02 credits of their credit requirement with these course units.

Courses offered:

Year and Semester	Course code	Title	Department/ Unit/ Programme	Course Type	Remarks
3rd Year Semester I	CSC 341 1.0	Scientific Computing for Life Science	Computer Science	Optional	Only for students who entered through the Biological Sciences stream in G.C.E. A/L, who are not following FST, MAN or PHY as a subject

	EMF 333 1.0	Applications of GIS in Resource Management	Forestry and Env. Science	Optional	Students who are following EMF as a subject cannot take this course.
	MAT 316 2.0	Computer Aided Mathematics	Mathematics	Optional	Only for students who did not take Combined Mathematics as a subject in G.C.E. A/L
	EES 398 1.0	Introduction to Electronics and Embedded systems	Physics	Optional	Only for students who entered through the Biological Sciences stream in G.C.E. A/L, who are not following PHY and/or CSC as a subject
	PHY 398 1.0	Workshop Training	Physics	Optional	Only for students who entered through the Biological Sciences stream in G.C.E. A/L, who are not following Honora in Physics
	SSM 374 2.0	Advanced Analytic Methods in Sports	Sports Science	Core	
	ECN 306 1.0	Applications of Environmental Economics and Policy	Economics	Optional	Students who are following ECN or EMF as a subject cannot take this course.
	MAN 329 1.0	Strategic Management	Management Science	Optional	Students who are following MAN as a subject cannot take this course.

	COP 303 1.0	Basic Analytical Instrumentation	Instrument Centre	Optional	Students who are not taking Chemistry as a subject can take this course.
3rd Year Semester II	SSM 365 2.0	Sport Entrepreneurship and Business Development	Sports Science	Core	
	STA 349 2.0	Introductory Statistics	Statistics	Optional	Students who are following AMT/FST/STA/MAN/SSM as a subject cannot take this course.
4th Year Semester I	STA 499 2.0	Statistical Methods	Statistics	Optional	Students who are following AMT/FST/STA/MAN/SSM as a subject cannot take this course. STA 349 2.0 is a prerequisite for this course
4th Year Semester II	SSM 475 3.0	Entrepreneurial Venture Development in Sport Science and Management	Sports Science	Optional	A student must follow at least one of the optional course units SSM 471 3.0 Internship in Sports Science and Management and SSM 475 3.0 Entrepreneurial Venture Development in Sports Science and Management to complete the Bachelor of Science Honours in Sports Science and Management degree programme.



DELT

Department of English Language Teaching

Department of English Language Teaching

About English Language Proficiency Courses

Rationale

The English proficiency courses offered by the Department of English Language Teaching to the students of the Faculty of Applied Sciences are geared to assist students to deal with the English language skills they need when they follow their academic courses in English medium. The two courses in the first year first and second semesters will cover the four major skills of English language; listening, speaking, reading and writing. It is a mandatory requirement to complete the two English courses in order to obtain the degree in the university.

Course content

ENG 101 2.0 Compulsory English (Scientific Communication) is offered in the first year first semester. ENG 102 2.0 English for Scientific Discourse is offered in the first year second semester. ENG 301 2.0 Professional English (Optional) is offered in the third year first semester. All these three course units consist of the lessons focused on the general use of the language, the use of English in scientific contexts and in professional environments. The module-based teaching materials, interactive language learning methods supported by audio-visual teaching aids will be utilized in the language learning process of the above-mentioned courses.

Department of English Language Teaching

Examination and Evaluation

The final examination consists of both a written paper and continuous assessments. Continuous assessments will carry 40 marks and written paper is scaled for 60 marks.

Semester I

ENG 101 2.0 Compulsory English (Scientific Communication)* a

Semester II

ENG 102 2.0 English for Scientific Discourse c

Semester I

ENG 301 2.0 Professional English o

Course Type

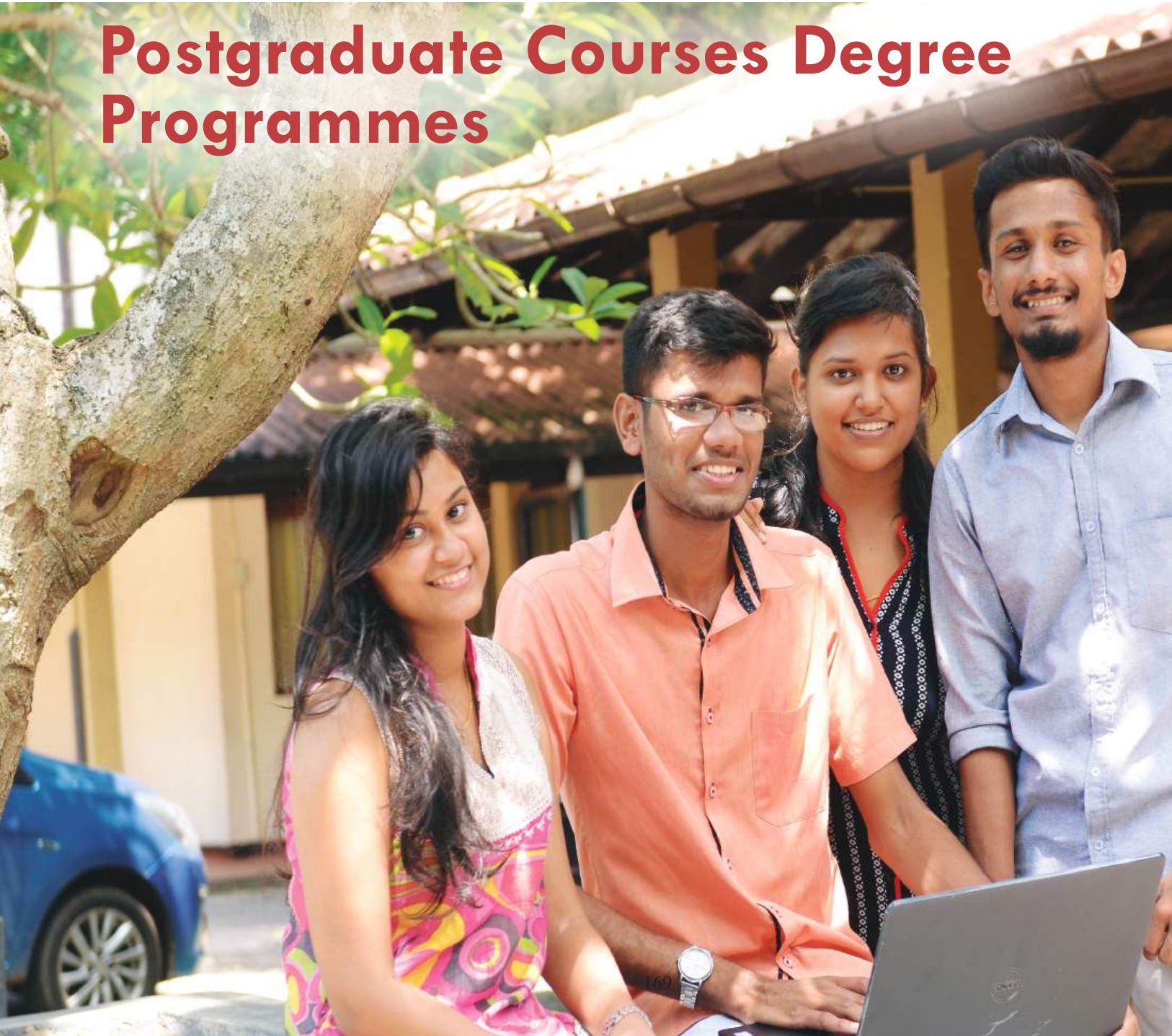
-a-
Compulsory

-o-
Optional

-c-
Core

* To obtain the degree, a minimum grade of 'C' should be obtained.

Postgraduate Courses Degree Programmes



M.Sc. Degree/Postgraduate Diploma in Industrial Analytical Chemistry

Offered by the Department of Chemistry



M.Sc. Degree/Postgraduate Diploma in Industrial Analytical Chemistry

Offered by the Department of Chemistry

Introduction

Chemical analysis plays a vital role in all aspects of life. There is an increasing demand for qualified analytical chemists throughout the world. By recognizing the need of qualified personnel in this field of science, a Master's Degree program as well as a Post Graduate Diploma in Industrial Analytical Chemistry has been initiated by the Department of Chemistry in 2013.

Course description

The Department of Chemistry at University of Sri Jayewardenepura is equipped with high-end analytical tools where students will get hands on experience in achieving the correct level of accuracy in each measurement, which is the key for developing a qualified analytical chemist. The second-year research component and the case studies are specifically designed to solve analytical chemistry problems in the industrial setup. The duration for the M.Sc. Degree is two years whereas the duration for the Post Graduate Diploma is one year.

Entry Requirements

Applicants should possess any of the following: A B.Sc. degree from any recognized university having a minimum 30 credit units in Chemistry. Any other special qualification equivalent to a degree recognized by the UGC or considered appropriate by the University Senate. Students who are awaiting results are also eligible to apply.

Careers

This course is designed to improve the analytical chemistry skills of government and industrial employees who are engaged in chemical, pharmaceutical, bio-analytical, forensic, food and environmental fields. This also gives an opportunity for university graduates to improve their entrance potential for industrial positions as well as for further higher studies.

For more information, please contact;

Dr. Asitha Cooray

Coordinator

M.Sc. Degree/P.G Diploma in Industrial Analytical Chemistry

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Website: www.sjp.ac.lk/che/analytical

MSc/Masters/Postgraduate Diploma in Industrial Organic Chemistry

Offered by the Department of Chemistry



MSc/Masters/PGDip in Industrial Organic Chemistry

Offered by the Department of Chemistry

Introduction

Organic chemistry is a dynamic and creative discipline of science involving the synthesis of carbon-based molecules and exploring the properties of exciting molecules. It forms the foundation of various disciplines such as medicine, biotechnology, and biochemistry. Moreover, organic chemistry plays a vital role in the chemical industries contributing significantly to the economy and the overall development of the country. It serves as the central science behind key industries including pharmaceuticals, agrochemicals, food production and processing, rubber manufacturing, plastics, fuel production, cosmetics, detergent production, coatings, textile chemicals, and high technology materials. These industries heavily rely on organic chemistry to manufacture a wide array of consumer goods and thousands of products inputs used in agriculture, manufacturing, construction, and the service sector.

There is a growing demand for trained organic chemists in sectors as pharmaceuticals, biotechnology, chemicals, consumer goods, and petroleum. However, undergraduate research in state academic institutes primarily focuses on the fundamental aspects of organic chemistry, leaving a gap in applied organic chemistry skills that are required by the industrial sector. To bridge this gap effectively, it is crucial to design postgraduate programs that are oriented towards industrial applications and address the practical needs of the field.

Course description

The postgraduate programs in industrial organic chemistry have been designed to provide the students with the

necessary fundamental knowledge and the essentials of novel trends in industrial organic chemistry. These programs aim to provide students with the necessary expertise to solve industrial problems in organic chemistry and use critical thinking towards industrially applied organic chemistry. Moreover, these programs will provide stronger connections with local industries through industrial visits, guest lectures by industrial experts, and industrially oriented research projects. By incorporating these industry-focused elements, the programs ensure that students gain firsthand exposure to the real-world applications of applied organic chemistry. Furthermore, the postgraduate programs offer opportunities for individuals with diverse academic and professional backgrounds to pursue postgraduate studies in organic chemistry.

MSc Industrial Organic Chemistry Course Description

Course Code	Course Title	Credits	Status
IOC80102/90102/100102	Advanced Organic Chemistry	02	C
IOC80203/90203/100203	Separation and Identification Techniques of Organic Compounds	03	C
IOC80302/90302/100302	Basics and Principles of Industrial Organic Chemistry and Chemical Engineering	02	C
IOC80402/90402/100402	Modern Medicinal Chemistry	02	C
IOC80503/90503/100503	Applications of Microbiology, Protein and Food Chemistry for Industry*	03	O
IOC80603/90603/100603	Organic Chemistry Applications in Agriculture, Petroleum and Textile Industries*	03	O
IOC80703/90703/100703	Chemistry of Natural Products and Industrial Applications	03	C
IOC80802/90802/100802	Industrial Chemical and Waste Management, Laboratory Safety, and Security	02	C
IOC80902/90902/100902	Organic Chemistry in Nanotechnology and Polymer Science Interface	02	C
IOC81001/91001/101001	Quality Assurance and Management	01	C
IOC81102/91102/101102	Research Methodology, Scientific Communications, Seminars and Industrial Visits	02	C
IOC81204/91204/101204	Laboratory Practical1,2	04	C
Total		29	

Postgraduate Diploma in Industrial Organic Chemistry

The program is designed to provide both theoretical and practical knowledge in organic chemistry for prospective students who wish to enhance their skills in organic chemistry. The program consists of theory coursework (25 credits), practical classes (4 credits), seminars and industrial visits including guest lectures by industrial experts. This is a direct entry program. In addition, this program is offered as an exit option to the Master of Science in Industrial Organic Chemistry and Master of Industrial Organic Chemistry Degree programs.

Master of Industrial Organic Chemistry

The one-year Master of Industrial Organic Chemistry program is designed to provide both theoretical and practical knowledge in organic chemistry to prospective students and industrial personals who wish to enhance their skills in organic chemistry. This course consists of theory coursework (25 credits), practical classes (4 credits), industrial visits, guest lectures and case study. The student who follows this program must carry out a case study (6 credits) related to organic chemistry / industrial organic chemistry. This is a direct entry program. In addition, this program is offered as an exit option to the Master of Science in Industrial Organic Chemistry Degree.

Master of Science in Industrial Organic Chemistry

The Master of Science in Industrial Organic Chemistry program has been designed to provide both theoretical and practical knowledge in organic chemistry to prospective students and industrial personnel who wish to enhance their skills in organic chemistry. This course consists of theory coursework (25 credits), practical classes (4 credits), industrial visits, guest lectures, case studies and research

projects. The student who follows this program must carry out a case study (6 credits) and a research project (30 credits) related to Organic Chemistry / Industrial Organic Chemistry under the supervision of a senior staff member.

Careers

The programs provide opportunities to obtain postgraduate level qualifications for prospective students, teachers, current industrials, and research institutes personnel with advanced knowledge and hands-on experiences in industrially oriented organic chemistry. In addition, this program provides qualifications for higher positions in private and public sector industries such as chemical, pharmaceutical, food, textile, polymer, etc. Further, this program serves as an entry qualification for a Doctor of Philosophy Degree.

For more information, please contact;

Prof. Laksiri Weerasinghe

Coordinator

PGDip / Master / Master of Science in Industrial Organic Chemistry

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Web: <https://science.sjp.ac.lk/che/msc-industrial-organic-chemistry/>

M.Sc. Degree/Postgraduate diploma in Polymer Science and Technology

Offered by the Department
of Polymer Science



M.Sc. Degree Programme in Polymer Science and Technology

Offered by the Department of Polymer Science

Why Study Polymer Science?

Today polymers have become indispensable to mankind. Rubber and plastic have become integral parts of our daily lives. Their applications are everywhere, from a simple bouncing ball to rocket science, beautiful jewelries to artificial hearts. We use polymers from morning till night, e.g.: bed, slippers, toothbrush, cups, plates, mobile phones, cloths, car, tyres, computer to television. In general, 80% materials used daily by a regular human being is made out of polymers. Simply we are living in a world of polymers, so why not study them!

History of the M.Sc. program in Polymer Science and Technology at USJ

Polymer industry has become a major contributor towards our national economy since the early 1930's. By recognizing the national need of quality education in this field of science, a master's degree program in Polymer Science and Technology (PST) was introduced in 1970 by the Department of Chemistry with the aid of University of Aston, United Kingdom.

Course description

Our endeavor is to develop enlightened members of the polymer society. We pursue excellence in graduate education. Therefore, the program is designed to embrace topics from introductory level to high end applications of polymer science and technology. This 24-month M.Sc. program has been aimed for training much needed polymer

scientists, polymer technologists, quality control officers, and plant managers for booming Sri Lankan rubber and plastics industry. Hence, the course is suitable for the professional community who are engaged in PST and for graduates seeking entry to such organizations.

Careers

The program encompasses a broad spectrum of both theoretical and practical aspects in PST. By gaining good theoretical and practical insight students find it easy to establish themselves in the Sri Lankan polymer-based industries and academia. In addition, the course curriculum contains sufficient academic depth such that it will create a golden platform for students to proceed for higher degrees at national as well as international level.

For more information contact

Dr. Dhammika Weeratunga

Coordinator

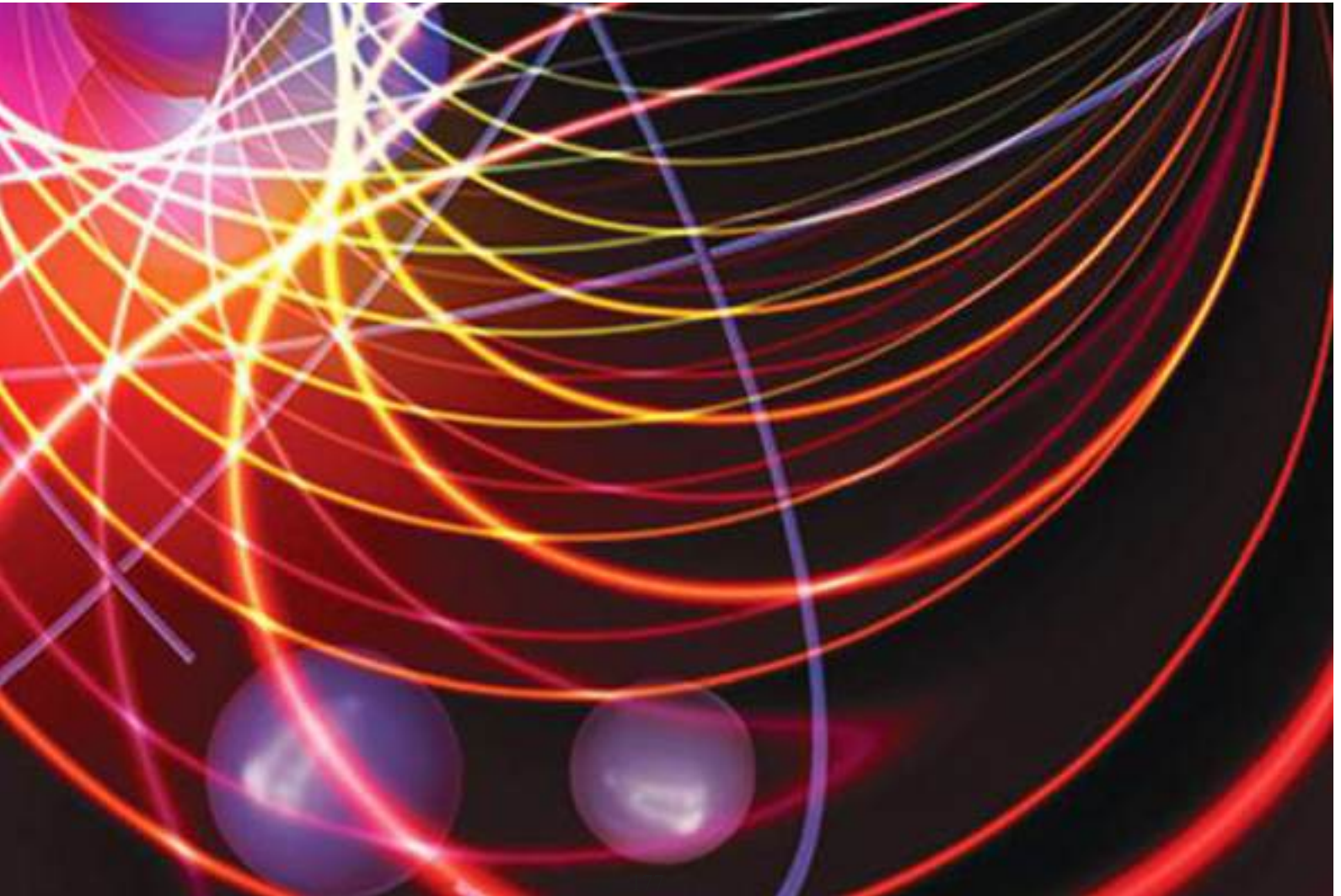
M.Sc. Degree/ Postgraduate Diploma in Polymer Science and Technology

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M.Sc. Degree in Physics Education

Offered by Department of Physics



M.Sc. Degree in Physics Education

Offered by the Department of Physics

Introduction

Physics plays an important role in all aspects of life and is undoubtedly the route to intellectual enlightenment in relation to the physical world. In addition to its well-known applications in numerous fields, physics provides a logical and conceptual framework useful in understanding natural phenomena and processes. Exposing students to physics at early stages therefore will help them to have a proper insight into the physical world. This however cannot be achieved without the active involvement of properly trained teachers who are well versed in principles of Physics as well as those of Education. Academic discipline that covers both these aspects is referred to as Physics education. The Department of Physics wishes to address this problem and proposes to commence a Postgraduate Diploma / M.Sc. programme in Physics Education under the Board of Study of Physical Science of the Faculty of Graduate Studies to fill this lacuna.

