



# **Master of COMPUTER SCIENCE**

**2025 INTAKE**



**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**  
**UNIVERSITY OF MORATUWA**

# Introduction

The Master of Computer Science (MCS) degree program is fully coursework-based, one-year degree which complies with the Sri Lanka Qualification Framework Level 9 (SLQF-L9), offers a platform for professionals from Engineering, Science, or relevant Technology backgrounds to upskill and sharpen their Computer Science knowledge.

## **This program is ideal for:**

Current IT professionals possessing bachelors degrees who are looking to refresh and extend their Data Science and AI knowledge.

Current 3-year (SLQF-L5) bachelors degree holders aspiring to pursue higher degrees such as research based MSc, MPhil, or PhD at Sri Lankan or foreign universities in future, to bridge the qualification gap.

Experienced IT professionals who possess professional qualifications but without a formal degree qualification to strengthen their academic profiles by earning a Masters degree qualification.

Professionals with Engineering, Science, or relevant Technology bachelors degree qualifications aspiring to switch to an IT related profession from a different career path.

## COURSE MODULES AND PROGRAM STRUCTURE

The Master of Computer Science (MCS) postgraduate degree program consists of four compulsory modules, elective modules and a compulsory capstone project.

The program is structured as a two semester (one-year) degree program with each semester consisting of 12 weeks of academic activities. Courses will be conducted online, mainly in asynchronous mode using the University of Moratuwa online learning platform ([online.mrt.ac.lk](http://online.mrt.ac.lk)). Lectures, assignments and other activities may be released in a staggered approach or in bulk within the semester. Students may use forums and join live zoom sessions to clarify any issues, as arranged by the individual module coordinators.

In a typical study program arrangement, the two semesters consist of taught course modules with a recommended workload of 12 credits per semester. Each semester will have two compulsory course modules, and it is recommended to select two more course modules per semester from the available electives. The requirements of the capstone project will be introduced during the first semester, and the students may use the remainder of the year to fulfill the requirements of the capstone project.

### Summary of Credit Requirements:

4 Compulsory Course Modules : 12 credits.

4 Elective Course Modules : 12 credits.

Capstone Project (Compulsory) : 6 Credits.

**Total credit requirement : 30 credits.**

The following are the course modules of the program:

**Semester 1: (Recommended: 4 modules \* 3 credits = 12 Credits)**

<b>Code</b>	<b>Course Module</b>	<b>Credits</b>	<b>Compulsory / Optional</b>
CS5255	Principles of Software Engineering	3	Compulsory
CS5701	Advanced Algorithms	3	Compulsory
CS5621	Machine Learning	3	Compulsory
CS5429	Distributed Computing	3	Elective
CS5243	Client-Side Application Development	3	Elective
CS5224	Advanced Databases	3	Elective
CS5202	Advanced Operating Systems	3	Elective
CS5403	Principles of Cybersecurity	3	Elective
CS5256	Information Systems Design	3	Elective
CS5242	Software Development on Cloud Platforms	3	Elective
CS5225	Parallel and Concurrent Programming	3	Elective

CS5998	Capstone Project	6	Compulsory*
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*\* The requirements of the Capstone Project will be introduced during the first semester, so that the students can get started. However the students will have time to complete the 6 credits worth of workload allocated for the capstone project during the remaining time of the 1 year period.*

**Semester 2: (Recommended: 4 modules \* 3 credits = 12 Credits)**

CS5401	System and Network Design	3	Compulsory
CS5212	Software Architecture Concepts	3	Elective
CS5430	Mobile Computing	3	Elective
CS5106	IT Project Management	3	Elective
CS5215	Enterprise Systems Architecture	3	Elective
CS5820	Machine Vision and Image Processing	3	Elective
CS5461	Network Security	3	Elective
CS5405	Performance Modeling and Analysis	3	Elective

## RESOURCE PERSONS

The Master of Computer Science postgraduate degree program is conducted by senior academics of the University of Moratuwa with research specializations in specific study areas complemented by specialists from the industry.

### **Prof. Gihan Dias**

BSc Eng Hons (Moratuwa), MSc (UCSB), PhD (UCD), MIE(SL), CEng

Professor, Dept of Computer Science and Engineering, University of Moratuwa

### **Prof. Sanath Jayasena**

BSc Eng Hons (Moratuwa), MSc (UIUC), PhD (UIUC), MIE(SL), CEng

Senior Lecturer, Dept of Computer Science and Engineering, University of Moratuwa **Prof.**

### **Indika Perera**

BSc Eng Hons (Moratuwa), MBS (Colombo), MSc (Moratuwa), PhD (St Andrews), PGDBM (Colombo), MIE (SL), CEng

