

**DEGREE OF MASTER OF COMPUTER SCIENCE/
POSTGRADUATE DIPLOMA IN COMPUTER SCIENCE**

By-Laws made by the Council of the University of Colombo under Section 135 of the Universities Act No. 16 of 1978 as amended and read with the University of Colombo School of Computing Ordinance No. 01 of 2002.

By-Laws

These By-Laws may be cited as the Master of Computer Science By-Laws No

Part I- General

Award of Degree/Postgraduate Diploma

1. Subject to these By-Laws, a student may be awarded the Degree of Master of Computer Science or the Postgraduate Diploma in Computer Science as the case may be, if he has -
 - (a) been a registered student of the University of Colombo School of Computing (hereinafter referred to as the School) for the period prescribed by these By-Laws;
 - (b) thereafter completed, to the satisfaction of the Vice-Chancellor, the Programme of Study, as prescribed by these By-Laws, and/or other Regulations and/or Rules of the University and/or School;
 - (c) satisfied the Board of Examiners in the different forms of Examinations and Assessments including written examinations, practical examinations, oral examinations, assignments, seminars, group projects, individual projects, research projects, dissertations, oral defense of dissertations etc., as may be prescribed by these By-Laws and/or any other By-Laws, and/or Regulations and/or Rules of the University and/or School;
 - (d) paid the library deposit and all the prescribed fees including registration fee, course fee, supervision fee, examination fee and all other dues as may be payable to the School; and
 - (e) fulfilled all other requirements prescribed by these By-Laws and /or other relevant Regulations and/or Rules of the University and/or School.

Administration of the Programme

2. The School shall be in charge of the administration and general direction of the Degree/Postgraduate Diploma Programme.

Eligibility for Admission to the Programme

3. No person shall be eligible to be admitted to the Programme leading to the award of the Degree of Master of Computer Science/Postgraduate Diploma in Computer Science unless he/she satisfies the minimum requirements specified in the following paragraph :
He possesses -
 - (i) A Degree in Computer Science or Information Technology from a recognized University ; or
 - (ii) Any other academic or professional qualification, which is deemed equivalent to a Degree in Computer Science or Information Technology by the Senate of the University of Colombo on the recommendation of the School. Each application under this category shall be considered on a case-by-case basis.

Application for Admission to the Programme.

4. (a) Applications for admission of students to the Programme shall be called by open advertisement published *by the Registrar under the authority of the School* and shall, in the first instance, be for the Degree Programme.
- (b) Prospective applicants may be required to pay to the School the application fee, the application processing fee, selection test fee, the selection interview fee and any other fees as shall be prescribed by Regulations and/or Rules of the University and/or School.

Registration for the Degree Programme.

5. A person whose application for admission to the Programme is accepted by the School shall take steps to register for the Degree Programme not later than the prescribed date and shall pay to the School, the library deposit and/or other deposits and the prescribed fees including the registration fee, course fee, supervision fee, examination fees and other fees as specified by the Council on the recommendation of the School.
6. (a) On completion of the registration procedure, an applicant shall be registered as a student of the Degree Programme.
- (b) Such registration shall be valid from the first day of the relevant Semester reckoned to be the First Semester until one day prior to the beginning of the Fifth Semester.

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- (c) It shall be the duty of a student to ensure that his registration remains in force throughout the duration of the Programme, in the event that the Programme extends beyond the period of validity of the registration.
7. The registration shall be deemed to have lapsed at the end of its period of validity. A student whose registration has so lapsed may renew such registration for a further period by paying the prescribed fees as specified in the Regulations and/or Rules relevant to these By-Laws provided that he is still eligible to be registered for the Programme. However, such registration shall not remain in force beyond the day prior to the beginning of the Ninth Semester.
8. No person shall be entitled to a refund of any fees paid to the School on any ground whatsoever, except in the case that the number of students who have so registered for the Programme is not sufficient for the Programme to be financially viable, the School shall refund to such student the fees already received by it on account of the completion of the registration procedure.
9. A student wishing to be admitted to the Programme for a second time may, at the discretion of the Senate, be permitted to do so if the School offers the Programme in the relevant Semester. Such person shall pay to the School, the fees payable to the School as prescribed in respect of registration relevant to that Semester.
10. (a) Any student who is registered for the Degree Programme may, at any time after the registration procedure has been given effect to, but prior to the release of his results at the Examination leading to the award of the Degree, make a written application to the School requesting that he be considered for the award of the Postgraduate Diploma in Computer Science instead of the Degree of Master of Computer Science for which he is registered.
- (b) The School shall have the discretion to accede to or refuse such request. If such request is granted, the School shall consider him to be a student who has registered for the Postgraduate Diploma Programme notwithstanding the fact that he has initially been registered for the Degree Programme in accordance with provisions of Section 4, and his registration for the Degree Programme will cease thereafter.
- (c) However, there shall not be any fees payable to the School on account of the change in the Programme, and the School shall not refund any fees either on account of such change.