Objectives

Objectives of the proposed postgraduate programme are to produce secondary school Physics teachers and other educators in Physics who will be

1. Having a sound knowledge of physics based on concepts well relevant aspects of Education.
2. Competent enough to upgrade their knowledge in new areas that will be added to the Physics curriculum from time to time.
3. Having general idea of philosophical aspects of Physics and recent developments and trends in Physics.
4. Competent in using mathematics, computers and

in design low-cost equipment for Physics laboratory studies.

6. Sufficiently matured to identify and design projects that would develop skills and competencies in the student and supervise them.

7. Knowledgeable in modern evolution methods.

8. Capable of recognizing the usefulness and limitations of Physics and appreciate applicability in other disciplines and everyday life.

9. Capable of developing skills and attitudes in students that will be of long term value in an increasingly technological world rather than focusing on large quantities of factual material which will have only short-term relevance.

10. Capable of motivating students to use the logical thinking process acquired by studying Physics in addressing other issues.

Entry Qualification

Graduates of recognized universities who have offered Physics as a subject are eligible to apply. Preference will be given to those who are in the teaching profession or allied professions.

For more information Contact:

Dr. (Mrs.) S. Kandeepan

Coordinator

M.Sc.in Physics Education,

Phone: +94 112 758366

Email: ssivayini@sjp.ac.lk

M. Sc. Degree in Food Science and Technology

Offered by the Department of
Food Science and Technology



M. Sc. Degree in Food Science and Technology

Offered by the Department of Food Science and Technology

Why Study Food Science?

Food Science and Technology drawn on the spectrum of biological and physical sciences, applies them to one of the essentials of life which is none other than food. Food science, not only in the academic, but in the real-world sense, relies on mathematics, physics, biology, chemistry, biochemistry, microbiology, engineering, processing, nutrition, biotechnology, marketing and management. The purpose of the M.Sc. degree in Food Science and Technology is to provide the student with an advanced training in a specialization, with a particular emphasis on the acquisition of experience in the strategies and experimental methods of modern, original scientific research.

History of the M.Sc. program in Food Science and Technology at USJP

The national need for human resource development in the field of Food Science and Technology was recognized by USJP as far back as 1969. Based on this realization the first ever Post Graduate Diploma in Food Science and Technology in the country was introduced through the Department of Biological Sciences in 1968 due to the efforts of late professor A.C.J. Weerakoon, then professor of Biological Sciences. Subsequently in 1979 this programme was transferred to be managed by the Department of Chemistry. Later in the year 1992, the Postgraduate Diploma was upgraded to a Masters Degree in Food Science and Technology to be executed through the Department of Chemistry. On establishing the Department of Food

Science and Technology in the year 2005 this masters degree programme became to be managed by the Department of Food Science and Technology under the responsibility of the Faculty of Graduate Studies.

Course description

The course consists of course work, practical classes and a research component geared towards those already employed in the food sector as food technologists, research scientists, academics, trainers, food analysts, QC personnel, factory managers, medical/scientific persons in Nutrition, Food Policy and Food Security or for those wishing to enter a career in the food related sectors as above or enhance knowledge on scientific aspects of food resources and their management for better utilization in business opportunities. Hence the curriculum has been designed to cater to the needs of different personnel involved in the food industry.

Entry qualification

Suitable candidates must possess one of the following qualifications from a recognized university.

- 1.B.Sc. degree with Chemistry as a subject,
- 2.B.Sc. degree in Agriculture/ Chemical Engineering/ Nursing
- 3.Bachelor of Bio Systems Technology
- 4.M.B.B.S./ B.A.M.S / B.V.Sc./ Allied Health Sciences degree
- 5.Any other degree recognized by the University Grant Commission.

Recruitment procedure

Applicants are invited from the candidates who have satisfied the entry requirements. Due to large numbers of candidates applying for this course, suitable candidates are

interview where mostly the authenticity of certificates is examined. However, applications sponsored by state and private sector other organizations working in the target food-related areas would be given preference.

Careers

The program prepares those already employed in the food sector as food technologists, research scientists, academics, trainers, food analysts, QC personnel, factory managers, medical/scientific persons in nutrition, food policy and food security or for those wishing to enter a career in the food related sectors. The programme incorporates many different disciplines and through those, it prepares you for a career not only in the food industry, but in many areas that you probably wouldn't even think of.

For more information, please contact;

Dr. P. De A. Abeyesundara

Coordinator

M.Sc. in Food Science and Technology

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+94 11 2758468

Email: piumiabey@sjp.ac.lk

Website: <http://science.sjp.ac.lk/food/pg/>

M.Sc. Degree/ Postgraduate Diploma in Industrial Mathematics

Offered by the Department of Mathematics



M.Sc. Degree/Postgraduate Diploma in Industrial Mathematics

Offered by the Department of Mathematics

Introduction

Being the first Faculty of Applied Sciences of the country and realizing the potential of graduates with a strong mathematical background, we launched the first Postgraduate Diploma/M. Sc. Program in Industrial Mathematics in Sri Lanka, in 1996. By this program it is hoped to bring together the mathematically oriented personnel employed in various industries and the application orientated researchers within the university community, to provide means of further improving their effectiveness. It is a well- accepted fact that science and technology play a vital role in the process of development. We will concentrate on utilization of the resources of this country for the benefit of its own people.

The Growing Importance of Industrial Mathematics

Success in Industrial Mathematics is based on applying existing tools and computational techniques in addition to discovering new tools and techniques. The mathematical scientist in industry must have a broad background to be able to recognize when the model or solution procedure has already been investigated. Skills in formulation, modeling and implementation are critical in industry. Teamwork, communication skills and breadth of knowledge are also valued in industry.

Course Description

Total number of contact hours (lectures and practicals)

of the M.Sc. program exceeds 400 hours. Therefore, the M.Sc. program is categorized as a full-time program. Naturally, Industrial Mathematics may borrow from a variety of mathematical disciplines, such as Numerical Analysis, Computational Mathematics, Partial Differential Equations, Dynamical Systems, Control and Optimization theory, Probability and Statistics and Discrete Mathematics. The common feature running through this program is the goal of getting better understanding of industrial models and processes through mathematical ideas and computations.

Programme Eligibility

Candidates applying for the PG Diploma/ M.Sc. program in Industrial Mathematics should have a bachelor's degree with Mathematics as a component preferably B.Sc. (Special) Mathematics, Statistics, Computer Science, B.Sc. (Physical Science) or B.Sc. (Engineering) graduates.

For more information contact

Dr. M. T. M. Perera

Coordinator

PG Diploma/M.Sc. in Industrial Mathematics

Department of Mathematics

Phone: +94 11 2758389

Fax: +94 11 2803470

M.Sc. Degree/ Postgraduate Diploma in Fisheries and Aquatic Resource Management

**Offered by the Department
of Zoology**



M.Sc. Degree/ Postgraduate Diploma in Fisheries and Aquatic Resource Management

Offered by the Department of Zoology

Introduction

The postgraduate degree program is designed to meet the increasing need for highly skilled multidisciplinary decision makers, entrepreneurs, biologists or biologically literate mathematicians and statisticians in order to address the management challenges of the present day aquatic resources facing. It is of equal interest to recent graduates seeking employment prospects in aquatic resources management. This is the pioneer M.Sc. degree in the discipline in Sri Lanka which has produced hundreds of qualified resource managers working in key local and foreign institutes.

Course description

The duration for the M.Sc. Degree is two years whereas the duration for the Post Graduate Diploma is one year.

Entry qualifications

First degree in Biology, Veterinary Science, Chemistry, Physical Sciences, Geology, Oceanography, Environment Science, Natural Resources, Agriculture Any other degree with 3 years of experience in fisheries or aquatic resources sector. Any other qualifications equivalent to a degree recognized by the University Grants Commission with at least 5 years of experience in the field of fisheries and aquatic resources.

For more information Contact:

Dr. Indunil Senanayake

Coordinator

M.Sc. Degree/ P.G. Diploma in Fisheries and Aquatic Resources Management

Phone: +94 112 804515, +94 112 758439

E-mail: indunil@sci.sjp.ac.lk

M. Sc. Degree/ Postgraduate Diploma in Computer Science

**Offered by the Department
of Computer Science**



M.Sc. Degree / Postgraduate Diploma in Computer Science

Offered by the Department of Computer Science

Introduction

This program has been designed for those who are interested in pursuing higher studies in the field of Computer Science. This is offered with four exit points, including the option to leave with a Postgraduate Diploma for those who choose to exit early. The curriculum of this program is designed to provide students with a good grasp of core contents of Computer Science which any professional in the subject is expected to know, to foster logical and analytical thought, independent study, self-motivation and communication skills, to make aware of research results and latest trends in the key areas of the subject, to provide opportunities to gain practical experience of computing, using modern hardware and software, in order to provide motivation for and deeper understanding of material taught in formal lectures, to produce graduates with sound knowledge in both theory and practice in Computer Science, including current emerging technologies and experimental learning, to prepare students to contribute to the computing profession upon graduation and to provide the necessary background required to read for a Ph.D. in Computer Science.

Eligibility

1. Bachelor's degree from a recognized university or any other equivalent qualification in the field of Computer Science or ICT that would be acceptable to the Faculty of Graduate Studies and the senate of the university.
2. Candidates must be fluent in English.

Target group

- Individuals seeking academic qualifications in Computer Science.
- Those planning to start a career in computing or already employed in the field.
- Educators teaching Computer Science or ICT in universities, schools or other educational institutions.
- Individuals aiming to migrate for job opportunities in the computing field.
- Those intending to pursue higher education abroad in Computer Science or related disciplines.

For more information Contact

Dr. Surani Tissera

Coordinator

M.Sc. Programme in Computer Science

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MSC in Data Science and AI

Offered collaboratively by the Department of Computer Science and Statistics

Introduction

The MSc in Data Science and Artificial Intelligence (DS & AI) at the University of Sri Jayewardenepura is designed to address Sri Lanka's growing need for skilled professionals in data-driven technologies. Developed in collaboration with the Erasmus+ DS and AI consortium—a network of 15 leading European and Asian institutions—the programme delivers a European-standard curriculum tailored to regional needs. It equips graduates with advanced knowledge, technical expertise, and research skills to innovate, apply, and lead in the fields of Data Science and Artificial Intelligence, enabling them to contribute to both national development and global technology advancement.

Eligibility

1. Bachelor's Degree including 30 credits in Computer Science/ Statistics / Mathematics or a related discipline from a university or an equivalent institution recognized by the University Grants Commission.

OR

A qualification of SLQF level 6 or above in the relevant areas of Computer Science/ Statistics/Mathematics or a related discipline from a university or an equivalent institution recognized by the University Grants Commission /University of Sri Jayewardenepura.

Target Group

- Those who need academic qualifications in Computer Science/ Statistics/Mathematics.
- Those who are planning to start a career or already employed as a Data Scientist.

For more information Contact

Dr. Anuradha Ariyaratne

Coordinator

MSc in Data Science and Artificial Intelligence

Email: mkanuradha@sjp.ac.lk

M.Sc. Degree/ Postgraduate Diploma in Forestry and Environmental Science

**Offered by the Department of
Forestry and Environmental Science**



M.Sc. Degree/ Postgraduate Diploma in Forestry and Environmental Science

Offered by the Department of Forestry and Environmental Science

Introduction

With the concept of “sustainability” percolating into virtually all key sectors of the economy, applied knowledge in environment, natural resources and their management has become a skill of demanded in the modern competitive career market. The MSc./Post Graduate Diploma in Forestry and Environmental Management offered through the Department of Forestry and Environmental Science is designed to equip you with the necessary knowledge and skills to take up diverse challenges in natural resource management.

Be a part of the tradition...

Postgraduate education in Forestry and Environmental Sciences at the Department of Forestry and Environmental Science University of Sri Jayewardenepura has a history of more than 30 years. Since 1983, we have produced over 500 professionals with master’s qualifications, who are currently holding top managerial and executive positions in various forestry and environment related institutions, and ably contributing to the management of country’s natural resources.

Course description

M.Sc. in Forestry and Environmental Management is a full-time two-year course whereas the Post Graduate Diploma is a one-year course. The course consists of core courses, assignments, and a research project. The coursework component of both M.Sc. and Post Graduate Diploma programs consists of an integrated series of lectures selected from 4 taught modules.

During the first year, both M.Sc. and Post Graduate Diploma students follow a common program that provides a comprehensive background. During the second year, M.Sc. candidates concentrate more on applied aspects as well as on the research project.

Entry requirements

B.Sc. Degree in Biological or Physical Science, Forestry and Environmental Science, Geography, Geology, Agriculture, Civil or Chemical Engineering or a Four year Degree in Management, Social Science, Economics, with at least 5 years of experience in a relevant field or Any other special qualification equivalent to a degree recognized by the University Grants Commission and considered appropriate by the University Senate, with at least 7 years of experience in the field.

Careers

The course is designed to train professionals to undertake tasks in forest and wildlife management, water and other natural resource management, environmental pollution control and use of special tools such as environmental impact assessment, cost benefit analysis, GIS and remote sensing applications in environmental management. As such, this program will open up the pathway to diverse and rewarding careers in government ministries, non-governmental organizations, environmental and business consultancies, public sector organizations, and manufacturing and service industries in the private sector.

For more information contact:

Dr. G. G. T. Chandrathilake
M.Sc./Postgraduate Diploma in Forestry and Environmental Management
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Web: <http://science.sjp.ac.lk/fes/courses/>

Postgraduate Programmes in Applied Statistics

Offered by the Department of Statistics



Postgraduate certificate/M.Sc. Degree in Applied Statistics

Offered by the Department of Statistics

Why Study Statistics?

Statistical thinking and methods are becoming more and more prevalent in an exceptionally wide range of areas. With this postgraduate qualification in Applied Statistics, students can advance their career in almost any field including education, science, technology, health care, government, or business. In Sri Lanka, qualified statisticians are employed by Central Bank of Sri Lanka, Department of Census and Statistics and Coconut/ Tea/Rubber institutes. The demand for trained statisticians continues to increase in the industry as well as it is becoming more dependent on predictive data and numerical reasoning.

History of the postgraduate programmes in Applied Statistics at USJ

The first ever self-financed postgraduate programme in Sri Lanka, namely the postgraduate Diploma in Statistics, was started in 1968 by the Department of Mathematics of the University of Sri Jayewardenepura. The Department of Statistics and Computer Science restructured and renamed that programme as the M.Sc. Degree/Postgraduate Diploma programme in Applied Statistics in 1997. In year 2016, the department restructured the postgraduate programme in Applied Statistics to cater for those who wish to obtain one of the following qualifications: Postgraduate Certificate (SLQF 7), Postgraduate Diploma (SLQF 8), Masters Degree (SLQF 9), M.Sc. Degree (SLQF 10).

Course Description

Postgraduate Certificate programme in Applied Statistics

has been specially designed to provide professionals from various fields with a basic knowledge in Applied Statistics. The duration of the Postgraduate Certificate programme is one year. The M.Sc. Degree programme in Applied Statistics has been designed to provide graduates from a related field with an opportunity to further develop their knowledge in Applied Statistics. The duration of the M.Sc. Degree Programme is two years. The M.Sc. programme also consists of two exit points at Postgraduate Diploma and master's degree levels.

Entry qualifications

The Postgraduate Certificate programme in Applied Statistics requires a bachelor's degree from any field of study from a university or an equivalent institution which is recognized by university Grants Commission/University of Sri Jayewardenepura. An adequate mathematical knowledge is recommended. The M.Sc. programme in Applied Statistics requires a bachelor's degree with 30 credits in statistics and/ or a related discipline from a university or an equivalent institution which is recognized by University Grants Commission/University of Sri Jayewardenepura.

For more information contact:

Dr. Niroschan Withanage
Coordinator - M.Sc. Degree in Applied Statistics
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Dr. K.M.P Perera
Coordinator - Postgraduate Certificate in Applied Statistics
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Department of Botany

The mission of the department is to foster, promote and excel in teaching, learning and research in Plant Biology, Microbiology and Plant Biotechnology. Apart from imparting knowledge and developing skills of students on the fundamentals of these areas, enhancement of the quality of graduates, quality of teaching and research, and expansion of services offered to industry and society at large are other objectives of the department.

Introduction:

Plants are the life-givers on earth. As primary producers, they are the first link of all food chains; produce oxygen that we breathe in; they give mankind everything from food, timber, medicine, spices, perfumes and oils to flowers. Can we ever think of an ecosystem without plants?

These are just some reasons why Botany holds a unique position among all sciences. The knowledge of a man will not be complete without the knowledge about trees. Botany enables one to learn about phenomena like the greenhouse effect, environmental pollution, and how to create an entire plant from a cell that is not even visible to the human eye.