Senior Lecturer, Dept of Computer Science and Engineering, University of Moratuwa

### **Prof. Chandana Gamage**

BSc Eng Hons (Moratuwa), MEng (AIT), PhD (Monash), MIE(SL), CEng

Senior Lecturer, Dept of Computer Science and Engineering, University of Moratuwa

### **Prof. Dulani Meedeniya**

BSc Hons (Peradeniya), MSc (Moratuwa), PhD (St Andrews)

Senior Lecturer, Dept of Computer Science and Engineering, University of Moratuwa

**Prof. Shantha Fernando**

BSc Eng Hons (Moratuwa), MPhil (Moratuwa), PhD (Delft), MIE(SL), MIEE (London), CEng

Senior Lecturer, Dept of Computer Science and Engineering, University of Moratuwa

**Prof. Chathura De Silva**

BSc Eng Hons (Moratuwa), MEng (NTU), PhD (NUS), MIE(SL), CEng

Senior Lecturer, Dept of Computer Science and Engineering, University of Moratuwa

**Dr. Adeesha Wijayasiri**

BSc Eng. (Hons) (Moratuwa), MSc (UFL), PhD (UFL)

Lecturer, Dept of Computer Science and Engineering, University of Moratuwa

**Dr. Charith Chitraranjan**

BSc Eng. (Hons) (Moratuwa), MSc (NDSU), PhD (NDSU)

Senior Lecturer, Dept of Computer Science and Engineering, University of Moratuwa

**Dr. Kutila Gunasekera**

BSc Eng Hons (Moratuwa), PhD (Monash)

Senior Lecturer, Dept of Computer Science and Engineering, University of Moratuwa

**Dr. Shehan Perera**

BSc Hons (Colombo), MSc (NDSU), PhD (NDSU)

Senior Lecturer, Dept of Computer Science and Engineering, University of Moratuwa



**Ms. Vishaka Nanayakkara**

BSc Eng Hons (Moratuwa), Tech Licentiate (Chalmers),

Senior Lecturer, Dept of Computer Science and Engineering, University of Moratuwa

**Dr. Uthayasanker Thayasivam**

BSc Eng Hons (Moratuwa), PhD (U. Georgia).

Senior Lecturer, Dept of Computer Science and Engineering, University of Moratuwa

**Dr. Nisansa de Silva**

BSc Eng Hons (Moratuwa), MS (UO), PhD (UO).

Senior Lecturer, Dept of Computer Science and Engineering, University of Moratuwa

**Dr. Sapumal Ahangama**

BSc Eng Hons (Moratuwa), PhD (NUS).

Senior Lecturer, Dept of Computer Science and Engineering, University of Moratuwa

**Dr. Sunimal Rathnayake**

BSc Eng Hons (Moratuwa), PhD (NUS).

Senior Lecturer, Dept. of Computer Science and Engineering, University of Moratuwa

**Dr. Buddhika Karunaratne**

BSc Eng Hons (Moratuwa), PhD (HKUST).

Senior Lecturer, Dept of Computer Science and Engineering, University of Moratuwa

**Dr. Thanuja Ambegoda**

BSc Eng Hons (Moratuwa), Dr. sc. (ETH).

Senior Lecturer, Dept of Computer Science and Engineering, University of Moratuwa

**Dr. Sandareka Wickramanayake**

PhD (NUS), BSc Eng. (Hons) (Moratuwa)

Senior Lecturer, Dept of Computer Science and Engineering, University of Moratuwa

**Dr. Chathuranga Hettiarachchi**

PhD (NTU), BSc Eng. (Hons) (Moratuwa)

Senior Lecturer, Dept of Computer Science and Engineering, University of Moratuwa

**Mr. Chamara Disanayake**

MSc (Moratuwa), BSc Eng. (Hons) (Moratuwa), MBS(Colombo), AMIE(SL)

Senior Lecturer, Department of Network and Security, Faculty of Computing, NSBM

**Dr. Srinath Perera**

BSc Eng Hons (Moratuwa), MS (Indiana), PhD (Indiana)

Vice President - Research, WSO2

# ELIGIBILITY REQUIREMENTS

The Master of Computer Science postgraduate degree program requires a prospective candidate to fulfill one of the following eligibility criteria for course enrollment.