PART II-COURSE STRUCTURE

11. The Courses leading to the award of the Degree shall extend over four Semesters of the Programme covering Theory and Practical components, as well as Continuous Assessments. The third and fourth Semesters include an approved individual or group project and writing a dissertation on it in addition to some course units. The Programme shall extend over the period continuously from the beginning of the First Semester of registration until the day prior to the beginning of the Fifth Semester and shall include the intervening periods of vacation, study leave and periods set apart for

written examinations, provided that the total duration shall not extend beyond the period of validity of the registration.

12. The duration of each Semester shall, under normal circumstances, be a continuous period of 15 weeks from its beginning. However, under exceptional circumstances, the School may declare any Semester to have a different duration and, if necessary, formulate Regulations and/or Rules for its implementation.
13. The Programme shall be considered equivalent to a fulltime Programme in respect of the course content, assignments, individual or group project, practicals etc., covered within the period prescribed in Section 12 notwithstanding the fact that the courses are conducted during weekends and/or after normal working hours of the University.
14. The Programme shall comprise the course work consisting of the Theory and Practical components, the Individual or Group Project and writing a Dissertation on it, its defense and all examinations prescribed by these By-Laws and/or Regulations and/or Rules relevant to this Programme.
15. The course work relevant to the Programme shall consist of lectures, tutorials, practical classes and other assignments on courses/subjects, as shall be prescribed by the Senate on the recommendation of the School. The list of courses/subjects, the syllabuses and the number of question papers in each course/subject of the Programme shall be those set out under Regulations passed by the Senate from time to time.
16. The Senate shall have the power to change, amend, add or delete courses/subjects, their syllabuses as well as the number, structure and rubric of question papers in courses/subjects leading to the award of the Degree.
17. The Individual or Group *Project* and Dissertation component in the third and fourth Semesters of the Programme shall consist of study towards the preparation and submission of a dissertation based on an approved Project. Before a student commences his study on an Individual or Group Project, he shall submit the proposal for the Individual or Group Project to the School for approval. A student shall not proceed with the study towards the preparation of the dissertation until the School approves the proposal.

PART III-EXAMINATIONS

18. The Examination leading to the award of the Degree shall consist of all four Semester Examinations, and the Oral Examination for the defense of the student's Dissertation. Each Semester Examination shall consist of one or more than one written paper and such number of continuous assessments as are prescribed by the Regulations and/or Rules relevant to this Programme.
19. The Dissertation shall demonstrate the candidate's knowledge of the methods of study, his competence to present material systematically and his ability to analyse and interpret results/data, as are generally applicable to a Master of Science Degree of the University and in particular, to such a Degree in Computer Science.
20. (a) Each student who is registered for the Programme shall make an application in the form provided by the School for entry to the relevant Examination.
 - (b) No application for an Examination made by any student shall be entertained by the School unless the Director of the School has certified that the student took part in the different forms of instruction provided for each subject in the Semester.
 - (c) A student in a particular Semester of the Degree Programme shall take the Examination for that Semester on the first occasion on which the Examination is held after the completion of instruction for that Semester.
 - (d) Where a student does not apply for and/or take the Examination on the first occasion he/she shall be deemed, unless the Senate determines otherwise on the recommendation of the School, to have taken the Examination on that occasion which shall be taken into account in computing the total number of occasions on which an Examination may be taken by a student.
 - (e) A student who is excused by the Senate on the recommendation of the School from taking the Examination on the first occasion shall take the Examination on the very next occasion when it is held and if he/she fails to apply for and/or take the Examination on that occasion he/she shall be deemed, unless the Senate determines otherwise on the recommendation of the School, to have taken the Examination on that occasion which shall be taken into account in computing the total number of occasions on which an Examination may be taken by a student.
 - (f) A student shall not take any of the Examination on more than two occasions and in computing the total number of occasions there shall be taken into account any occasion on which he/she is deemed to have taken the Examination in terms of these By-laws.
 - (g) A student who fails an Examination, does not take an Examination or is deemed to have taken an Examination shall not be allowed to follow the course instruction except where the Senate, on the recommendation of the School, for some specified reason gives him/her permission to do so.