Apart from all these, we, Sri Lankans are lucky enough not only to possess a rich biodiversity, but also to inherit an enchanting virgin rain Forest; the Sinharaja, which makes Botany a truly special field.

Degree programmes offered by the department:

The Department of Botany offers three different courses (Plant Biology, Plant Biotechnology and Microbiology), which are designed to provide students with solid preparation to develop a range of skills in above areas of plant sciences together with employability skills such as communication, critical and creative thinking, teamwork and decision making. The Department offers two postgraduate research degrees: M.Phil. and Ph.D. in a range of disciplines

including Biotechnology, Tissue culture, Microbiology, Molecular Biology, Genetics and Plant Anatomy. It has built up an excellent research culture by having many staff members who have received awards for their innovations.

Facilities in the Department

- **Molecular Biology Laboratory:**

A well-equipped Biotechnology Laboratory is available for teaching several course units in Plant Biotechnology and also for the use of research students.

- **Computer Laboratory:**

A computer laboratory with networking is available for teaching Biometrics, Bioinformatics, Molecular Modelling and Numerical Taxonomy.

- **Plant House:**

Three plant houses are available for maintaining live specimens needed for teaching Plant Diversity, Plant Taxonomy, Plant Virology, Plant Tissue Culture etc.

- **Tissue Culture Laboratory:**

A fully equipped Tissue Culture laboratory is available for teaching and research purposes.

- **Botanical Garden:**

In addition to Greenhouses a botanical garden is available (with a pond) for teaching and research (field experiments/field trials) purposes.

diversity of the country.

- **Research Laboratories:**

Research laboratories for Plant Tissue Culture, Molecular and Microbiology, Virology and Pathology are available with 24-hour access to research students under the supervision of senior academic member of the department.

- **Fungarium and Fungal Culture Collection**

Botany and Plant Biotechnology Society

Botany and Plant Biotechnology Society, which was formed in 2006, conducts various activities such as workshops, seminars, public lectures related to current topics in popular science.



For further advice and information please contact;

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Dr. I.U. Kariyawasam

B.Sc. (Hons,Botany,USJ), M.Sc.(Edinburgh,UK), Ph.D. (Edinburgh,UK)

Senior Lecturer and Head of the Department

Research interests: Plant taxonomy, Seaweed Biology/ Phycology, Marine, Cryptogamic Botany, Plant Molecular Systematics, Herbal Technology Bacteriology, Pharmacognosy

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Prof. W. T. P. S. K. Senarath

B.Sc. (Peradeniya), Ph.D. (Bangor,UK)

Senior Professor

Research interests: Plant cell and tissue culture, Secondary metabolites, Synthetic seed technology and Cryopreservation

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Prof. P. N. Dasanayaka

B.Sc. (USJ), Ph.D. (USJ)

Professor

Research interests: Molecular Biology, Conservation and utilization of Plant genetic resources, Genome Mapping

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Dr. (Mrs.) M. L. A. M. S. Munasingha

B.Sc. (Colombo), M.Phil. (Kelaniya), Ph.D. (Aberdeen, UK)

Senior Lecturer

Research interests: Pollen analysis of cereals, Morphology, Distribution and drought resistant characteristics of Sri Lankan rice landraces.

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Dr. (Mrs.) P .K. C. Buddhinie

B.Sc. (Colombo), M.Phil. (USJ), Ph.D. (USQ, Australia)

Senior Lecturer

Research interests: Post-harvest pathology with special interest on fungal and viral infections in fruits

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Dr. (Mrs.) Rinukshi Wimalasekra

B.Sc. (Peradeniya), M.Sc. (Hannover, Germany), Ph.D. (Hannover, Germany)

Senior Lecturer

Research interests: Molecular Plant Physiology, Signal Transduction

Email - rinukshi @sci.sjp.ac.lk



Dr. (Mrs.) Dimuthu S. Manamgoda

B.Sc. (Peradeniya), Ph.D. (Thailand)

Senior Lecturer

Research interests: Molecular physiology and systematics, Fungal Diversity, Cereal Pathogens

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Dr. (Mrs.) G.D. Sinniah
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Senior Lecturer

Research interests: Plant pathology, Host-microbe interaction, Sustainable and precision plant protection, Pesticide residue management

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Dr. (Mrs.) K.N. Samarasekera
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Lecturer

Research interests: Environmental Microbiology, Pharmaceutical Microbiology, Natural Products Chemistry, Functional Food and Safety

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Lecturer

Research interests: Soil Microbiology, Horticulture and Organic Gardening, Plant Tissue Culture

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Lecturer (Probationary)

Research Interests: Antibiotic Resistance, Natural Products, Environmental Microbiology

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Supporting Staff

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Mrs. R.A.D.C. Priyadarshani	Mr. D.M. Abeyrathna	Miss. D. T. Gnanadasa
Miss S.H.S. Dilrukshi		



Department of Chemistry

Chemistry, which is the study of atoms and molecules from nano to macro levels, is often referred to as the central science, and is critical to a fundamental understanding of the world around us. Chemical concepts have traditionally been central to the canonical sciences such as biology, physics, and geology and continues its role in newer disciplines (i.e: materials science, forensics, astrobiology, biotechnology, bioinformatics, pharmacology, and atmospheric science).

Introduction

Chemistry is a rapidly growing discipline bringing new discoveries theories, and scientific applications that ultimately benefit society. It is necessary for practicing chemists to be proficient in a wide range of chemical disciplines in order to address the important problems that lie at the interface of chemistry and closely related disciplines.

The Department of Chemistry at the University of Sri Jayewardenepura offers courses that incorporate the most recent advances in the discipline and provide our students with a strong foundation in the fundamentals of Chemistry and a choice of more specialized optional courses that cover a wide range of topics to suit their future goals. Academic programs in Chemistry are designed to meet the needs of the country and prepare students to seek employment with confidence. The B.Sc. Honours in Chemistry degree program offered by the Department of Chemistry provides students an in-depth knowledge in the sub-disciplines of Chemistry with a strong emphasis on fundamentals of Chemistry. The high level of standards in the Honours degree programme has resulted in postgraduate opportunities for the graduates to study in leading universities around the world.

The Honours degree in Industrial Chemistry is another program offered by the Department of Chemistry. This program aims to strengthen the knowledge and skills of students who wish to become industrial

chemists by offering the fundamentals of Chemistry required for industrial research and development. Industrial Chemistry is the branch of Chemistry that deals with the development, optimization and monitoring of various chemical processes towards the transformation of raw materials into useful commercial products that are of beneficial to society.

The department of Chemistry has a highly skilled academic staff, 20 PhDs and offers an excellent research environment that includes research laboratories and a fully staffed instrumentation facility with state-of-the-art equipment including Atomic Absorption Spectrophotometer, Fluorescence Spectrophotometer, Gas Chromatography Mass Spectrometry, Luminescence Spectrometer, Near IR Analysis.

The vision of the department is to contribute to national development, scientific advancement and professional development by providing up to date training and opportunities to students to become efficient and successful professionals.

Degree programmes offered by the department

B.Sc. Honors degree with chemistry as a subject
B.Sc. Honors degree in chemistry
B.Sc. Honors degree in Industrial Chemistry

Postgraduate Courses

The department has built a long tradition of excellence in research and postgraduate training. It offers

research degrees (Ph.D., M.Phil.) and the following MSc. Programmes by coursework.

M.Sc. Degree/Postgraduate Diploma in Industrial Analytical Chemistry.

M.Sc. Degree/Master/Postgraduate Diploma in Industrial Organic Chemistry.

The Chemical Society

The Chemical society of University of Sri Jayewardenepura is one of the most active student societies in the university. Some of the activities are publication of a magazine (CRUCIBLE), organizing guest lectures, Annual Award of the GCN Jayasuriya Gold Medal at the convocation, Annual Chemistry staff vs students cricket match, annual outing, raising money for book/scholarship funds.



For further advice and information, please contact;

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Prof. N. T. Perera

B.Sc. (Colombo), Ph.D. (Louisiana State University, USA)

Professor/Head of the Department

Research interests: Synthesis and spectroscopic characterization of inorganic complexes of biomedical relevance; biological cell imaging of rhenium complexes.

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Prof. P. M. Jayaweera

B.Sc. (USJ), Ph.D. (Belfast), M.I.Chem.C.

Senior Professor

Research interests: Photochemistry and photophysics of labile metal complexes, Excited State studies of complexes and Spectroscopic studies of metal colloids, Sols and MELLFS, Reaction Kinetics, Surface Science of Nano Materials. Dye sensitized Nano-porous photovoltaic devices.

Email - pradeep@sjp.ac.lk



Prof. S. S. L. W. Liyanage

B.Sc. (USJ), Ph.D. (Cardiff Wales), M.I.Chem.C., MRSC, FPRISL.

Senior Professor

Research interests: Synthesis of triphosphamacrocycles, Improvement of quality of natural rubber latex, Study on degradation patterns of polymer-based products, effects on nano-scale additives in Rubber compounding.

Email - suda@sjp.ac.lk



Prof. B. A. Perera

B.Sc. (Colombo), M.Sc., Ph.D. (Wichita State University, USA)

Professor

Research interests: Comparison of migration behaviour of contaminants from plastic bottles to food. Cleavage of Bisnitrophenylphosphate using peptides

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Prof. C. Padumadasa

B.Sc. (Colombo), Ph.D. (University of Oxford, UK)

Professor

Research interests: Chemistry and biological activity studies of phytochemicals, characterization of heterocyclic compounds with pharmaceutical potential.

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Prof. C. D. Jayaweera

B.Sc. (USJ), Ph.D. (Belfast), M.I.Chem.C.

Professor

Research interests: Trace metal analysis, Applications of chemical kinetics in Analytical Chemistry, Removal of hazardous dyes and metals in wastewater from low-cost materials, Analysis, value addition to naturally available plants and seeds, Safe aqua food.

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Prof. M. A. B. Prashantha

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Professor

Research interests: Synthesis of alkyd resins using locally available fatty oil and pyrolysis of locally available fatty oil, modeling the degradation of plastics.

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Prof. Pahan Godakumbura

B.Sc. (USJ), Ph.D. (Wayne State University, USA)

Professor

Research interest: Sensor development to detect small molecules/heavy metals biological systems by coupling with protein conformational change and nanoparticles. Identification of heavy metal and other toxic chemical contamination and accumulation in water, sediments of food and their analysis.

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Prof. Imalka Munaweera

B.Sc. (Peradeniya), M.Phil. (Moratuwa), Ph.D. (Texas, USA)

Professor

Research Interests: Nanotechnology for drug delivery/pharmaceutical agricultural applications and water purification applications; Development nanomaterials from natural resources for various industrial applications

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Prof. Laksiri Weerasinghe

B.Sc. (Colombo), Ph.D. (Washington State University, USA)

Professor

Research Interests: Total synthesis, Development of new synthetic methodologies, Structun based drug design and synthesis, Bioactive peptide synthesis, Controlled and targeted dr delivery using nano-carriers, Carbocatalysis of graphene and graphene analogs.

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Research interests: Material Science & Nano Chemistry.

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Dr. Ranga S. Jayakody

B.Sc. (Hon. Carlton University, Canada), M.Sc. (UCT), Ph.D. (UCT)

Senior Lecturer

Research interest: Computer Aided Drug Design (CADD) In silico investigation of potential biological targets for small drug molecules isolated from therapeutic herbal preparations. Computational studies of their mode of binding, binding affinities, dynamics and enhancement of their drug potency by using CADD tools.

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Dr. Isurika Fernando

B.Sc. (USJ), Ph.D. (Western Michigan University, USA)

Senior Lecturer

Research interest: Synthesis of mechanically interlocked molecules chemistry, and their applications towards miniature electronic devices and controlled drug delivery Systems

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Dr. N. P. L. N. Palliyaguru

B.Sc. (USJ), Ph.D. (Temple University, USA)

Senior Lecturer

Research interests: Investigating the photochemistry of industrially and environmentally relevant molecules.

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Dr. Suneth Rajapaksha

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Senior Lecturer

Research interests: Molecular Dynamics simulations, cellular chemical signaling, 2D diffusion of particles, electrophysiology.

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Dr. Asitha T. Cooray

B.Sc. (USJ). Ph.D. (NMT, USA)

Senior Lecturer

Research interests: Analytical Chemistry, Aquatic Chemistry, Environmental Chemistry and impact of climate change on water resources.

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Dr. Upul Kumarasinghe

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Senior Lecturer

Research interests: Synthetic organic chemistry, Physical organic chemist Green organic synthesis, Synthesis of novel bioactive organic compounds

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Research interest: Theoretical and computational chemistry

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Dr. Chandima Narangoda

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Senior Lecturer

Research interest: Designing new synthetic strategies to access biologically relevant molecular motifs and 4-, 5-, 6-membered N-heterocycles, methodology development in organic synthesis, green chemistry in organic synthesis, synthesis of natural products-based hybrid-drug molecules, synthesis of bio-degradable nanomaterials in the use of environmental remediation, development of surface modified fillers for rubber and plastic based products.

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Dr. A. D. K. I. Weeraratne

B.Sc. (Honors) (USJP), Ph.D. (Wayne State University, USA)

Senior Lecturer

Research interest: Synthesis of redox-innocent metal complexes to develop corrosion inhibition coatings.

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Dr. Samindi Jayawickrama

B.Sc. (Honors) (USJP), Ph.D. (Kyushu University, Japan)

Senior Lecturer

Research interest: Fabrication, characterization, and optimization of catalyst layers for hydrogen fuel cell applications. Investigation of bio-derived polymer coatings for enhancing the surface properties of carbon supports in hydrogen fuel cell catalyst layers.

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Dr. Dumindu P. Siriwardena

B.Sc. (Honors) (USJP), Ph.D. (Queensland University of Technology, Australia)

Senior Lecturer

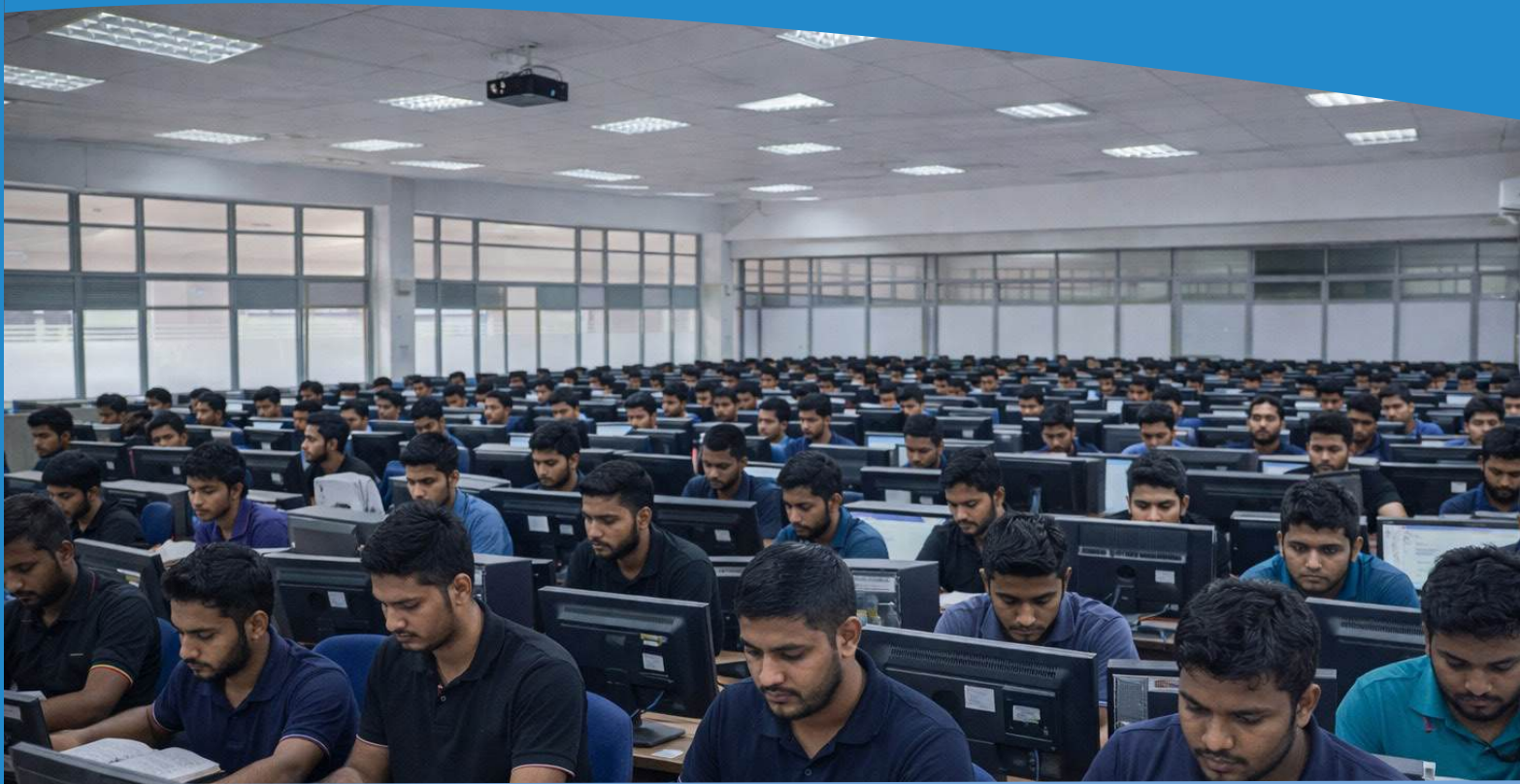
Research interest: Synthesis, characterisation, and optimisation of advanced materials for environmental and sustainable energy-related applications.

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Academic Staff

Supporting Staff

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Miss. D.P.S. Tharuka	Mr. J.A.R. Rukshan	Mr. D.P.A.S. Dharmasena
Mr. E.A. Nilaj	Mr. H.N.P. Fernando	Mr. J.M.U.P. Kumara
Mr. H.S.S. Fernando	Mr. D.M.S. Rupasinghe	Mr. H.M.D.P. Kumara
Mr. G.G.R. Rajapaksha	Mrs. N.T.M. De Silva	Miss. N.A.H. Silva



Department of Computer Science

The mission of the Department of Computer Science (DCS) is to produce high quality graduates and postgraduates in Computer Science and ICT who can contribute to the national development and to the development of the two disciplines.

Introduction

Computing is an essential part of 21st century life and is an exceptionally fast-moving subject that gives rise to a range of interesting and challenging problems. To solve these problems, skillfull, knowledgeable and versatile scientists who have a firm grasp of the fundamental concepts as well as in-depth knowledge of specific areas such as software engineering, visual computing, intelligent computing, distributed computing, mobile computing, networks, web services and the Internet are needed.