1. The degree of Bachelor of the Science of Engineering of the University of Moratuwa in a relevant field as may be approved by the Senate;

OR

2. Any other four-year degree in Engineering or Science or Technology from a recognized university in a relevant field as may be approved by the Senate;

OR

3. Any other three-year degree in Engineering, or Science, or Technology from a recognized University in a relevant field, subject to successful performance in the aptitude test as may be approved by the Senate;

OR

4. Any recognized category of membership of a recognized Professional Institute obtained through an academic route, as may be approved by the Senate

## SELECTION PROCESS

The selection to the Master of Computer Science (MCS) postgraduate degree program is through an open competitive process. The applicant's educational qualifications, professional qualifications, commitment to advanced study, demonstrated English language skills required for preparation of study outcomes and knowledge dissemination, and references all contribute to the evaluation of a candidate. Following are the steps in the selection process:

1. Each applicant is evaluated for conformity with the applicable eligibility criteria based on the information provided with the application. Applicants may be invited to a selection test according to the requirements of the eligibility criteria.
2. The selection test will be an online test of one-hour duration. The selection test consisting of multiple-choice, short-answer and similar questions will examine analytical skills, conceptual knowledge, and topic-specific knowledge in areas such as Programming, Data Structures and Algorithms, Operating Systems, Computer Systems and Organization, Software Engineering, Software Architecture, Theory of Computing, Databases, Artificial Intelligence, Networking, Computer Security, Professional Practice, and Management Information Systems. In addition, the candidates may be required to write a short essay (250 words) on a given topic.
3. The eligible applicants will face an interview of a few minutes duration by an interview panel of senior lecturers. The interview will ascertain the applicant's suitability and competency for the study program.
4. Based on the successful completion of the above steps, each applicant will be ranked into a "Selected Candidates List" and a "Waiting List". After the

selection process, all applicants will be informed of their application status. If an applicant from the Selected Candidates List fails to enroll in the program within the stipulated period, that opportunity will be afforded to an applicant from the Waiting List.

## **COURSE FEE AND PAYMENT STRUCTURE**

The total fee for the course is Rs. 454,500/-, which includes a registration fee of Rs.50,000/- and a course fee of Rs.404,500/-. It can be paid according to either plan A or B as shown below.

### Plan A

- Course registration fee - Rs. 50,000/- (by 23<sup>rd</sup> December 2024)
- Full course fee - Rs. 404,500/- (by 1<sup>st</sup> January 2025)

OR

### Plan B

- Course registration fee - Rs. 50,000/- (by 23<sup>rd</sup> December 2024)
- First installment – Rs. 204,500/- (by 1<sup>st</sup> January 2025)
- Second installment – Rs. 200,000/- (by 02<sup>nd</sup> June 2025)

Above fees include Annual Academic Registration Fees, Semester Examination Fees, and a Library Deposit of Rs. 2,500/-. In the case of change of government taxes, the student will have to incur the additional tax amount.

## HOW TO APPLY

1. Pay the application-processing fee.

The application processing fee of Rs. 2,000/- may be paid either to University Shroff (weekdays from 9.00 AM to 12.30 PM and 1.30 PM to 3.00 PM) or as a pay-in voucher of Rs. 2,000/- obtainable at any Bank of Ceylon branch by paying Rs. 2,000/- to the credit of “University of Moratuwa – A/C No. 306836”. You may also make an online transfer to the same account. Please indicate the course as “MCS 2025” and your NIC number on the deposit slip or online transfer form (in case the online form does not allow all of this, please indicate your NIC).

2. Fill up the online application form at <http://postgrad.cse.mrt.ac.lk>, submit and print the completed application.

You need to attach all documents indicated in the application form and submit by the application deadline. The copies of the degree certificate and the academic transcript you upload must be certified with digital signatures by you and your employer. The digital signature should be a certificate-based Digital ID, obtained either from a cloud-based trust service provider, or from the signer's local system.

More information on the required type of digital signature can be found [here](#). Once submitted you will receive a PDF of the filled application as a record.

3. Arrange for Letters of Recommendation.

You are required to provide two (02) Letters of Recommendation.

Ensure that your [reference forms](#) are sent (emailed) to the relevant referees. Request the recommender to use the same e-mail address that you used

while filling up the application, and request the recommender to use the official e-mail address whenever possible.

Once the referees have completed the reference form, they can submit it online. The recommender will receive a confirmation e-mail with an attached PDF as a record. You will also receive a notification to the provided e-mail address.

4. Once your application is processed, you will be notified via e-mail whether you are invited for writing and selection tests and interviews or not. You may also receive e-mail notifications if the selection committee has any queries about your application.

If you are invited to the selection test (usually will be informed within 1 week from the application deadline), prepare the following application pack and have it ready at the selection test:

- A printed copy of the completed and signed “Application Form”
- Your National Identity Card (NIC), Driving License, or Passport
- Original certificates and copies of academic/professional qualifications, membership of professional institutes, etc.
- Updated “Curriculum Vitae” of the applicant
- Completed “Letter of Consent Form” from the employer (if applicable)
- Letter of sponsorship (if applicable)
- Copy of the application processing fee receipt

**postgrad.cse.mrt.ac.lk**