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21. (a) A student in a particular Semester of the Degree Programme shall undertake work related to Continuous Assessment for that Semester on the first occasion when it is set for the Semester.
- (b) Where a student does not undertake such work and/or fails to complete such work on the first occasion he/she shall be deemed, unless the Senate determines otherwise on the recommendation of the School, to have undertaken the work for the Continuous Assessment.
- (c) A student who does not undertake work related to Continuous Assessment for a Semester and/or fails to complete such work and/or fails in the Continuous Assessment, he/she may be given an opportunity to do the Continuous Assessment in the following Semester. He/She shall not be permitted to attend lectures in the following Semester except where the Senate on the recommendation of the School permits him/her to do so on payment of fees where prescribed.
22. No student shall be permitted to proceed with the Individual or Group Project and the Dissertation component of the Programme unless he has completed the First Semester Examination and the Second Semester Examination to the satisfaction of the Board of Examiners.
23. A student who is unable to defend his Dissertation to the satisfaction of the Board of Examiners shall be deemed to have failed the Examination and such student cannot resubmit the Dissertation unless, the relevant Examiners recommend that a Modified Dissertation be submitted after or without additional work. Such a Modified Dissertation, if undertaken, shall be at the expense of the student.
24. A student who is permitted to submit a Modified Dissertation shall submit such Modified Dissertation to the School within the period specified by the Board of Examiners, and shall pay to the School, such fees as would be required for the purpose of re-examination of the Dissertation and as specified by the Council on the recommendation of the School.
25. It shall be lawful for the School to terminate the registration of any student after one warning in writing, if the application to work by such student is unsatisfactory. No refund of any fees shall be payable if and when the registration of such a student is terminated.
26. (a) A student who obtains a mark of less than the pass mark, as prescribed under the Regulations, for a paper in any Semester Examination, shall re-sit such paper as a repeat candidate in the next available opportunity. Such student shall not be entitled to attend any lectures, practicals or laboratory work unless the Senate on the recommendation of the School decides to permit him. Only one repeat attempt is permitted.
- (b) If such a student makes use of the opportunity to re-sit any such paper as a repeat candidate, the higher mark of the first attempt and the repeat attempt shall be taken into consideration for the computation of results of the Degree Examination.

PART IV-INTERPRETATION

27. In these By-Laws as well as in its Part IV, unless the context requires otherwise:

"The Act" means the Universities Act No. 16 of 1978 as last amended by Universities (Amendment) Act No. 1 of 1995.

"Council" means the Council of the University of Colombo.

"Senate" means the Senate of the University of Colombo.

"University" means University of Colombo

"Registrar" means the Registrar, Acting Registrar, Deputy Registrar, Senior Assistant Registrar, Assistant Registrar or any other Officer authorized to sign for and on behalf of the Registrar of the University of Colombo School of Computing.

"Director" means the Director, Deputy Director or any other Officer authorized to sign for and on behalf of the Director of the University of Colombo School of Computing.

"School" means the University of Colombo School of Computing established by Order made under Section 24A read with Section 18 of the Act.

"Programme" means the Programme of study leading to the award of the Degree of Master of Computer Science/Postgraduate Diploma in Computer Science.

"Diploma" means the Postgraduate Diploma in Computer Science.

"Degree" means the Degree of Master of Computer Science.

"Degree Programme" means the Programme of study leading to the award of the Degree.

"Diploma Programme" means the Programme of study leading to the award of the Diploma.

28. Any question regarding the interpretation of these By-Laws shall be referred to the Council whose decision thereon shall be final.

29. The Vice-Chancellor shall have authority, in consultation with the Director to take such action or give such direction not consistent with the principles underlying the provisions of these By-Laws, as appears to him/her to be necessary or expedient for the purpose of removing any difficulties that may arise in the interpretation of these provisions or for which there is no provision in these By-Laws or in the case of students who had followed or have been following the Degree Programme under the existing arrangements approved by the senate and the Council.

DEGREE OF MASTER OF COMPUTER SCIENCE/ POSTGRADUATE DIPLOMA IN COMPUTER SCIENCE

Regulations made by the Senate of the University of Colombo under Section 136 of the Universities Act No. 16 of 1978 as amended and read with the University of Colombo School of Computing Ordinance No. 01 of 2002.

Regulations

These Regulations may be cited as the Degree of Master of Computer Science/Postgraduate Diploma in Computer Science Regulations No.....

Master of Computer Science/ Postgraduate Diploma in Computer Science Programme

Part A

1. The programme has a number of courses and each course carry a specified number of credits. One credit is equivalent to 15 hours of teaching learning activities.
2. In the First Semester of the Programme of Study :
 - (a) The following 4 core courses shall be offered :

Course	Credits
MCS1010 - Advanced Algorithms	3
MCS1020 - Advanced Software Engineering	3
MCS1030 - Advanced Database Systems	3
MCS1040 - Advanced Concepts in Data Communication Networks	3

- (b) Each student shall submit Assignments as part of Continuous Assessment set by the School.