Computer Science and ICT at the University of Sri Jayewardenepura

The Department of Computer Science at the University of Sri Jayewardenepura is a large and growing department with exciting undergraduate teaching programs and postgraduate research programs. A degree from us can prepare you for some of the newest, most dynamic and exciting careers around today and the careers of tomorrow. The department offers Computer Science and ICT as a subject for physical science undergraduates. By choosing to study Computer Science/ ICT with us, you will be well on your way to becoming a leader in the field of computing.

Currently there are about 520 undergraduates in four batches following a general degree with Computer Science, general degree with ICT and a special degree in Computer Science. During the first two years, students are given a strong foundation in

core Computer Science concepts. In the third year, the focus shifts to hands-on learning and industry-aligned experiences, while the fourth year delves into advanced concepts in Computer Science.

Teaching methods involve a combination of lectures, tutorials, group work and practical work. The tutorials are provided in all years of the study programs. At the first year, most of the practical work is carried out in supervised laboratories with academic staff on hand to offer assistance. In the more senior years, most of the practical work is carried out independently with consulting assistance available at specified times. At the University of Sri Jayewardenepura, we are dedicated to uplift the education and development of leaders in the computing industry.

Degree programs offered by the department

- B.Sc. Honours Degree in Computer Science
- B.Sc. General Degree with Computer Science as a subject
- B.Sc. General Degree with ICT as a subject

Goals and learning outcomes of course units, course contents, methods of assessments, handouts, past question papers, details on recent research activities, postgraduate programs etc. are available at our website www.cs.sjp.ac.lk.

Postgraduate Studies

Computer Science is a dynamic and continually expanding subject, and DCS at SJP is committed to

excellence in its teaching and research. Our postgraduate studies will enable you to explore the full breadth and depth of this dynamic discipline.

The Department of Computer Science offers postgraduate programs to study in Computer Science leading to the:

- Postgraduate Certificate Computer Science (SLQAF 7)
- Postgraduate Diploma in Computer Science (SLQAF 8)
- Master in Computer Science (M.CS.) (SLQAF 9) (1 year)
- Master of Science in Computer Science (M.Sc. in CS(SLQAF 10) (2 years)
- Master in Data Science & Artificial Intelligence (SLQAF 9) (1 year)
- Master of Science in Data Science & Artificial Intelligence (SLQAF 10) (2 years)
- Master of Philosophy (M.Phil.) (SLQAF 11)
- Doctor of Philosophy (Ph.D.) (SLQAF 12)

Postgraduate Diploma / Certificate

The Postgraduate Diploma/Certificate in Computer Science is a professional qualification for graduates with a background in computing. It is particularly suitable if you are working in areas related to computing and wish to bring your expertise up to date with developments in this fast-changing field. As a research project is not compulsory, the postgraduate program will appeal to students wanting for postgraduate course-work qualifications.

Master of Science in Computer Science and Master of Science in Data Science & Artificial Intelligence

The M. Sc in Computer Science is designed to provide advanced theoretical foundations and practical expertise in modern computing. The programme covers key areas such as software engineering, Artificial Intelligence, cybersecurity, database systems, distributed computing, cloud technologies, and system architecture. Emphasis is placed on research, innovation, and critical problem-solving to address real-world technological challenges. Students undertake a supervised research thesis, enabling them to develop independent research capabilities and contribute to emerging knowledge in computing. This programme is ideal for graduates and industry professionals seeking career progression, academic advancement, or leadership roles in the IT sector, both locally and internationally.

The M.Sc in Data Science & Artificial Intelligence is a specialized postgraduate programme aimed at developing expertise in data analytics, machine learning, artificial intelligence, and intelligent system design. The curriculum integrates mathematical foundations, statistical modeling, and advanced computational techniques with hands-on applications in deep learning, big data technologies, and predictive analytics. Students engage in research-driven projects and a supervised thesis to solve complex, data-intensive problems across industries. The programme prepares graduates

to design AI-powered solutions, support data-driven decision-making, and contribute to innovation in research and industry. It is well suited for professionals and graduates aspiring to advanced careers in data science and AI at national and global levels.

Master of Philosophy (M.Phil.)

The Master of Philosophy in Computer Science is a research-based degree, in which students develop research skills that will be invaluable for further work in a research environments, and it aims to provide preparation appropriate for undertaking a Ph.D. program in computer science. Students are expected to make a significant contribution to knowledge in the field of study.

The program offers four exit points, allowing students to obtain a Postgraduate Certificate, a Postgraduate Diploma, a Master's Degree in Computer Science, or an M.Phil., depending on the level of study and research work completed. This flexible structure ensures that students can align their educational achievements with their personal and professional goals.

Doctor of Philosophy (Ph.D.)

The Ph.D. program in Computer Science is a research degree granted primarily on the presentation of a substantial research achievement which involves three to four years of original research work. A Ph.D.

is generally required by those people seeking careers in a university or research laboratory.

Diploma in Software Engineering

The Diploma in Software Engineering offered by the Department of Computer Science, University of Sri Jayewardenepura provides essential knowledge and practical skills in programming, software design, system analysis, and database management. The programme focuses on hands-on learning and real world applications, preparing school leavers, IT professionals, teachers, and beginners for careers in software development.

Eligibility:

1. Three (03) ordinary passes at the G.C.E. (A/L) examination in any stream with credit passes for Mathematics and English Language at the G.C.E. (O/L) examination.

OR

2. At least six (06) passes with three (03) credit passes, including Mathematics and English Language at the G.C.E. (O/L) examination, together with a minimum of two years of work experience in a software-related organization.

Computer Science Association

The Computer Science Association of the University of Sri Jayewardenepura (CSA of USJ) is the official governing body of all student-related activities of the Department of Computer Science, University of Sri Jayewardenepura, which is a prominent and growing department with exciting undergraduate and

postgraduate programs.

In 2024, the CSA organized a range of impactful activities, including Aurora, the Annual Conference on Computer Science for undergraduates and school students, and “Back to School” sessions to enhance students’ knowledge in computer science and ICT. The association also hosted guest lectures and workshops on trending topics, organized the Annual Inter-faculty Gaming Competition, and launched Odyssey 2024, an industry visit series providing undergraduates with insights into industry expectations.

Additionally, they conducted a webinar titled “Soar Higher: Excelling as an Undergraduate and Pursuing Higher Studies Abroad,” featuring distinguished alumni to guide students in their academic and professional pursuits.

Our achievements are remarkable:

Students who are following degree programs offered by the department have achieved remarkable success at national and international platforms. Notable accomplishments include Winners at Futurum 2.0 (2025), UNI-IN-Alliance Symposium (2025) organized by University of Sri Jayewardenepura, and the IASSL Best Research Awards (2024). The undergraduate team Innoventures secured the 1st Runner-up position at IdeaForge 2024, organized by the University of Kelaniya. The University of Sri Jayewardenepura also emerged Champion at

Thinkwave 4.0 and HackX 7.0, with the presentation of NeuroX (2023). These outstanding achievements were proudly recognized at the 48th Colors Awarding Ceremony

For more information

<http://www.cs.sjp.ac.lk/>

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Mr. Dilum Perera

B.Sc.(Hons)(Comp. Sci.)(USJ, Sri Lanka),
M.Phil. (Comp. Sci.)(USJ, Sri Lanka)

Senior Lecturer

Research Interests: Embedded Systems and IoT, Reconfigurable Computing
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Prof. R. G. N. Meegama

B.Sc.(Hons)(Comp. Sci.) (UOC, Sri Lanka), M.Sc. (Comp. Sci.)(AIT, Thailand), Ph.D. (Comp. Sci.)(NTU, Singapore)

Professor

Research of interest: Computer Graphics, Image Processing, Computer Networks.
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Prof. T.G.I. Fernando

B.Sc. (Hons)(Mathematics)(USJ, SL), M.Sc. (Industrial Mathematics)(USJ, SL)
M.Sc. (Computer Science)(AIT, Thailand), Ph.D. (Brunel, UK)

Professor in Computer Science

Research Interests: Machine Learning, Natural Language Processing, Evolutionary Computing, Swarm Intelligence
Email: tgi@sjp.ac.lk



Prof. P. Ravindra S. De Silva

B.Sc. (Comp. & Stat.)(Colombo), M.Sc. (Aizu, Japan), Ph.D.(Aizu, Japan)

Senior Lecturer

Research Interests: Social Robotics, Human-Robot Interactions, Interactive Media
Email - ravi@sjp.ac.lk



Mr. D. D. A. Gamini

B.Sc. Special (Math.)(USJ, SL), M.Sc. (Comp. Sc.)(AIT, Thailand)

Senior Lecturer

Research Interests : Artificial Intelligence and Theoretical Computer Science.

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Dr. Kasun Kosala Jinasena

B.Sc.(Hons)(Comp. Sci.)(USJ, Sri Lanka), BIT (Hons)(UOC, Sri Lanka), M.Sc. (Comp. Sci.)(UOC, Sri Lanka), Ph.D. (USJ, Sri Lanka)

Senior Lecturer

Research Interests: Computer Security, Data Science, HPC, Networking, Cloud, DevOps, and Mobile and Web Technologies

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Dr. A. M. R. R. Bandara

B.Sc.(Hons)(Comp. Sci.)(USJ, Sri Lanka), Ph.D. (UOM, Sri Lanka)

Senior Lecturer

Research Interests: Machine Vision, Signal Processin and Multimedia Technologies

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Dr. P. S. S. Tissera

B.Sc.(UOK, Sri Lanka), M.IT. (IT)(UOC, Sri Lanka), M.Eng. (ICE)(CUK, South Korea), PhD (ICE)(CUK, South Korea)

Senior Lecturer

Fields of Interest: Agent AI, AIoT, Nano Technology, Software Engineering, Data Science

Email: surani@sci.sjp.ac.lk



Dr. Anuradha Ariyaratne

B.Sc.(Hons)(Comp. Sci.)(USJ, SL), M.Sc.(Data Sci.)(TAU, Finland), Ph.D. (USJ, SL)

Senior Lecturer

Fields of Interest: Nature Inspired Computing, Meta-heuristic Optimization, Artificial Intelligence

Email: mkanuradha@sjp.ac.lk



Dr. U Dikwatta

B.Sc.(Hons)(Comp. Sci.)(USJ, Sri Lanka), M.Sc.(Comp. Sci.)(UOM, Sri Lanka), Ph.D.(Comp. Sci.)(USJ, Sri Lanka)

Senior Lecturer

Research Interest: Deep Learning, Natural Language Processing, Explainable AI, Multimodal Learning, Software Engineering

Email: umanda@sjp.ac.lk



Dr. WMKS Ilmini

B.Sc.(Hons)(Comp. Sci.)(USJ, Sri Lanka), Ph.D. (USJ, Sri Lanka)

Fields of Interest: Deep Learning, Explainable AI, Machine Vision, Computer Vision

Senior Lecturer

Email: wmkstilmini@sjp.ac.lk



Ms N Hirusha Wanigasingha

B.Sc.(Hons)(Computer Science)(USJ, Sri Lanka), M.Phil. (Comp. Sci.)(USJ, SL(Reading))

Lecturer (Probationary)

Fields of Interest: Machine Vision, Sports Analytics, DevOps, AI

Email: hirushanethni@sjp.ac.lk



Ms W G Lavanka Harshani

B.Sc.(Hons)(Computer Science)(USJ, Sri Lanka), M.Phil. (Comp. Sci.)(USJ, SL(Reading))

Lecturer (On contract)

Fields of Interest: Large Language Models (LLMs), Few-shot Learning, Human-in-the-loop AI, Responsible AI

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Ms. S.A.M.P. Udeshika

Lecturer (On Contract) in Computer Science
B.Sc. (Hons) (Computer Science), (USJ)

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Ms. M. C. Weerawardana

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Instructor
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Mr. U. C. Wickramarathne
Mr. E. M. R. S. Jayaweera
Ms. V. S. Athukorala

Supporting Staff

Mr. Dinidu Rukmal

Mr. Chamath Wijesekara

Ms. Charuni Liyanage

Mr. M. V. S. Perera

Mr. N. A. Ferdinands



Department of Food Science and Technology

The Department of Food Science and Technology offers B.Sc Honours degree programme in Food Science and Technology. The B.Sc. (FST) degree programme has a strong origin and background as the university started Food Science and Technology teaching through a Postgraduate Diploma programme in Food Science and Technology as early as 1969.

Strategic Intent of the Department of Food Science and Technology

To become a centre of excellence in higher learning in the arena of Food Science and Technology and Nutrition which disseminates knowledge in keeping with the developmental needs of the country and requirements of the region for related professionals.

Being closer to Colombo, the department has comfortably established collaborative links with major and small scale institutions of the food sector. Therefore, undergraduates have great opportunities to get themselves exposed to many food related industries for field trips, Industrial/Research/Field placements etc. In addition, the department is in position to invite experts working for the relevant private sector institutions in conducting lectures, seminars, workshops and practicals.

Program outcomes; B.Sc. Honours in Food Science and Technology:

1. Demonstrate competency in appropriate knowledge in the field of food[#].
2. Communicate efficiently and effectively in respective field of specialization using written, oral, visual and electronic forms.
3. Demonstrate as an empathetic and emotionally intelligent team player with leadership qualities.

4. Apply the skill-set* related to food[#] creatively to solve real-world problems by making context specific operational decisions while adapting to changing environments.
5. Create value through integration of innovation, and entrepreneurial & managerial proficiencies.
6. Implement subject-based solutions in keeping with ethical, societal, and environmental norms and need for sustainable development in the sphere of food[#].
7. Depict lifelong learning through scholarly advancement and/or strengthening professional skills and ensuring the betterment of the community.

* The term food means basic, advanced and applied subjects related to Food Science, Food Technology and Nutrition.

* A skill set is the combination of knowledge, experience, and abilities that the student develops through his studies and beyond

The B.Sc. degree in Food Science and Technology has been designed to enable the prospective FST graduates to be able to demonstrate excellence in all subject related practical skills and apply both theoretical knowledge and related practical skills acquired appropriately in different situations. It is

also expected that they will develop their technical competencies in order to be fitting to any challenging situation in the Food Industry. The abilities and skills expected to transfer to the prospective FST graduates through the degree programme include Generic Skills, Numeracy skills, Communication skills (with special emphasis on scientific communication), Information and communication technology (ICT) skills, Interpersonal/teamwork skills, Self management and professional development skills.

The FST degree programme offered by the Department of Food Science and Technology has been designed to help the student in achieving the following,

1. Develop the knowledge, skills and attitudes based on a broad and multi-disciplinary approaches in order to fulfill the current and emerging needs in local, regional and international food sectors.
2. Develop the knowledge, skills and attitudes through theoretical, laboratory and out-door/field practical components in experiencing the real world practices in the field to establish and manage socially acceptable, economically viable and environmentally friendly food industries.
3. Identify problems and issues related to the food industry and conduct independent research in order to find the most appropriate solutions.
4. Develop ICT skills

5. Develop interpersonal, teamwork and leadership skills.
6. Develop self management and professional development skills
7. Maintain an acceptable moral conduct

Association of Food Science and Technology (AFST)

The Association of Food Science and Technology (AFST) is made of a collection of enthusiastic, skilled and dynamic undergraduates who work hard every day for the progress of the field of Food Science and Technology with a high degree of professionalism and develop and fine tune their skills through their hard work. The AFST was established on the 11th of January 2007 and the membership of the association is available for any undergraduate who follows the degree of Food Science and Technology at University of Sri Jayewardenepura.

Members of AFST come across many opportunities every year to increase their subject knowledge, develop contacts and gather more information about the vastly expanding and improving industry. One such event is Pro Food Pro Pack Exhibition which is the largest International Food Exhibition in Sri Lanka where our university has been able to win more than 8 awards throughout these years competing with other Universities and Industries. In addition, there are many events organized by the AFST, such as fun match and annual trip, awareness programmes on

World Food Day, Vidujaya Exhibition in 2009, Food Nights, Sankalpana in 2011, Arunella in 2012 and have also taken part in massive events like Dayata Kirula 2014.

Web address <http://www.sjp.ac.lk/sites/foodscience/>

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Mr. G. A. S. Fernando	Mr. T. Ruwansiri	



Department of Forestry and Environmental Science

The Department offers multidisciplinary programs in Conservation, Management and Utilization of Forest and Other Natural Resources and Environmental Protection (Pollution Prevention and Waste Management).

Introduction

The Forestry education in the University of Sri Jayawardenapura has a history of more than 30 years. Department of Forestry and Environmental Science is the only one of its kind in Sri Lanka which offers both undergraduate and postgraduate courses in Environmental Management and Forestry. Especially through its postgraduate program, the department has been able to reach wide horizons in training professional in both government and non-government sectors who are capable of contributing effectively to the country's developmental process. About 1000 professionals have been trained up to 2023, many of whom are employed in forestry and environmental sectors.

Mission of the department

To assist in sustainable management of natural resources and environment through manpower and knowledge development.

Objective of the Course

To develop decision making knowledge and skills required to manage dores resources in natural and man-made environments.

Degree Programmes

The Department offers multidisciplinary programs in Conservation, Management and Utilization of Forest and Other Natural Resources and Environmental Protection (Pollution, Prevention and Waste Management).

Undergraduate Degrees

B.Sc. Degree Programme in Environmental Management and Forestry (3 years)

B.Sc. Honours Degree in Environmental Management and Forestry (4 years)

B.Sc. Honours degree in Applied Sciences (Environmental Management and Forestry) (4 Years)

Field/ Factory Assignment (Internship)

In the third year, students are placed in leading public and private sector institutes in the fields of forestry, agriculture, environmental, sustainability, wildlife, rural development and policy formulation for field/ factory assignments (internship). This is intended to provide students with an opportunity to acquire knowledge of a “real work” environment. This program has made our graduates more employable in the previous years.

Postgraduate Degrees

The Department offers the following programs at postgraduate level.

- M.Sc./Postgraduate Diploma in Forestry and Environmental Management
- M.Phil. and Ph.D. Degrees by research

M.Sc./Postgraduate Diploma in Forestry and Environmental Management

The overall objective of this course, which and been offered since 1983, is to develop decision making

knowledge and skills required to manage forests and other natural environmental resources and to prevent and control environmental pollution. The target groups for this programme are those who are already employed in forestry, environment and natural resource management sectors and others who wish to pursue careers in the above sectors.

M.Phil and Ph.D. Degrees by Research

The department enrolls students for M.Phil and Ph.D degrees by research in areas within the specialization and research interests of the staff.

Departmental Research

Research in the Department carried out by staff, special degree students and postgraduate students cover a wide range of topics relevant to Forestry and Environment Science and management. This includes research in forest management, silviculture, forest ecology, wood science and timber technology, agroforestry and social forestry, tree improvement and propagation, forest management, wildlife management, forest economics, pollution control, waste management etc.

