Master of Science in Industrial Organic Chemistry

The Master of Science 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 one-year research project (30 credits) related to Organic Chemistry / Industrial Organic Chemistry under the supervision of a senior staff member.

Objectives/ Graduate Profile:

A graduate of Master of Science in Industrial Organic Chemistry should be able to;

- *Propose, direct and carry out development processes of respective fields through comprehensive theoretical knowledge and practical skills gained from the postgraduate level scientific training.*

- *Analyze problems related to the chemical industry and provide innovative value-added solutions by meeting realistic socio-economic and environmental constraints.*

- *Work independently as well as a team member or leader in diverse multi-disciplinary settings to accomplish common goals.*

- *Apply knowledge effectively as a part of problem-solving exercises.*

- *Communicate effectively in both written and oral forms.*

- *Develop a research topic that includes evaluation and discussion of an extensive literature review; discussion, planning and conducting a series of research trials/data gathering exercises; analysis of the data; and the writing of a comprehensive report/thesis*.

Professional and Employment Opportunities:

This program provides 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.

Admission Requirements:

To be eligible for admission to this program an applicant must possess one of the following qualifications;

- *BSc Special or Honours degree (SLQF 6) in Chemistry*
- *BSc General Degree (SLQF 5) with Chemistry as a subject*
- *BSc Special or Honours Degree (SLQF 6) with Chemistry as a subject*
- *BSc Degree (SLQF 5 or 6) in Chemical Engineering / Food Science or Agriculture / Pharmacy and Medical Laboratory Technology (MLT) with Chemistry as a subject / relevant subject area*
- *BSc Honours in Fisheries and Marine Sciences or Marine and Freshwater Sciences (SLQF 6) with Chemistry as a subject/relevant subject area*
- *An equivalent qualification recognized by the University Grants Commission*
- *Equivalent qualification accepted by the University Senate, University of Sri Jayewardenepura*
- *Master of Industrial Organic Chemistry (without research, SLQF 9).*

Course Duration: Two years

Medium of Instruction: English

Course Description:

Course Code	Course Name	Credit Value	Status (Compulsory/ Optional)
IOC100102	Advanced organic chemistry	2	compulsory
IOC100203	Separation and identification techniques of organic compounds	3	compulsory
IOC100302	Basics and Principles of industrial organic chemistry and chemical engineering	2	compulsory
IOC100402	Modern medicinal chemistry	2	compulsory
IOC100503	Applications of microbiology, protein and food chemistry for industry*	3	optional
IOC100603	Organic chemistry applications in agriculture, petroleum and textile industries*	3	optional
IOC100703	Chemistry of natural products and industrial applications	3	compulsory
IOC100802	Industrial chemical and waste management, laboratory safety, and security	2	compulsory
IOC100902	Organic chemistry in nanotechnology and polymer science interface	2	compulsory
IOC101001	Quality assurance and management	1	compulsory
IOC101102	Research methodology, scientific communications, seminars and Industrial visits	2	compulsory
IOC101204	Laboratory practical[1,4]	4	compulsory
IOC101306	Independent case study[2,4]	6	compulsory
IOC101430	Research project[3,4]	30	compulsory
	Total number of credits	**65**	

*Optional course - Students are required to obtain 3 credits from IOC100503 and IOC100603 (It is required to obtain 62 out of 65 credits to be eligible for MSc (Indus Org Chem))
[1]Laboratory practical course (IOC101204) will be carried out throughout the 1st and 2nd semesters of the first year. The final grade for this course will be awarded at the end of the second semester.
[2]IOC101306 course is offered throughout the 1st and 2nd semesters.
[3]This course is offered in the final year (3rd and 4th semesters) of the programme.
[4] Non-taught component.

Evaluation:

The candidate's performance at each course unit is assessed and graded by theory examinations / practical examinations / continuous assessments/assessment reports / oral examinations, etc. The assessment structure is modified when required, to facilitate achieving the intended learning outcomes of each course unit. When there are multiple assessment methods for a course unit, marks obtained by the candidate are combined in a pre-determined manner to obtain the final grade. All the theory courses will be evaluated based on End-Modular examinations.
It is necessary to maintain 80% or higher attendance for theory and practical sessions to become eligible to sit for the examination.
It is compulsory to finish all the practical classes within the first year of registration. Only for a valid medical reason a student may be allowed to follow practical classes with the next batch of students, an additional payment is charged in such an event.
Independent case study reports will be evaluated by two faculty members/experts in the relevant area separately and the viva will be graded by the same members in the presence of the coordinator and the supervisor/s.
The final research project report/thesis will be evaluated by two faculty members/experts in the relevant area separately and the viva will be graded by the same members in the presence of the coordinator and the supervisor/s.

Repeating the Course Units:

A candidate who is unable to sit for the course unit examination or fails a course unit or obtained lower grade than B can repeat the examination. Except for medical reasons, the maximum grade that can be obtained is B (55%). Only two attempts will be granted to repeat an examination. The non-taught component cannot be repeated under any circumstances.
If a student obtains a lower grade at a repeat attempt, the higher grade obtained at previous attempts will be used to calculate the GPA. Repeat examinations will be conducted at the same time as the next immediate MSc batch.
If a candidate wants to repeat a course unit that is not offered to the next immediate M.Sc. batch, the candidate must sit for a paper which is similar in content and credit value to the course unit that the candidate intended to repeat. In this case, the candidate must inform the coordinator before taking the exam and if necessary, prior approval must be obtained.

Submission of Research Proposal:

All the eligible students to follow the MSc program shall submit a research proposal and commence the research work at least one year prior to program-end date for the relevant student batch.

Submission of Thesis:

The thesis shall be submitted to the program coordinator for evaluation at least 06 months prior to the program end-date for the relevant student batch. The thesis has to be formatted according to the guidelines given in the Student Handbook. After the evaluation, three (03) hardbound copies of the final corrected thesis shall be submitted to the coordinator prior to the program end-date for the relevant student batch. For more information, please refer to the Student Handbook.

Awarding the Degree:

Candidates should possess a minimum GPA of 3.0 for a total of at least 62 credits worth of courses and shall maintain a minimum of C+ grade (45%) for course units except for laboratory practical course. Candidate should obtain a minimum of a B grade (55%) for the laboratory practical course, independent case study and research project.
The candidate will be awarded a Master of Science degree with Merit, upon achieving a GPA of 3.7 or above for the taught and non-taught courses together with an A grade for the research project.

Candidates should maintain a minimum GPA of 3.00 (Grade B) for theory courses excluding the laboratory Practical course of the first academic year to carry out a research project in the second year.

If a candidate fails to complete the research project within the given period or is unable to obtain a GPA of 3.0 in the first-year courses (for 32 credits including theory courses, laboratory practical and independent case study), he/she can exit the programme (if he/she wishes to do so) obtaining a Master of Industrial Organic Chemistry (see the awarding degree section under the Master of Industrial Organic Chemistry).

If a candidate is unable to complete the research project and independent case study within the given period or unable to obtain a GPA of 3.0 in the first-year courses (for 32 credits including theory courses, and laboratory practical), he/she can exit the programme (if he/she wishes to do so) obtaining a Postgraduate Diploma in Industrial Organic Chemistry (see the awarding degree section under the Postgraduate Diploma in Industrial Organic Chemistry).

Payment Plan:

Course fees can be paid in two installments, 60% of the course fee at the registration and the balance within 3 months of the first year.