Several collaborative research projects have been conducted with foreign universities such as University of Bangor, UK; Yale University, USA; Edith Cowan University, Australia, University of Calgary, Canada, other governmental agencies, industry, national and international NGOs with a view to provide and more

pragmatic and realistic approach in solving problems.

Facilities

Among the many facilities of the department, a fully equipped auditorium and lecture rooms with audio-visual facilities and a computer center can be highlighted. There are fully equipped laboratories, instrumental centers and greenhouses for practical and field work. The department manages 100 acres of Forest Reserve and a Field Research Centers at Yagirala, which offers opportunities to study and practice Forest Management, Biodiversity and Ecotourism. The department is fully facilitated with specialized centers that serve as valuable resources for sharing knowledge and facilitating research such as,

- Center for Sustainability
- Center for Forest and Environment
- Timber Process Innovation Center
- Forest Research and Conservation Education Center
- Mangrove Conservation Center
- Department Instrument Center

Centre for Forestry and Environment

The Centre for Forestry and Environment (CFE) was established in 2016 with the objective of supporting pioneering research in forestry and environment by the academic staff of the Department of Forestry and Environmental Science, in collaboration with researchers from other departments of the University of Sri Jayewardenepura and leading Research institutes in Sri Lanka and other countries.

The available at the Centre are also used to further train the students of the Department of Forestry and Environmental Science at B.Sc., M.Sc., M.Phil. and Ph.D. levels in conducting cutting-edge research.

The main objectives of the CFE are to conduct high quality research projects aimed at solving pressing issues in forestry and environment sectors in Sri Lanka and to contribute to the national development by finding appropriate solutions through applied research. While serving the needs of the nation, these researches are expected to reach global audiences by having them published in premier scientific journals. The uniqueness of this centre is its ability to bring together many researchers to form multi- disciplinary teams that can undertake tasks which may not be completed by one or two individuals. The wide coverage of the forestry and environment sectors, such collaborations are essential to achieve innovative results useful for the progress of the country.

Center for Sustainability

The Center for Sustainability (CFS) is a body for professional environmental services, research and extension attached to the Department of Forestry and Environmental Science. A variety of services including environmental consultancy and advisory services and short courses and training programs on environmental management and sustainability are offered especially for the corporate sector.

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Other Collaborations

The department maintains close collaborations with other institutions in forestry and environment. Every year opportunities have been provided for two Range Forest Officers of the department to follow the B.Sc. Degree programme with Environmental Management & Forestry as a subject.

Further Training/Workshops

Apart from the regular training programs conducted by the department, short-term training workshops are also being conducted targeting relevant government and non-government officials, personnel from the industry and others on a variety of subject areas with mutual interest to both parties.

Role of the Department in Natural Resource Management

The department also plays an important role in national development by its contribution to national and international activities. One such activity which has gained international recognition is the Annual

Forestry and Environment Symposium which is being held for the 29th consecutive time this year. The academic staff of the Department serves in national committees, conducts environmental assessments for national and international projects and provides advice to the government as well as private sectors in the fields of forestry and environment. The staff also liaise closely with forestry and environment related institutions and carries out research solely and in collaboration with other institutions in fields of great importance. The department is also heavily engaged in dissemination of knowledge among the general public and personnel in other sectors.

Career opportunities

With the environment becoming an essential component in decision making, there is a rising demand for competent graduates in environment related professions. The course in Environmental Management and Forestry will take you towards diverse and rewarding careers in government ministries, non-governmental organizations, environmental and business consultancies, public sector organizations, and manufacturing and service industries in the private sector.

Memberships and societies

1. Forestry and Environmental Science Society

Forestry and Environment Society is one of the leading student societies in the university. The society organizes both intra-curricular and extra-curricular activities such as field trips, training programs in

Yagirala Field Research Centre, workshops, lectures, film festivals and social service activities. The main objective of the society is to enhance different skills of members while nourishing them with current knowledge in the field.

2. International Forestry and Environment Symposium

Distinguished as the oldest and most renowned Forestry and Environment Symposium in South Asia, the International Forestry and Environment Symposium, organized by the Department of Forestry and Environmental Science is the premier event where researchers, academia, professionals, policymakers, and the industry meet to discuss and learn about the latest developments in forestry and environment sectors. The Honors Degree students of the Department of Forestry and Environment Science can also present their research findings at this event, which will enhance their confidence to engage with the scientific community.



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Mr. I.L.Ashoka Nishantha	Mr. Tharindu Weerasooriya	Ms. Nimeshi Dulakshika
Mr. Nishantha Gamage	Mr. E.W. Gettler	Mr. Dinusha Dharmarathna
Mr. Susantha Perera	Ms. Sanduni Hasara	Mr. Sachintha Peramunage



Department of Mathematics

Mathematics empowers individuals to contribute positively to society through logical thinking and problem-solving, rather than merely relying on rules and regulations

Mathematics is the “Queen of Sciences”.

Scientific and industrial progress in recent years have made Mathematics one of the most important subjects of our time. In modern times, being versed in the language of mathematics helps one to make progress in day-to-day life. More than its role as a mere language, Mathematics has now found an increasingly significant influence in many diverse fields, from management to medicine. An undergraduate degree in Mathematics will open the way to a future filled with wide opportunities for jobs and professions. Mathematics related professionals such as Actuaries, Scientists, Accountants, and Statisticians are quite high in demand worldwide.

Furthermore, Mathematics alone will enable a person to make a positive contribution to the society. Mathematics is, in addition to being the language of science in its own right, a way of logical thinking rather than rules and regulations.

Degree Programmes offered by the department

- BSc with Mathematics
- BSc with Mathematics and Pure Mathematics
- BSc Honours Degree in Mathematics
- BSc Honours Degree in Applied Mathematics
- Postgraduate Diploma/M.Sc. Programme in Industrial Mathematics

Postgraduate Diploma/M.Sc. Programme in Industrial Mathematics

Being the first Faculty of Applied Sciences of the country and realizing the potential of graduates with a strong mathematical background, we launched the first Postgraduate Diploma/M.Sc. programme in Industrial Mathematics in Sri Lanka, in 1996.

Computer Technologies and Facilities

Though the Department of Mathematics has only a handful of academics, we are fortunate to have a sound blend of both ‘Pure’ and ‘Applied’ Mathematicians. As a result, the programmes and courses of the Department of Mathematics are designed to cater to students, who are either strong in abstract thinking or more applied oriented. As there is a high demand for Computational Mathematics, the department has introduced a practical component each to most of the mathematics course units in the department with the students having access to a well-equipped computer laboratory.

There is a good collection of books on Mathematics in the main library, covering almost all sections of Mathematics. We strongly advise the students to refer these books whenever possible. Mathematics is an exciting field, which is not difficult to grasp, contrary to the view of the general public, and the lecturers in the department of Mathematics are willing, to help the students with their academic work and to guide them on other matters.

Career Opportunities in Mathematics

What can you do with a degree in Mathematics?

Almost anything! As our world and economy becomes more and more science and technology-oriented, there is an increasing demand for people with sharp critical thinking skills in Mathematics. The Mathematics Department offers both undergraduate and postgraduate programmes at the master's degree level that prepare students for a wide range of careers, including employment in government and private sectors, banks, industry, teaching careers and preparation for postgraduate studies.

The Mathematics Society

It was on March 31, 2011; that the Mathematics Society was founded with the vision of fostering an awareness and Appreciation of mathematics and its connection to other disciplines and everyday life. The society representing all the mathematics students in the university, not only provides an opportunity for students to meet the lecturers and seniors to share their experiences in research and leadership qualities, but also organizes seminars for school children (especially Combined Mathematics seminars for A/L students) under the guidance of lecturers in the Department of Mathematics. All the efforts of the society directed in promoting mathematical understanding and skills, are manifested via its official web page.

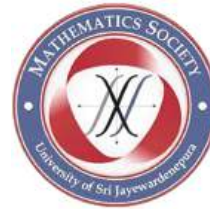
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Mrs. K. A. A. Jayathissa	Instructor (Computer Technology)
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Mr. S. K. Guruge	Technical Officer
Mr. W. G. D. D. Ariyadasa	Lab Attendant



Department of Physics

“Physics is a creative activity of the human mind. Studying Physics provides you with a delightful and rewarding experience that will make you suitable for any future career.”

Introduction

Physics is a dynamic discipline where new knowledge, applications and technologies are born every day. A degree in physics offers you the ability to stay ahead in the competitive world by offering you not only the subject knowledge but also the right tools to be creative and to think differently. It equips you with the analytical and personal skills that are essential for personal development, for whatever path you decide to take in the future.

The Department of Physics at the University of Sri Jayawardenepura offers courses that integrate both the foundational knowledge and the recent advances of the field, thereby ensuring students gain knowledge across the breadth of the discipline. Additionally, optional courses are offered in specialized subject areas that enable students to follow industrial aspects of physics. Not limited to the technical know-how of the field, students are also offered optional courses to help develop their soft skills such as presentation and communicational skills.

Hands-on learning is offered through the various laboratories at the department. These include an Elementary Laboratory, Optics Laboratory, Electronic Laboratory, Applied Physics Laboratory, Embedded Systems and Robotics Laboratory, Computational Laboratory and Advanced Physics Laboratory. The department also has a workshop equipped with machinery and instruments.

Degrees Offered by the Department.

B.Sc. (General) Degree program with Physics as a subject

B.Sc. (General) Degree program with Electronics and Embedded Systems as a subject

B.Sc. (Honours) Degree in Physics

Special Degree students are provided with the opportunity to apply their knowledge and gain industrial experience through an industrial placement include, ITI, Atomic Energy Authority, ACCIMT, SLSI, Petroleum Resources Development Agency and CEA.

Postgraduate Level

The Department accommodates M.Phil. and Ph.D. students. Present Postgraduate projects are centered on Geophysics, Digital Electronics and Mathematical Computational Physics, and Material Physics.

The Physics Society

The sharing of knowledge is not limited to the course material. The physics society is an active organization which organizes exhibitions, film festivals and popular talks that make the student life at the Department more vibrant and exciting. The Department also organizes seminars and



informal discussions on the topics such as Science, Religion, Literature and Philosophy.

The Electronics and Embedded Systems Society



This Society of Electronics and Embedded Systems aims to bring together students and professionals interested in the fields of electronics and embedded systems, providing a platform for knowledge sharing, collaboration, and innovation. By fostering a community of like-minded individuals, the society seeks to promote the growth and development of these fields, encouraging members to engage in research, projects, and skill-building activities. The vision for the society is to inspire the next generation of engineers and contribute to advancements in technology.

For further information, please contact;
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Department of Polymer Science

With the rapid development of science and technology, the study and invention of more advanced materials have reached a new level. Polymer Science is a field that deals with both natural and synthetic materials like rubbers, plastics and fibers that provide the basis of many materials which have predominantly replaced conventional materials like steel and glass. It, then branches into several disciplines such as polymer physics, rheology, and synthesis.

Introduction

Department of Polymer Science offers B.Sc. Honours Degree in Polymer Science and Industrial Management, B.Sc. Honours Degree in Polymer Science, B.Sc. Honours Degree in Applied Science (Polymer Science and Technology) and a 3 year B.Sc. Degree with Polymer Science and Technology (PST) as a subject. It is focused to produce high quality graduates having sound knowledge in polymer science and polymer technology with preliminary exposure in industrial atmospheres to endow polymer scientists, polymer chemists and polymer technologists for working with new challenges. M.Sc. in polymer science and technology program introduced in mid 1970s with the help of University of Aston, is a well-recognized postgraduate program serving the polymer industry of the country.

The field of polymer science has exponentially expanded in a global context and global production of polymers have exceeded the production volume of steel. Polymers have become a good replacement for the applications of steel, glass and ceramic because of its light weight, energy saving production processes and acceptable chemo mechanical properties. Engineering polymers, commodity polymers, paints and adhesives and elastomers are some examples of the application-based categories of polymers.

According to the Flory (Nobel price, 1974), modern polymer science is a blend of organic chemistry, some aspects of physical chemistry, material physics, statistical mathematics, and some aspects of inorganic chemistry. Polymer technology is a combination of polymer science, some aspects of chemical engineering, rheology and reactor designing

for polymerization, some mechanical aspects and mould designing. Its interdisciplinary nature makes it a fascinating and challengeable subject.

Degree programs offered by the department

B.Sc. Degree with Polymer Science and Technology as a subject (SLQF 5)
B.Sc. Honours Degree in Polymer Science (SLQF 6)
B.Sc. Honours Degree in Applied Science (PST) (SLQF 6)
B.Sc. Honours Degree in Polymer Science and Industrial Management (SLQF 6)

Postgraduate Courses

Department of Polymer Science offers M.Sc. (SLQF 10)/ Postgraduate diploma in Polymer Science & Technology (SLQF 8)
M.Phil. (SLQF 11)
Ph.D. (SLQF 12)

Facilities

The Department of Polymer Science provides laboratory facilities, including instrumentation for rubber compounding, processing, testing, and plastic processing and testing. The available instruments include an internal mixer, two-roll mill, universal testing machine, compression mold, and a moving die rheometer. These resources are available to the academic and industrial research community, both within and outside of USJP, and are overseen by a dedicated team of professional academic staff.

Career opportunities

This degree is designed for students to obtain an in-depth knowledge in polymer science and to thereby produce professionals for the polymer industry and academia. As there are variety of polymer related industries including plastics, rubber, textile, paint etc. in Sri Lanka, the students who graduate with a degree in polymer science have a high opportunity to enter into the employment market and to contribute to the country's economy through research and development in the field of polymer science and by sharing their knowledge with the industries and helping these industries to prosper. Also, the program would open up great opportunities for student to follow postgraduate degrees through research in recognized universities and research institutes in the world.

Society of Polymer Science

The Society of Polymer Science which was established in 2021 is one of the most active student societies in the university. The purpose of the society is to promote interest in Polymer Science among university students and schools and to provide the opportunity for experience and enrichment in the field.

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Department of Sports Science

The Department of Sports Science offers a comprehensive approach to understanding and enhancing sports performance through a blend of scientific principles and managerial practices. It integrates disciplines such as physiology, biomechanics, psychology, and nutrition with sports management, preparing students for diverse careers in sports coaching, fitness management, performance analysis, and sports management

Introduction

The Department of Sports Science was established in December 2017. The Department offers the B.Sc. Honours Degree in Sports Science and Management.

The Sports Science and Management Degree Programme is an interdisciplinary programme which focuses on the areas of anatomy and physiology, psychology, sociology, biomechanics sports technology, forensic science, sports medicine and sports management. One strength of the Sports Science and Management Degree Programme offered by USJ is the strong knowledge base required to cover all areas of the field of Sports Science, that can offer a comprehensive Degree Programme. At present, the Degree Programme is offered in collaboration with the Faculty of Management Studies and Commerce, Faculty of Medical Sciences and Gampaha Wickramarachchi University of Indigenous Medicine.

With national and international collaborations, the Department intends to enhance the depth and spectrum of Sports Science and Management education in Sri Lanka.

Advanced Diploma in Sports Science and Management

The Advanced Diploma in Sports Science and Management is designed to meet the increasing demand for sports practitioners who are striving to excel in their theoretical and practical knowledge in sports, sports science, and sports management. This two-year advanced diploma programme is approved

by the Ministry of Education for school-level coaches. The entry qualifications are stipulated to align with the requirements of the Sri Lanka Qualification Framework. Students enrolled in the programme have the option to follow it in either Sinhala or English languages.

Facilities at the department

The Department of Sports Science is equipped with cutting-edge facilities designed to enhance the student learning experience and support advanced research. Our smart classroom features a smart board and interactive technology that fosters dynamic, immersive learning environments, enabling students to engage with the latest sports science concepts in real time. Additionally, the department features an activity room fully equipped with the latest sports equipment, ensuring all necessary tools are available for effective practical sessions. This space is not only dedicated to hands-on learning but also serves as a hub for cutting-edge sports testing and research. Outfitted with advanced testing equipment, it supports innovative research initiatives and comprehensive studies, empowering students and researchers to explore new frontiers in sports science with precision and excellence.

Career Opportunities

Graduates in this field may pursue careers as performance analysts, sports coaches, sports therapists, fitness center managers, sports administrators, strength and conditioning specialists, entrepreneurs in sports-related businesses, or physical education teachers/instructors. Additionally, they may be well-prepared to undertake further specialized training to become accredited physiotherapists, exercise physiologists, clinical exercise consultants, or dietitians/nutritionists.

Team of Sports Science: The Students Association of Department of Sports Science



The Team of Sports Science (TOSS), the Students Association of the Department of Sports, was established in 2018 under the patronage of the academic staff of the Department. TOSS aims to enhance the potential of its members integrally through its diverse activities. In collaboration with a wide network of public and corporate sector organizations, TOSS periodically organizes various sports skills and facility development programmes, focusing on different stakeholders such as undergraduates, the university community, school-

level students, and the general public.

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Department of Statistics

Our aim of training undergraduates in Statistics is to provide a broad knowledge in the subject Statistics; technical skills and the ability for critical statistical reasoning; opportunities to participate in statistical research; preparation for higher studies and for professional careers.

Introduction

The Department of Statistics offers Statistics as a subject for B.Sc. Degree and also offers a B.Sc. Honours Degree in Statistics. Physical science undergraduates can follow Statistics for their three year general degree depending on the subject combination they are placed. Students are selected for subject combinations on the basis of their request and A/L z-scores.

The mission of the Department of Statistics is to produce high quality graduates and postgraduates in Statistics who can contribute to the national development and to the development of the discipline.

Programme Details

Aims and learning outcomes of course units, course contents, methods of assessment, handouts, past question papers, details on recent research activities and postgraduate programs etc. are available at our website <http://science.sjp.ac.lk/sta/>

Statistics for reliable decision making under uncertainty

Statistics is the scientific application of mathematical principles for collection, analysis, interpretation and presentation of any kind of data under uncertainty. Statisticians begin to contribute to scientific inquiry by applying their mathematical and statistical knowledge through the design of surveys and experiments and proceed until the final presentation of results. Statistics is an essential tool in any field where decisions are made based on data. Statisticians apply

their knowledge of statistical methods to a variety of subject areas such as biology, economics, education, engineering, medicine, public health, psychology, marketing, sports etc.

History of Learning Statistics in the University of Sri Jayewardenepura

Teaching Statistics in the university dates back to 1968. Until 1998, Statistics was offered by the Department of Mathematics. Later, the Department of Statistics and Computer Science was established in 1998. The present Department of Statistics was formed in early 2014. The department offers Statistics as a subject for the General Degree Program as well as the Honours Degree Program in Statistics. In addition, the department conducts two postgraduate programs in Applied Statistics, namely Postgraduate Certificate in Applied Statistics and M.Sc. program in Applied Statistics. This is an evolution of the first ever self-financed post graduate program in Sri Lanka, the Postgraduate Diploma in Statistics, which was established in 1968.

At present, about 470 undergraduates are studying Statistics as a subject. In addition to the essential theoretical knowledge, statistics undergraduates are given ample opportunities to collect and analyze data, and prepare statistical reports related to real world problems.

They are also given sufficient exposure to statistical software in analyzing data. Diversified learning

activities and assessment methods such as individual and group assignment, presentations, seminars, individual and group projects are used to encourage active learning. This diversification helps to improve soft skills such as communication skills and teamwork. Independent learning is encouraged at all levels.

Candidates for the Honours Degree in Statistics are selected at the beginning of the third year, based on the performance in the first two years. Statistics Honours Degree students are required to undertake a comprehensive guided project. In addition,, they are exposed to the real world applications by means of a four-month, full-time, industrial training. They also gain vital experience in solving real world problems through the Statistical Consultancy unit in the department which offers its services to both on campus and off campus researchers.

The Department is dedicated to providing a conducive learning environment to produce statisticians who are capable of solving practical problems and contribute to the national development using their skills.

Statistic Society

The Statistics Society of the Department of Statistics was formed in the year 2009 with the intention of promoting Statistics among the students of the Faculty of Applied Sciences. Over the past few years, the society has undertaken many



initiatives in order to enhance the interest towards Statistics. Each year, the Statistics Society publishes a magazine, “STAT Plot”. STAT Plot allows our Statistics undergraduates to voice their thoughts about Statistics. This is the place where their thoughts about Statistics. This is the place where their creativity and divergent thinking take to the pinnacle. This is where their knowledge about Statistics is heard loud and clear. The society also annually organizes a “STAT Day” which brings together a variety of individuals including undergraduates, staff and industry professionals with a timely theme. The Annual “STAT Quiz”, held as a part of the “STAT Day”, is a synonym for the Clash of Statistics Geniuses. It is the perfect arena to show off their knowledge and skills, and a splendid opportunity to work as a team.

Knowing how and where your skills and knowledge can be best utilized would certainly be beneficial in the long run. What use of your knowledge can there be if you do not know how to give value for it? Therefore, the Statistics Society introduces career opportunities for undergraduates.

For further advice and information, please contact:

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Department of Zoology

The Department of Zoology offers three specialized undergraduate programs: Zoology, Aquatic Resources Management, and Biology.

The mission of the Department is to advance the fields of Zoology and Aquatic Sciences through exemplary teaching, research, and the practical application of knowledge.

History

The Department of Zoology has a distinguished history that is deeply intertwined with the evolution of the science education of the university. Its origins can be traced back to the time when Vidyodaya University was transformed into a modern secular university. Zoology was initiated as a distinct department at Vidyodaya University in 1962, along with the inception of science education. In 1966, the department was amalgamated with the Department of Botany to form a unified Department of Biology. After a period of amalgamation between 1966-1982, the Department of Zoology re-emerged as an independent entity. This move marked a pivotal moment, allowing for a dedicated curriculum and research focus in Zoology and parallel disciplines. A significant milestone in its growth was the conversion from the Faculty of Science to the Faculty of Applied Sciences in 1973. The Department of Zoology became a pillar of this new faculty, aligning its mission with applied aspects and addressing contemporary scientific challenges. It has since remained a core unit within the Faculty of Applied Sciences.

Present status

Under the Faculty of Applied Sciences, the department flourished and vastly expanded its academic programs. At present, teaching in the Department of Zoology reflects a dynamic, multidisciplinary, and application-oriented approach, strategically designed to equip students with the practical skills required to address present-day national and global challenges.

The Department of Zoology at the University of Sri Jayewardenepura is a premier center for zoological education and research in Sri Lanka. Evolving from its classical roots into a dynamic hub within the Faculty of Applied Sciences, we are dedicated to addressing modern biological challenges. Our legacy is demonstrated through generations of graduates who are now leaders as academics, renowned researchers, and administrators, driving scientific and environmental progress nationally and beyond.

Zoology as a subject is delivered today by blending its core principles with contemporary applications beyond the classical nature of the discipline. The curriculum is tailored towards skill development in high-demand areas, ensuring graduates are prepared for a wide spectrum of scientific careers.

Aquatic Resources Management (ARM) has been offered since 2006 as a modern, multidisciplinary subject that addresses the sustainable utilization of aquatic resources. It provides students with specialized knowledge in both marine and freshwater systems, thereby creating experts capable of managing Sri Lanka's precious aquatic wealth.

Biology was initiated in 2012 in collaboration with the Department of Botany. This program provides a comprehensive education in the biological sciences, allowing undergraduates to gain a broad understanding of both animal and plant life, which serves as a crucial base for further specialization and a wide range of careers in the life sciences.

Undergraduate programme

The department offers B.Sc. and B.Sc. Honours degrees in Zoology, Aquatic Resources Management, and Biology. Our curriculum strongly focuses on laboratory-based, hands-on experiences and field-oriented learning. The mandatory industrial training component in our curriculum provides students with real-world experience and a critical career advantage. This focus on application ensures our graduates are highly sought after in the job market, ready to contribute as skilled graduates.

Field exposure for undergraduates

The Department of Zoology provides highly field-oriented courses where students get hands-on experience and practical skills crucial for careers in environmental science, wildlife ecology, aquaculture, fisheries, limnology, marine sciences, etc. Through diverse field studies, students gain invaluable exposure to real-world environments, enhancing their understanding and expertise.

This dynamic learning approach, supported by practical classes, ensures graduates are well-prepared and highly sought after in their chosen fields, making this program an excellent choice for those passionate about applied zoological and aquatic sciences.

Industrial Training

The Department offers Industrial Training for Zoology, Aquatic Resources Management, and Biology students to provide exposure in governmental and non-governmental organizations, the private sector, and research organizations, allowing students to gain valuable practical experience and industry insights relevant to their fields. This exposure enhances their professional skills and prepares them for diverse career paths across multiple sectors.

Postgraduate Programmes

The Department offers the following postgraduate programmes:

M.Sc./PGDip in Fisheries and Aquatic Resources Management

This program is designed to meet the increasing need for highly skilled managers, biologists, or biologically literate mathematicians and statisticians to work in Aquatic Resources Management. The duration for the M.Sc. is two years, and one year for the PGDip. Include Individual Research Projects for M.Sc. only.

M.Phil. and Ph.D. Degrees by Research

The department also offers M.Phil. and Ph.D. degrees by research in the Specialist Research Interests of the academic staff.

Student Associations

The Department of Zoology is supported by vibrant student societies: the Zoologists' Association, Aquatic Students' Association, Wildlife Circle, and Biology Society. These student-led groups add tremendous value to the academic community, organizing extensive, expert workshops, field visits, and impactful social projects as well as entertainment and cultural events. The core mission is to bridge classroom theory with real-world practice, providing members with contemporary knowledge and essential skills for their future careers.

Department Facilities

The Department of Zoology fosters active learning and discovery through its outstanding facilities. These include modern lecture theatres, advanced teaching and research laboratories, a serene butterfly garden, and a renowned zoological natural history museum.

This foundation is amplified by three premier research centers: the Center for Water Quality and Algae Research, the Centre for Marine Science and Technology, and the Center for Biotechnology, which provide the cutting-edge resources for groundbreaking scientific exploration.

For further information, please contact:

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Professor
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Mr. G. D. P. Weerasiri

Ms. K.G.D. Sadeesha

Mr. E. D. A. Warunajith

Supporting Staff

Department of Botany



Emeritus Prof.
H.G. Nandadasa



Emeritus Prof.
C. Wijeyarathne



Emeritus Prof.
K.M.E.P. Fernando



Emeritus Prof. N.
Salim



Emeritus Prof. Nelum
Deshappriya

Department of Chemistry



Emeritus Prof.
Tuley De Silva



Emeritus Prof.
S. P Deraniyagala



Emeritus Prof.
A. M. Abeysekara

Department of Computer Science and Statistics



Emeritus Prof. R.A. Dayananda

Department of Food Science and Technology



Emeritus Prof. Arthur Bamunuarachchi

Department of Forestry and Environmental Science



Emeritus Prof. B.M.P. Singhakumara



Emeritus Prof. (Mrs.) Hemanthi Ranasinghe

Department of Mathematics



Emeritus Prof. P.W. Epasinghe



Emeritus Prof. Sunethra Weerakoon

Department of Physics



Emeritus Prof. Dammika A. Tantrigoda



Emeritus Prof. P.C.B. Fernando

Department of Zoology



Emeritus Prof. J. Jinadasa



Emeritus Prof. S. Piyasiri



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Dr. P. B. Sampath Pushpa Kumara

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Ms. M. M. K. Ratnayake

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Senior Instructor



Ms. M. I. S. De Silva

B.A. (Honours) (Open University), M.A. (Kelaniya)

Lecturer (Unconfirmed)



Genetics & Molecular Biology Unit

The Genetics & Molecular Biology Unit was established in 2018 to cater to Sri Lanka's increasing need for competent Molecular Biologists with a strong Genetics background.

Introduction

Genetics and Molecular Biology are central to all biological sciences. Our mission is to provide the necessary toolset for our students to contribute to national development and the advancement of the field within the nation and worldwide. Graduates of our program will have a thorough understanding of the fundamental concepts of Genetics and Molecular Biology, in-depth knowledge of selected advanced concepts and techniques in these areas, and a good skill set. In a world where everything is intertwined with biotechnology, this knowledge and skill set combined with soft skills refined through various activities embedded within the courses will allow our students to integrate into any system where opportunity calls. Students will also have the opportunity to job shadow and train in an industrial setting to gain exposure and experience firsthand the applicability of what they are learning in the real world.

The unit, in concordance with other departments, offers the following two subject combinations:

- Biology, Chemistry, Genetics and Molecular Biology
- Environmental Management and Forestry, Chemistry, Genetics and Molecular Biology

Degree programmes offered by the Unit

B.Sc. General degree with Genetics and Molecular Biology as a subject

B.Sc. (Honours) degree in Genetics and Molecular Biology

B.Sc. (Honours) degree in Applied Sciences (Genetics and Molecular Biology)

Facilities:

The Genetics and Molecular Biology Unit is rapidly developing, having recently gained access to teaching and research laboratories equipped with the essential instruments required to conduct Molecular Biology experiments and research. In addition, laboratory visits are organized to state-of-the-art facilities such as GeneLabs; the Allergy, Immunology, and Cell Biology Unit, Department of Immunology and Molecular Medicine, Faculty of Medical Sciences, University of Sri Jayewardenepura; the Floriculture Research Centre, University of Kelaniya; the Genetics Laboratory at Lanka Hospitals Pvt. Ltd.; and the Plant Virus Indexing Centre. These visits aim to provide students with exposure to a wide range of technologies in the field, from fundamental to advanced levels available in the country.

Genetics and Molecular Biology Society

The Genetics and Molecular Biology Society (GeMSoc) of the Unit was established in November 2020 to disseminate knowledge, enhancing soft skills, and fostering a sense of community among students, especially during the challenging period

of COVID-19 closures. Since its inception, the society has organized a wide range of academic and extracurricular activities. Notably, students hosted SciDiplomatiX'23, Sri Lanka's first all-island science diplomacy competition, along with online trivia competitions for interschool and interuniversity participants, webinars, and interactive discussions with experts from academia and industry, both locally and internationally. The society also conducts workshops and short courses for undergraduates and scientists focusing on Molecular Biology laboratory techniques and Bioinformatics. In addition to academic initiatives, GeMSoc organizes GenePlay and Thaala Handawa. These vibrant events surpass a typical university talent show, providing students with a platform to showcase their talents, build lasting friendships, and create cherished memories. In 2025, the society successfully organized RISE'25 on the 1st of August, providing an excellent platform to exhibit innovative projects developed by faculty members and students. The society is also committed to community service through various outreach initiatives that support underprivileged students and promote science education across the country.

For further advice and information, please contact;

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Coordinator

Genetics & Molecular Biology Unit

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Dr. D. P. W. Jayatunga

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Academic Staff



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Management Science Unit

“Management is the science that professionals in a wide range of industries should possess to advance managerial and organizational decision-making and problem-solving. Management science is a broad discipline that deals with the science behind decision-making, and can be applied to mainly any professional field.”

Introduction

With a blend of scientific essentials, the Management Science Unit (MSU) within a faculty is a lively and dynamic academic unit committed to giving students a thorough understanding of the management concepts and procedures of industrial awareness. Experienced and well-known academics actively involved in cutting-edge research and industrial partnerships make up our unit. They ensure students are exposed to the most recent managerial concepts and best practices by bringing their knowledge and perspectives to the classroom. Students can participate in case studies, simulations, and internships that give them practical experience in managerial issues.

Our Mission

“To provide students with the resources and enduring professional skills they need to succeed in the demanding global managerial aspects, navigate the business side of scientific ventures, and drive innovation to contribute to national and international development.”

In a world that is changing quickly, the Management Science Unit provides students with the information, abilities, and mindset they need to become creative and accountable leaders. The unit also helps its students develop a strong sense of community through various organizations, groups, and networking opportunities.

Prominent companies across multiple industries greatly value graduates from the unit. Hence, our dedication fosters interdisciplinary collaboration with the faculty, allowing students to understand various industries’ scientific and managerial aspects comprehensively. Science degrees provide a solid basis for quantitative and analytical abilities, which are critical for managerial problem-solving and data-driven decision-making. Together with our other departments, the unit provides the following combination of subjects;

- Chemistry, Mathematics, Biology, Forestry and Environmental Science, Physics

Degree programs offered collaborated with the MSU

- Bachelor of Science in Biological Sciences-3 Year
- Bachelor of Science (Honors) in Applied Sciences–4 Year

Students studying science may encounter challenging issues that require a combination of administrative and scientific knowledge. In addition to scientific information, our unit provides students with frameworks for problem-solving and decision-making. Graduates with management and scientific expertise are in great demand across various science-based sectors, including research and development, technology, healthcare, manufacturing, pharmaceuticals etc. In a world that is changing quickly, the Management Science Unit is dedicated to giving students the information, abilities, and mindset

they need to become creative and accountable leaders.

Benefits of Selecting Management Science in Degree programs

- It offers a strong basis for professions in math, science, technology, and engineering (STEM).
- A degree in management science disciplines offers a strong basis for employment in supply chain management, operations research, consulting, and entrepreneurship, among other commercial domains.
- Students who study multidisciplinary courses are exposed to a variety of viewpoints and fields of knowledge, which promotes a comprehensive comprehension of challenging issues.
- Employees with managerial experience are highly valued in many sectors.
- A strong basis for future leadership through personal growth and development.

Social and Community Benefits of MSU

Our network and affairs generate a sense of community and belonging for our students, fostering connections, friendships, and shared university values. We promote diversity and inclusion by fostering a welcoming atmosphere for students from various ethnic and cultural backgrounds. Additionally, our unit gives

students the chance to organize activities engage in teamwork, and develop leadership. The unit consistently encourages international partnerships with foreign scholars to participate in guest lectures to exchange expertise in a variety of multidisciplinary areas, including workshops, research, career development, and leadership and communication.



Dr. K.A. Kamal Gnanaweera

PhD (TPU, Japan), MBA (USJ), MFE (UOC), MSc (AeU, Malaysia), PDPM (CIM, UK), PGD (UOC), BSc. (MSU, USA), CPM (Asia)

Coordinator- Management Science Unit / Senior Lecturer

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Career Guidance Unit

Career Guidance Unit helps undergraduates to develop their skills and abilities of self-assessment, information seeking and decision making required for coping with the needs of the complex world of work and to develop lifelong learning ambitions by providing services in Career Education, Career Guidance and Career Management.

Career Guidance Unit

The Career Guidance Unit (CGU) of the University of Sri Jayewardenepura aims to support and facilitate undergraduates to develop and enhance employability skills to be aligned with their life goals and to assist the graduating students in their employment search and career projects through different platforms.



Objectives of CGU

- To provide a service in Career Education, Career Guidance and Career Management
- To expose undergraduates and recent graduates of the university to a variety of resources including people, data and information
- To support undergraduates in their efforts to set life goals, plan future careers and put those plans into effect
- To support students for employability skills development through various activities and programs
- To help graduating students in their job search and career projects through recruitment related services

CGU Supports Undergraduates in Developing

1. A smooth transition from school to university through orientation, awareness, and wellbeing programs.
2. Career awareness and counselling to help students

3. make informed and realistic career decisions.
3. Employability skills such as communication, teamwork, leadership, and professionalism through workshops and training.
4. Access to up-to-date career information on local and international education, training, and employment opportunities.
5. Industry exposure and networking opportunities through career fairs, job fairs (Touch the Peak), and employer engagement programs.
6. Work experience readiness via internships, training placements, and experiential learning opportunities.
7. Graduate placement preparedness through CV clinics, mock interviews, and recruitment-related support.
8. Career development learning integrated into the curriculum through Career Development Course Modules.
9. Entrepreneurial and innovation skills developed through initiatives such as Kadamandiya, Food Fiesta, Start-up Mentoring, Sustainable Development Projects, and the Cafeteria Project, leading to successful student start-ups.
10. Personal and professional development through mental health and wellbeing programs, Outward Bound Training (OBT) for leadership and teamwork, and initiatives to strengthen English proficiency, public speaking, and lifelong learning skills.

Certificate Course offered by CGU HRM Course for non-HRM Students:

This 12 hr short course is conducted to teach the basic concepts of human resource management to students who are not following HRM as a subject in their degree courses in the Faculty of Humanities and Social Sciences, Faculty of Applied Sciences and Faculty of Medical Sciences.

Clubs and Society Details

Career Skills Development Society (CSDS)



CSDS is one of the main students' societies belonging to CGU. The CSDS, along with CGU, annually organizes diverse activities to enhance the employability skills of undergraduates.

Touch the Peak - J'pura Annual Job Fair and Workshop Series

Objectives

- To prepare the fresh graduates & Interns for the world of work.
- To develop the organizing skills of the undergraduates
- To provide an opportunity for our students to develop a relationship with executive officials of companies and institutes.

These programs will also contribute to the development of a positive image of the university as invited companies and other institutes can have a face to face interaction with graduates and lecturers at the

university premises.

Sathkaara

Our initiative to make the under-developed hospitals, more equipped with the aim of levelling up the standard of public health. Health is wealth as we all know. But when our health is at risk if we don't have the proper facilities in our nearest hospital to make us better, how helpless we would feel? So as a club through this CSR, we renovate rural hospitals and provide needed infrastructure to protect the health of humankind.

Shadow of Success

This is conducted throughout the year opens up the pathways to share experiences and ideas of renowned personalities such as veteran artists, athletes, and chefs who belong to different fields with the young generation to motivate them to pursue their goals of being a successful person who fits into the corporate world. This program feeds you with the portion of motivation, confidence, and self-realization to achieve your desired goals and targets in life. Simply, it says the simple directions to be a remarkable star among thousands of stars in your society.

Flair Club



Flair Club is a newly established association that is monitory under the Career Guidance Unit (CGU) which builds up and enhances the inborn talents of undergraduates of the University of

Sri Jayewardenepura.

Dhaara '24, the Inter-Faculty Singing Competition organized by the Flair Club of the University of Sri Jayewardenepura, is back! Highlighting the exceptional musical talent of undergraduates, Dhaara pushes them to achieve new heights. From the preliminary round to the grand finale at Nelum Pokuna, Dhaara is a thrilling marathon of musical excellence. Participants have the unique chance to showcase their hidden talents and develop their leadership qualities. Stay tuned for a musical journey filled with passion, talent, and the vibrant spirit of DHAARA'24

Voyage Workshop Series

Voyage workshop series is based on developing positive values and attitudes along with the career skills of the university students. These workshops will be conducted by renowned motivational speakers and psychological counselors.

JESA - J'pura Employability Skills Awards

This special awarding ceremony paves the path for us to identify the undergraduates with hidden talents, bring them to light and encourage the undergraduates to be actively engaged in extra activities to acquire soft skills and other essential skills. Some of the most famous activities/events among undergraduates are special university events, student mentoring, students' clubs /social events, conferences, presentations, meetings, ceremonies, volunteering, part-time employment, work placements etc.

Objectives

- To encourage the students to develop their soft skills
- To prepare the graduates to face the challenges in the co-operate sector.
- To attract more students to the Career Guidance Center and further facilitate them.
- To develop the network between the industry and the university undergraduates.
- To make undergraduates aware of the importance of employability skills to get a job in the current job market.
- To give a training opportunity to face interviews.
- To bridge the gap between the students and well-wishers.
- To inspire others to get involved in future endeavours.

OBT Camp

CSDS also organizes OBT camps that help to improve skills of participants while building unity. The most prominent benefits of this kind of training is team bonding and self-confidence building of individuals. These activities help to sharpen and fine-tune the behavioral skills and qualities of individuals and also develop mutual trust and understanding among members of a group. This training helps to generate fresh ideas and better attitudes while boosting the team spirit, thereby ultimately supporting the undergraduates to achieve their life objectives.

Donate Happiness Cancer Hospital Project

“Donate Happiness” project is conducted help the children residing in Cancer Hospital, Maharagama.

This program is organized annually at this hospital, providing every child a valuable gift. This programme also intends to develop social responsibility skills among the members of CSDS.

Arunella Career Guidance Program for School Children

The “Arunella” program is conducted to introduce career guidance to the schools and to guide Advanced Level students to plan their future. This program was inaugurated in 2014 and was successful in making students aware about the career planning after the A/L examination and being qualified graduates in the future.

Green Hopes - CSR Annual Project

This program is designed to develop environmental sensitivity among under gratuity and the active participate will be award certificates.



Gavel Club

The Gavel Club of the University of Sri Jayewardenepura is one of the most prestigious clubs in the university. Over the years the club has reached immense heights by pioneering the public speaking arena among other

universities. Most importantly the club is known for its sincere, welcoming and unbreakable bond it has with its members as well as the other undergraduates and clubs in the university. We conduct educational meetings every week to improve the public speaking skills of our undergraduates. The meetings consist of two sessions followed by comprehensive evaluations provided by fellow role-players at the respective meeting, giving a massive opportunity to enhance public speaking skills for our gaveliers. To add variety, we also organize special Themed meetings and Joint meetings with other Gavel clubs of Sri Lanka. The meeting enables any individual to take up roles such as Toastmaster, General Evaluator, Timer, Grammarian, Ah – Counter and Vote Counter which allows them to get awesome exposure from the respective roles. It also enables students to inspire, persuade and entertain others and in return to be inspired, `persuaded and entertained by the other members throughout the session. The friendly atmosphere that has around the Career Guidance Unit acts as a magnet in attracting the family and gives newfound freedom capabilities and abilities. The educational meetings are indeed a work of miracle

Speech Master and Junior Speech Master - Speech Master is the biggest all-island prepared speech competition rallied out by Japura gavel to drive, motivate, and bring the best orators in the Sri Lankan undergraduates’ communities into the spotlight. The Grand Finale of speech master 2024 was held for the Seventh consecutive year at the Sumangala Auditorium of the University of Sri Jayewardenepura.

Being one of the main events conducted talents. Being one of the main events conducted by the Club, it provides a platform for students within the University to showcase their talents irrespective of the year of study or the faculty, The club highly motivates and encourages undergraduates to partake in this event which provides an invaluable opportunity to improve their public speaking and communication skills.

Tharanya

The CSR project to the Gavel Club, consists of a one day program for an under-privileged school within the Colombo suburbs, which includes sessions of team building, motivation and soft skills development and an on-going project in which, students from the Department of English visit the school every Saturday to help improve students' English knowledge.

Counselling Services

We provide psychological counselling services with professional counsellors who take a holistic approach. We believe that integrating the mind, body, and spirit is essential for a healthy and productive student life. We are committed to safeguarding the confidentiality of all your information.

CGU Supports Undergraduates in Developing

1. A smooth transition from school to university through orientation, awareness, and wellbeing programs.
2. Career awareness and counselling to help students make informed and realistic career decisions.
3. Employability skills such as communication, teamwork, leadership, and professionalism through workshops and training.
4. Access to up-to-date career information on local and international education, training, and employment opportunities.
5. Industry exposure and networking opportunities through career fairs, job fairs (Touch the Peak), and employer engagement programs.
6. Work experience readiness via internships, training placements, and experiential learning opportunities.
7. Graduate placement preparedness through CV clinics, mock interviews, and recruitment-related support.
8. Career development learning integrated into the curriculum through Career Development Course Modules.
9. Entrepreneurial and innovation skills developed through initiatives such as Kadamandiya, Food Fiesta, Start-up Mentoring, Sustainable Development Projects, and the Cafeteria Project, leading to successful student start-ups.
10. Personal and professional development through mental health and wellbeing programs, Outward Bound Training (OBT) for leadership and teamwork, and initiatives to strengthen English proficiency, public speaking, and lifelong learning skills.

The Career Guidance Unit (CGU) is one of the most important support centres of the university. It is dedicated to assisting undergraduates, particularly fresh graduates, to develop essential skills, self-assessment capabilities, and effective information-seeking and decision-making abilities, thereby enhancing their employability in today's highly competitive world of work.

The following staff members are fully committed to supporting students in achieving their career aspirations:

1. Dr. Eranga Jayasekara – Director
2. Dr. Sameera Jayawardane – Advisor, Gavel Club
3. Mrs. Chathurangani Thennakoon – Advisor, Career Skills Development Society, Flair Club, and Start-up Hub
4. Mrs. H. M. S. Niroshani – Advisor, Values of the Wise Society (VOW)
5. Mrs. Nirosha Madhuwanthi – Advisor, Adventure Club and J'pura National Rover Crew

Career Guidance Unit – Staff

Academic Staff Details

Prof. Sudath M Amarasena -Director Career Guidance Unit

Academic Supportive Staff Information

01. Mr. Sameera Jayawardane - Career Adviser
02. Mrs. Chathuranagani Thennakoon Career Adviser
03. Mrs. Nirosha Madhuwanthi - Career Guidance Counselor

04. Mrs. Shashika Niroshani - Career Guidance Counselor

Non- Academic Staff

- Ishara Prarackrama – Management Assistant
- Saman Bandara – Work Aid

For further details please visit our website and contact:

Career Guidance Unit
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FAS Career Guidance
Prof Thilini Gunasekara
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To join with clubs please use following QR codes

- CSDS



Startup Club



- Flair Club



- Adventure Club



- Gavel Club



- VOW



- Jpura National Rover Crew



Activities of the Career Guidance Unit

 <p>Career Skills Development Society (CSDS)</p>	<p>The CSDS is a student-led initiative dedicated to enhancing employability by developing essential soft skills, providing career guidance, fostering professional networks, and encouraging active community engagement.</p>	
 <p>Flair Club</p>	<p>Flair is a vibrant platform that nurtures students' artistic talents, promotes creativity and aesthetic appreciation, and holistic personal development through diverse events.</p>	
 <p>Gavel Club</p>	<p>This is a dynamic platform that empowers students to enhance their public speaking, communication, and leadership skills, fostering confidence and professionalism for their future careers.</p>	
 <p>Startup Hub</p>	<p>This is an innovative platform that empowers undergraduates to develop entrepreneurial skills, gain real-world business experience through networking and practical exposure to entrepreneurship.</p>	
 <p>Adventure Club</p>	<p>Spice Adventure Club is a platform for energetic undergraduates to develop their skills while pursuing their passion for adventure with a member base of about 2000+ including all faculties of the university.</p>	
 <p>Values of the Wise Society</p>	<p>This is dedicated to promoting virtues and values in professional development, fostering a value-based mindset among undergraduates, and inspiring social responsibility through meaningful initiatives.</p>	
 <p>Career Guidance Cell</p>	<p>This facilitates career exploration, enhancing students' employability and industry readiness, and fostering strong partnerships and networking opportunities with professionals and organizations.</p>	



The Library

The mission of the Library is to provide access to library and information services in an efficient, effective, and useful manner to support teaching, learning, and research activities of the intellectual community by making resource materials available and by assisting users to be acquainted with skills in locating information deemed necessary in the modern age of information.

Profile

The Library plays an important role in university education, supporting the three main pillars of the university: teaching, learning, and research. There is a collection of more than two hundred thousand books, hundreds of journals, and a few electronic databases and e-books in the library, mainly to cater to the eleven faculties.

The library has acquired several electronic resources such as e-books, e-journals, and bibliographic and full-text databases covering almost all the subject disciplines. All these databases and other free electronic resources are listed under e-resources on the library website (www.sjp.lib.ac.lk). For some databases, a username and password are needed, while others can be accessed within the university/faculty premises. Remote access is facilitated through the CITS of the university.

The staff is headed by the librarian Dr (Mrs.) N D Wijayasundara ensures that the Library is updated and fully equipped to serve your needs. There are three branch libraries under the main library: Medical, Engineering, and Technology. These branch libraries are located in their faculty premises.

The library collections of the Technology and Engineering libraries are specially developed for their subject disciplines. The Medical library collection is developed for the users of the Faculty of Medical Sciences, the Faculty of Allied Health Sciences, and the Faculty of Dental Sciences.

Opening Hours

Depending on the situational requirements opening hours of the library may change with prior notification.

	During Semester	During the Examination period
Week days	8.00 am – 8.00 pm	5.00 am – 10.00 pm
Week ends	8.00 am – 6.00 pm	8.00 am – 6.00 pm
Poya days and other public holidays	-	8.00 am – 6.00 pm

Organization of the Collection

Monographs are classified under subjects using an international standard, the Dewey Decimal Classification (DDC) system, and catalogued using an Anglo American Cataloguing Rules (AACR II). All books in the library can be browsed using the Online Public Access Catalogue (OPAC).

This is available via the library website. For collection organizing purposes, books are categorized as follows; PR (Red R): Permanent Reference - Not allowed for borrowing SR (Green R): Scheduled Reference - Overnight Reference Lending: Can be borrowed for a period of two weeks. Readers can get photocopies of required articles.

Periodicals Division

Serial publications, including journals and magazines, are kept in the Periodicals Division. The Library consists of print journals as well as electronic journals and databases.

Scholarly journals, including international journals and local journals, cover many of the subject disciplines. Current issues are displayed on display racks according to the alphabetical order of journal titles. Bound volumes are also stored according to the alphabetical order of titles. The availability of journal issues can be checked using the Visible Index at the Periodicals Division or via the Online Public Access Catalogue (OPAC). Serials are only for reference. They are not for lending. Readers can get photocopies of the required articles.

Interactive Study Area

All registered library users can get online access to electronic databases, journals, and Internet facilities within the Interactive Study Area during weekdays from 8.00 a.m. to 8.00 p.m. and from 8.00 am to 6.00 pm during weekends and holidays. There are about 15 terminals in this area.

Ceylon Room

The objective of maintaining the Ceylon Room is to maintain books written about Sri Lanka. Apart from those, Sri Lankan government publications such as acts, bills, administrative reports, bank reports, and publications of government corporations, boards, and authorities, and palm leaf manuscripts are available in the Ceylon Room. Postgraduate theses submitted to the University of Sri Jayewardenepura and theses submitted by academic staff members to other Universities/Higher Education Institutions are also housed in the Ceylon Room.

The entire collection in the Ceylon Room is on a permanent reference basis and not for borrowing.

English Learning Zone (ELZ)

The ELZ supports English learning with storybooks, a mini-theatre, and a space for performance practice. It also hosts monthly talks and Basha Buddy sessions, where students converse with language volunteers.

Depository Collection

Books that have not been borrowed for a long period are stored in the Depository Collection, which is located on the second floor of the library, and they can be borrowed on request.

How to use the Library:

Reader services and library clearance certification are handled through the reader services counter located on the left side of the ground floor near the main entrance. Bringing personal books, periodicals, newspapers, cameras, food, and drinks into the library is strictly prohibited. Personal belongings of library users should be kept in the cloak room upon obtaining a token.

Library Registration and Obtaining Library User Accounts

Upon registration with the University through the Student Information System, students will receive an email containing their library system user account details. Full responsibility for the use and security of this account rests with the user, and the Library will

not be liable for complaints relating to individual accounts. Users are responsible for safeguarding their passwords and must report any misuse, including unauthorized borrowing of library materials, within seven (7) days of occurrence. The account holder remains responsible for all materials issued to their account.

Library facilities are terminated at the completion of the studentship at the university. Such students should return all borrowed library books to the library.

Issuing of Library Books

Undergraduates can borrow 04 books at a time (01-SR; 03-Lending). Books needed to be borrowed should be given to the officer at the main counter along with the student's identity card or the record book. The due date is stamped on the date slip of the book, and those books are inspected by the library security staff before being taken out of the library. Books borrowed should be returned to the relevant counters on or before the due date.

The loan period for the Lending books is two weeks, and the Scheduled Reference books are for overnight. SR books should be returned before 10.00 a.m. on the following day.

User Education

The Library conducts orientation programs for all new students. Library resources and their use are explained in this program. Specialized programs on Information Literacy and hands-on practical sessions on electronic resources are conducted for student

groups at the request of academic departments.

Inter-Library Loan (ILL) Service

The library conducts a service to provide materials from other library networks if a particular item is not available in our library. Library users can request this service by submitting a completed request form available on the library website to the library or emailing it to 'illusjp@sjp.ac.lk'.

General Rules on Library Use

Library users should produce the identity card issued by the university to prove their identification upon request by any library staff member. Library users should not attempt to reserve seats in reading halls by placing books or other personal materials on tables or chairs. All personal materials should be taken along when leaving the reading hall. Library users should not attempt to reshelv books once they are taken out from bookshelves. They should keep the books on tables instead. Books on shelves should not be purposely disordered. The use of mobile phones and eating food within the library is not allowed. The library is considered as a non-smoking area.

Library users are welcome to contact the Librarian or any Academic Staff members of the library for further assistance and clarification with regard to library materials and their access. The whole library staff is committed to assisting you always.



Office of the Dean

The Faculty of Applied Sciences (FAS) is headed by the Dean. The office of the Dean co-ordinates all academic and administrative activities of the faculty. Each academic department runs under the supervision of the Head of the Department who then reports to the Dean of the faculty.

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A Senior Assistant Registrar or an Assistant Registrar is appointed to assist all administrative work in the faculty including all matters regarding the non-academic staff, registration of students, examination work and secretarial work of the faculty.

The main task of the office is to provide the administrative mechanism required for coordinating the departments and degree programmes. Furthermore, the office is responsible for programme scheduling, coordinating, academic advising and maintaining student records. The record room is an integral component of the the Office of the Dean, which is responsible for coordinating examinations, processing marks and maintaining the student information system.

The Assistant Bursar attached to the Faculty of Applied Sciences helps the smooth functioning of all finance and supplies related activities under the delegated authority.

Academic Staff



Prof. Meththika Vithanage
B.Sc. (SUSL), M.Sc. (Peradeniya), Ph.D. (Copenhagen, Denmark)

Professor
Research Interest: Environmental Chemistry, Air-Water-Soil Pollution
Monitoring, Modeling, Remediation and Restoration
Email - meththika@sjp.ac.lk

Staff-Office of the Dean



Mrs. A. A. Y. Abeysinghe
B.A. (Social Sciences) (OUSL), PGD (LR & HRM) (UOC), MHRM
(IHRA)

Assistant Registrar
E mail: ar.fas@sci.sjp.ac.lk



Mrs. Surdarshani Walpola
BSc (BA, Special, USJ), MBM (Reading, IHRA)

Senior Assistant Bursar
E mail: fgfinance@sjp.ac.lk



B.Sc. (USJ, Sri Lanka), PGD (Comp. Sci.) (Colombo, Sri Lanka)

Instructor – Computer Technology

Email: thuresh@sci.sjp.ac.lk

Staff-Office of the Dean

Mrs. G.S. Damayanthi Perera	Mrs. Nadeesha Perera	Mr. Aruna Udayanga
Mrs. Tharaka De Zoysa	Mr. S.N. Amarasekara	Mrs. Y.H.N. Dahami
Mrs. L.D.P. Jayarathna	Mr. I.V.S.M. Premarathne	Mr. M. Asanka Lakneela
Mr. H.A.D. Gayan	Miss. W.D.N. Perera	Miss. M.M.P.K. Kumari
Mr. D.M.P.N. Ranaweera	Mr. G.H. Anil Silva	Mr. D.M.P.C. Dassanayake
Mr. R. Jayaweeran	Mrs. Sasini Wijesuriya	Mr. Chamara Gajaweera
Mr. T. Jayasinghe	Mr. H.M. Chamila Udaya	Mr. K A D Ashen pieris



Instrument Centre

Maintained by the Office of the Dean, Faculty of Applied Sciences, University of Sri Jayewardenepura, the Instrument Centre was established to provide centralized access to state-of-the-art analytical and research instrumentation. The Centre is managed by qualified and trained technical personnel to ensure the highest standards of operation and data reliability.

Its facilities are available to all relevant departments within the University, with limited access also extended to researchers from other academic institutions and industrial sectors across the country.

Introduction

The Instrument Centre of the Faculty of Applied Sciences (IC-FAS) at the University of Sri Jayewardenepura is a leading central research facility, featuring an extensive array of advanced analytical instruments for scientific research. Governed by the Office of the Dean, IC-FAS is recognized as one of the premier academic laboratories in Sri Lanka.

The IC-FAS is driven by the vision “To be the center of excellence in providing high-end analytical instrument services”. In pursuit of this vision, the Centre’s mission is to be the preferred partner in academic and industrial research by delivering accurate and reliable test results while upholding the highest standards.

The main aim of the Centre is to provide every student with significant hands-on experience using the latest and most sophisticated techniques and instruments relevant to both academic and industrial research.

In addition to supporting undergraduate academic activities, the Centre offers services to the scientific community by:

- Analyzing samples received from academic and research institutions and industries.
- Conducting potential industrial research projects in collaboration with industry partners.
- Organizing short-term courses and workshops on various instrumental techniques for students, technical officers, and personnel from industries.

Instruments available:

Instrument	Model
X-Ray Diffractometer (XRD)	Rigaku Ultima IV
Gas Chromatography Mass Spectrometry (GCMS)	Agilent Technologies 7890A GC couples to 5975C MS with Triple Axis Detector
High Performance Liquid Chromatography (HPLC)	Thermo Scientific Vanquish Core HPLC
Atomic Absorption Spectrometer	Thermo Scientific iCE 3500
UV-Visible Spectrophotometer	Peak Instruments C7200A
Ion Chromatography System	Metrohm 930 IC Flex
Thermal Gravimetric Analyzer	TA SDT 650
FTIR spectrometer	Thermo Scientific Nicolet iS10
Fluorescence Spectrometer	Thermo Scientific Lumina
Multi-parameter SONDE	YSI EXO2

For further advice and information, please contact:

Dr. Saranga Diyabalanage
Director/ Instrument Centre,
Faculty of Applied Sciences,
University of Sri Jayewardenepura.
Telephone: +94 112758409
Email – coordinator.cif@sjp.ac.lk



Dr. Ravindu Saranga Diyabalanage
B.Sc. (Sp) (SUSL), Ph.D. (Peradeniya)

Senior Lecturer and Director

Research Interest: Environmental Chemistry, Heavy metal pollution and environmental monitoring, Medical geology

Email - saranga@sjp.ac.lk



Prof. Anushka U. Rajapaksha

B.Sc. (Peradeniya), M.Phil. (Peradeniya), Ph.D. (KNU, South Korea)

Professor

Research Interest: Environmental Remediation, Adsorption, Biological Environment, Environmental Chemistry, Heavy Metal Contamination

Email - anurajaksha@sjp.ac.lk

Ms. Heshani Thathsara	Ms. Vinavee Apsara	Ms. Nadeesha Maduwanthi
Mr. W.S.P. Priyadarshana		



Medical Centre

The Medical Centre of the University takes care of the medical problems of the University community. These include medical care, dental care, counselling, and preventive care.

Introduction

The Medical Centre of the University provides medical care, dental care, counselling, and preventive care to the students, staff and families of University community.

Consultation hours: from 8:30 a.m. to 4:00 p.m during weekdays, on an outpatient basis.

Staff: Medical Doctors, Dental Doctor, Nurses, Pharmacists, Public Health officers (PHI), Counselors, Management Assistant, ICT technical officer, Workaids and Labourers.

Services

- We have started to screen staff members Faculty wise for Diabetes and High blood pressure, and they will be referred to our Diabetic and Pressure clinic held every 4th Friday of the month.
- Medical care- Medical care is given as an outpatient basis where patients are seen and treated as necessary. Medicines and treatment are also provided. Operates on week days from 8:30 a.m. till 4 p.m.
- Emergency Medical care- Emergency care is provided by our staff who is well trained in basic life support and advanced life support. Ambulance service is available 24hours for in campus students and those residing in proximity to University.
- Preventive care- Preventive care is done by PHI section involves canteen and hostel inspections, anti-rabies programs, anti-dengue programs.
- Dental care- Dental care is given by the Dentist. Appointments should be taken prior to coming by calling- 075 4342787

- Counseling- Counselors are available and seen by appointments. Their availability and venue, please check web site, under Medical center (<https://www.sjp.ac.lk/students/medical-centre/>)
- Basic Life support training- This training is given to staff and students upon request from respective heads of departments.
- Medical certificates- The Doctors issue Medical certificates for sick students. We also approve Medical certificates given by external Doctors (working in government and private sector) having an MBBS degree. Please upload Medical certificates for the examinations you could not sit for, timely. Please indicate the correct dates of the examinations held.

Digitalised System

The Medical centre was fully digitalised in 2021 and has been going paperless for the past 3 years.

The software which is used at the Medical centre is the Hospital Health Information Management system (HHIMS).

Our medical center became the first-ever medical center in a higher education institute of Sri Lanka to benefit from the Hospital Health Management Cloud Service adoption.

The benefits include fully-fledged Electronic Health Record (EHR) services ranging from Patient Registrations, Appointment Queue Management, Diagnosis and Prescriptions in compliance with global standards for disease classifications, symptom registrations etc.

The Medical center of Sri Jayawarenepura University is the only Medical center to have obtained ISO 9001:2015 certification for their services.



Physical Education Unit

The Physical Education Unit at the University of Sri Jayewardenepura promotes sports and recreational activities for students and staff across all faculties. It organizes major events, supports inter-university competition participation, and encourages involvement in international events. The unit is guided by the Sports Advisory Board and Sports Council, enhancing a strong university sports culture.

Introduction

The Physical Education Unit at the University of Sri Jayewardenepura was established with the primary goal of promoting and enhancing sports within the university. This unit oversees the sports and recreational activities for both students and staff across the university's 11 faculties. It plays a pivotal role in sports development and is responsible for organizing a variety of sports-related activities, including outbound training sessions, leadership camps, and managing participation in 43 competitive sports events as well as non-competitive activities like Zumba and yoga. Each year, the unit hosts significant events such as the Freshers' Meet and the Inter-Faculty Meet, which encourage active student participation. In addition, the unit prepares and supports students for annual inter-university competitions, including the prestigious Sri Lanka University Games held every three years. On a global scale, the unit also facilitates student participation in international events such as the World University Games. These comprehensive initiatives highlight the unit's critical role in cultivating a vibrant sports culture within the university. The Sports Advisory Board, comprising academic and administrative staff, provides crucial support for the activities of the Physical Education Unit. In addition, the unit includes a Sports Council, which is made up of the captains and vice-captains of all sports teams.

Under the expert guidance of experienced instructors, the unit is led by Director Mrs. Nishanthi Vidanage, with Mrs. Ramani Kulathilaka and Mr. H.L. Lahiru

Dilankara serving as permanent sports instructors. The team is further supported by temporary sports instructors, including Mrs. E.D. Priyadarshani, Mrs. N. Karunarathne, Mr. N. Ginige, Mr. P.D. Pasindu Mihiranga, and Mr. G.H.D. Supun Dhananjaya. Together, they ensure the effective execution of the unit's mission to enhance the university's sports and recreational landscape.

Objectives

- To give an understanding on the values of Physical Education to internal students of the university and to give them a physical development through mental development.
- To provide an opportunity for improvement of sports activities and skills.
- To encourage sports participation by playing tournaments, with internal and external sports bodies.
- To develop discipline by encouraging sports activities among students.

Programs Conducted by the Physical Education Unit

- **Leadership Training Programs for First-Year Students:** Aimed at fostering leadership skills through interactive workshops and activities that promote teamwork and effective communication.
- **Personal and Professional Development Program:** Focused on enhancing personal growth and career readiness, this program offers seminars and mentorship to build essential life skills.

Out Boundary Training: An outdoor program that combines physical challenges with team-building exercises, encouraging resilience and collaboration among students.

Facilities Available at the Physical Education Unit

- Swimming Pool
- Grounds (Upper Ground and Lower Ground)
- Strength Training Center
- Weightlifting Room
- Basketball Court
- Volleyball Court
- Tennis Court

- Table Tennis Room
- Wrestling Room
- Carom Room
- Chess Room

For further advice and information, please contact:

Mrs. Nishanthi Vidanage

Director of Physical Education Unit

Email: vidanage@sjp.ac.lk



Student Affairs



Scholarships /Medals offered by the faculty

Most Venerable Sri Sumangala Gold Medal	Awarded to the student who has shown the Highest Level of Excellence in both Academic and Extra-curricular performance among the students who have secured the Highest-Grade Point Average (GPA) at the Bachelor of Science Degree.
Chemical Industries (Colombo) Ltd Gold Medal	For obtaining a First-Class Pass with Highest Marks at the Bachelor of Science (Honours) Degree in Chemistry Final Examination.
Professor Tuley De Silva Gold Medal	For obtaining a First-Class Pass with Highest Marks at the Bachelor of Science (Honours) Degree in Chemistry Examination.
Professor G.C.N. Jayasuriya Memorial Gold Medal	For obtaining Highest Marks at the Bachelor of Science Degree in Chemistry Examination.
L. A. C. Alles Gold Medal	For obtaining a Highest-Grade Point Average (GPA) for 3rd year & 4th year in the Bachelor of Science (Honours) Degree in Food Science and Technology Examination.
Professor A.M. Abeysekera Gold Medal	For obtaining a First-Class Pass with Highest Grade Point Average (GPA) for Courses of Organic Chemistry in the 3rd & 4th years at the Bachelor of Science (Honours) in Chemistry Degree Examination.
Professor Winston Eric Rathnayake Memorial Gold Medal	For obtaining a Second Class (Upper) Division Pass with Highest Marks at the Bachelor of Science (Honours) Degree in Zoology Examination.
Professor W.S. Fernando Gold Medal	For obtaining a First-Class Pass with the Highest-Grade Point Average (GPA) for Core & Compulsory Courses of Physical Chemistry and Inorganic Chemistry in the 3rd and 4th year at the Bachelor of Science (Honours) in Chemistry Degree Examination.

Professor H.G. Nandadasa Gold Medal	For obtaining a First-Class Pass with Highest Grade Point Average (GPA) at the Bachelor of Science (Honours) Degree in Plant Biotechnology Examination
Forestry & Environmental Science Gold Medal	For obtaining a First-Class Pass with Highest Grade Point Average (GPA) at the Bachelor of Science in Environmental Management and Forestry (Honours) Degree Examination.
Finagle Lanka (Pvt) Ltd Gold Medal	For obtaining a First-Class Pass with Highest Grade Point Average (GPA) from Overall Results of the Bachelor of Science (Honours) Degree in Food Science and Technology with the Highest Number of 'A' grades in the Examination.
Professor Arthur Bamunuarachchi Gold Medal	For obtaining a First-Class Pass, Highest Grade Point Average (GPA) for Food Science and Technology practicals in all three years (I, II and III year), Seminar, in Plant Training/Industrial Placement and Research Project in the Bachelor of Science (Honours) Degree in Food Science and Technology Examination.
Professor W. S. Fernando Gold Medal	For obtaining a Highest-Grade Point Value for Food Chemistry, Chemistry of Living Systems, Food Analysis and Food Structures and a First-Class Pass in the Bachelor of Science (Honours) Degree in Food Science and Technology.
Extended Degree Gold Medal	For obtaining a First-Class Pass with Highest Overall Grade Point Average (GPA) at the Bachelor of Science (Honours) in Applied Sciences Degree Examination.
Sports Science and Management Gold Medal	For obtaining a First-Class Pass with the Highest-Grade Point Average (GPA) with the Highest Number of 'A' grades in the Bachelor of Science Honours Degree in Sports Science and Management Examination.

Professor Sunethra Weerakoon Gold Medal	For obtaining a First-Class Pass with Best Performance in Applied Mathematics at the Bachelor of Science (Honours) Degree in Applied Mathematics.
Academic Excellence Award donated by Virtusa Corporation	For obtaining a First-Class Pass with Highest Academic Excellence in the Bachelor of Science (Honours) Degree in Computer Science.
The Gold Medal of The Alumni of Aquatic Science	For obtaining a First-Class Pass with the Highest Overall Grade Point Average (GPA) at the Bachelor of Science (Honours) Degree in Aquatic Resources Management Examination.
Dr. Siromi Samarasinghe Gold Medal	For having obtained a First-Class Pass at the Bachelor of Science (Honours) Degree in Chemistry examination, and for obtaining the Highest-Grade Point Average (GPA) at the selection for the Bachelor of Science (Honours) Degree programme, and for obtaining a GPA of 2.00 or above for the two subsidiary subjects and for all the Chemistry courses at the first attempt.
Professor Arthur Clement Justin Weerakoon Memorial Gold Medal	For obtaining a First-Class Pass with the Highest-Grade Point Average (GPA) at the Bachelor of Science (Honours) Degree in Biology Examination.
Gold Medal for the Genetics and Molecular Biology Honours Degree	For obtaining a First-Class Pass with the Highest-Grade Point Average (GPA) for the Genetics and Molecular Biology subject.
Gold Medal Sponsored by Dipped Products	For obtaining a First-Class Pass with Best Performance during the Final Year Examination in BSc. (Honours) Polymer Science Programme Examination.

Professor S. Chandrani Wijeyaratne Gold Medal	For obtaining a First-Class Pass with the Highest-Grade Point Average (GPA) at the Bachelor of Science (Honours) Degree in Microbiology Examination.
Dr. Sirimathi Wewala Memorial Gold Medal	For obtaining a First-Class Pass with the Best Performance at the Bachelor of Science (Honours) Degree in Mathematics Examination.
Genetics and Molecular Biology Gold Medal	For obtaining a Second Class (Upper) Division Pass with the Highest-Grade Point Average (GPA) for the Genetics and Molecular Biology subject at the Bachelor of Science Degree Examination.
Professor R.A. Dayananda Gold Medal	For obtaining a First-Class Pass with Highest Marks at the Bachelor of Science (Honours) Degree in Statistics.
Professor P.C.B. Fernando Gold Medal Donated by the Alumni of Faculty of Applied Sciences	For obtaining a First-Class Pass with Highest Academic Excellence in the Bachelor of Science (Honours) Degree in Physics.
Professor Piyasiri Amilasith Yapa Gold Medal	For obtaining a First-Class Pass /Second Class (Upper) Division Pass with highest Grade Point Average (GPA) in the Bachelor of Science (Honours) Degree in Plant Biology Examination.
Professor W.S.Fernando Gold Medal	For obtaining a pass with the Highest-Grade Point Average (GPA) and more than 3.30 GPA for Statistics at the Bachelor of Science Degree Examination.
M.Sc. in Polymer Science and Technology Alumni Society Gold Medal	For obtaining a pass with the Highest-Grade Point Average (GPA) AND highest number of 'A' Grades for the Polymer Science and Technology Subject in the Bachelor of Science Examination

Academic Advisors

Students are strongly advised to obtain guidance from academic advisors prior to registration for courses/course units. Academic Counsellors of each subject are as follows.

Botany	Dr. (Mrs.) P. K. C. Buddhinie Dr. Dimuthu Manamgoda
Chemistry	Dr. Upul Kumarasinghe Dr. Isurika Fernando
Computer Science	Mr. T. M. K. K. Jinasena Dr. (Mrs.) M. K. A. Ariyaratne
Food Science & Technology	Dr. Sashie Abeywickrema Dr. T. G. G. Uthpala
Forestry & Environmental Science	Prof. Daham Jayawardene Dr. Chaamila Pathirana
Genetics and Molecular Biology	Dr. Kasun. M. Thambugala Dr. (Mrs.) Hiruni Harischandra
Mathematics	Dr. B. P. W. Fernando Dr. (Mrs.) M. T. M. Perera
Physics	Dr.(Mrs.) W.W.P. De Silva Dr.(Mrs.) S.Kandeepan
Polymer Science	Dr. Sampath Gunathilka Dr Sulashi Samarasinghe
Sports Science	Dr. (Mrs.) S. Weerasinghe Mr. K.P. Manawadu
Statistics	Dr. W. N. N. K. Perera Dr. (Mrs.) C. L. Jayasinghe
Zoology	Dr. (Mrs. K. V. K. Gunathilake
Aquatic Resources Management	Prof. (Mrs.) D. C. T. Dissanayake
Biology	Dr. F. S. Idroos
Management Science Unit	Dr. (Ms.) Y. A. Iddagoda

Useful Contact Numbers

The Help Line for Students: 072 6885344

Director of Student Welfare: Dr. Mahesh Fernando- 071 5341832

Proctor: Mr. Nihal Chandrathilake- 071 8053293

Deputy Proctors/FAS:

Prof. Madhura Jayasinghe- 071 6255690

Dr. Tharindu Senapathi- 071 7385385

Dr. Chathuranga Vidanage- 071 8483452

Dr. Kaushal Manawadu- 077 8082125

Student Counsellors of the Faculty:

Dr. M. A. S. Udayanga - 0763663246

Dr. Randika Dodangoda - 0713035017

Dr. (Ms.) S A Sulashi Samarasinghe -0765603885

Dr. (Ms.) Dulani Somendrika -0702758312

University Medical Officer: 0112803199, 0112758499

For more details...

Link to Student counsellors and Academic advisors;

<https://science.sjp.ac.lk/student-and-academic-counsellors/>







**THE ALUMNI ASSOCIATION OF
THE FACULTY OF APPLIED
SCIENCES**



PHOTOGRAPHED BY
J. PURA FIAMES

BACK TO CAMPUS

jpurafiames.com



325

ON 8TH OF JUNE 2024
10.00AM ONWARDS
KEEP THE DATE FREE



**Back To
CAMPUS**

ORGANISED BY JAPIIRA SCIENCE ALUMNI

The Alumni Association of the Faculty of Applied Sciences University of Sri Jayewardenepura

The Alumni Association of the Faculty of Applied Sciences, University of Sri Jayewardenepura was established on 16 March 2013 to foster a lifelong connection between the university and Alumni. The mission of the Alumni is to guide the university to achieve academic excellence by strengthening the ties between its communities.

The objectives of the association are:

- To encourage, foster and promote close relations between the Faculty and its alumni and among the alumni themselves,
- To promote, in the alumni body, an interest in the affairs and well-being of the Faculty. o To provide and disseminate information regarding the Faculty its graduates, staff and students to the alumni,
- To initiate and develop programs for the benefit of the alumni,
- To assist and support the efforts of the Faculty in obtaining funds for its development,
- To serve as a forum through which alumni may support and advance the pursuit of academic excellence at the Faculty, To guide and assist alumni who have recently completed their courses of study at the Faculty: o obtain employment and engage in productive pursuits useful to society.
- To pursue any other activity canytsteul with the above objectives

Office Bearers of the Association for 2023/25

The President: Mahinda Ranasinghe

The Vice-Presidents: Prof. Hiran Amerasekera
Thusitha Kariyawasam
Kushan Amarasinghe

General Secretary: Lasantha Perera

Assistant Secretaries Prof. Kamal Ranatunga
Dr. (Ms) Thiyanga Talagala

Treasurer: Dr. Indika Wanniarachchi

Assistant Treasurer: Samantha Sudeshpriya

For more information, please visit: <http://science.sjp.ac.lk/alumni/>

Compiling

Dr. T. G. G. Uthpala
Dr. K. N. Samarasekera
Dr. M. D. M. Munasinghe
Dr. P. A. Palamure
Dr. S. M. Jayawickrama

Reviewing

Dr. R.S Diyabalanage

Technical Support

Chamath Wijesekara
I.V. Sandun M. Premarathne

Prospectus

2025/2026



PROSPECTUS 2024-2025

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University of Sri Jayewardenepura
Nugegoda, Sri Lanka.

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