3. In the Second Semester of the Programme of Study:
 - (a) The following 4 core courses shall be offered :

Course	Credits
MCS2010 - Theory of Programming Languages	3
MCS2020 - Cryptographic Systems	3
MCS2030 - Enterprise Web Architectures	3
MCS2040 - Data and Knowledge Engineering	3

(b) Each student shall submit Assignments as part of Continuous Assessment set by the School.

4. In the Third Semester of the Programme of Study:

(a) The following 2 compulsory courses shall be offered :

Course	Credits
MCS3010 - Project Management and Professional Issues in ICT	2
MCS3020 - Individual or Group Project	10 - Individual Project 4 - Group Project

(b) Each student should select at least two courses from the following

- MCS3030 - Advanced Computer Graphics and Vision
- MCS3040 - Natural Algorithms
- MCS3050 - Distributed Systems
- MCS3060 - Computational Pattern Recognition
- MCS3070 - Research Methodology
- MCS3080 - Software Quality Assurance
- MCS3090 - Human Computer Interaction
- MCS3100 - Concurrent Programming

The number of credits of each of these courses are determined and approved by the Board of Study of Research and Higher Degrees of the School and by the Academic Syndicate of the School before the commencement of the semester.

(c) Each student can obtain credits by conducting seminars of one hour duration to undergraduate students. The approval for the Seminar topic should be obtained from the school prior to the conduct of the Seminar. Each seminar shall carry one credit. Maximum of three such seminars can be conducted by a student. These seminars will be evaluated by a panel of staff of the school and Grades will be allocated.

(c) Each student should select either an Individual Project or Group Project after obtaining the approval of the school.

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- (d) Each student who undertake an Individual Project should submit an Interim Report at the end of the third semester which will be evaluated and assign a Grade. An oral examination on this Interim Report will be held.
- (e) The student group who undertake a Group Project should submit an Interim Report at the end of the third semester which will be evaluated and assign a Grade. An oral examination on this Interim Report will be held.
- 5 In the Fourth Semester of the Programme of Study:
- (a) The following compulsory course shall be offered :

Course
MCS3020 - Continuation of the Individual or the Group Project of the Third Semester

- (b) Each student should select at least two courses from the following

- MCS4010 - Natural Language Processing
- MCS4020 - e-Learning Concepts and Technology
- MCS4030 - Wireless Ad-Hoc and Sensor Networks
- MCS4040 - High Performance Computing
- MCS4050 - Theory of Computing
- MCS4060 - Mobile Computing
- MCS4070 - Philosophy of Science
- MCS4080 - Formal Methods and Software Verification

The number of credits of each of these courses are determined and approved by the Board of Study of Research and Higher Degrees of the School and by the Academic Syndicate of the School before the commencement of the semester.

- (c) Each student should select either an Individual Project or Group Project after obtaining the approval of the school.
- (d) Each student who undertake an Individual Project should submit a Dissertation at the end of the fourth Semester. An oral examination on this Dissertation will be held.
- (e) The student group who undertake a Group Project should submit a Dissertation at the end of the fourth Semester. An oral examination on this Dissertation will be held.
- (f) Each student can obtain credits by publishing their research work in an approved International or National Conference. An international conference publication shall carry 2 credits and national conference publication shall carry one credit.

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Maximum of three such publications are considered for the course evaluation. The grades for such publications shall be given by a panel of staff of the school.

6. By the end of the Third Semester, each student will be required to complete his Dissertation on the Approved Research Project and submit it to the School within the specified period. However it shall not be submitted unless the Supervisor has certified that such Dissertation merits being considered at an Oral Examination of the student for the award of the Degree. The student shall also ensure that the Dissertation fits in to the prescribed format.

Part B Examinations

7. The evaluation criteria for each of the courses in all four Semesters will be determined and approved by the Board of Study of Research and Higher Degrees of the School and by the Academic Syndicate of the School before the commencement of the Semester. A mark out of 100 will be given to each course.

The evaluation of the individual or project will carry a mark out of 100 for each student.

Part C Grading System and Calculation of Grade Point Average (GPA)

9. Each course is evaluated using the following grading system

Range of Marks	Grade	Grade Point Value
90-100	A+	4.25
80-89	A	4.00
75-79	A-	3.75
70-74	B+	3.25
65-69	B	3.00
60-64	B-	2.75
55-59	C+	2.25
50-54	C	2.00
45-49	C-	1.75
40-44	D+	1.25
30-39	D	1.00
20-29	D-	0.75

00-19	E	0.00
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The Grade Point Average (GPA) is calculated as

$$\text{GPA} = \frac{\sum C_i G_i}{\sum C_i}$$

Where C_i = number of credits for course i

G_i = GPV for course i

The best minimum set of courses that exceeds or add up to 50 credits are considered for the calculation of GPA.

Part D Passes at Examinations

10. A student shall be deemed to have passed a course if he has obtained a C grade for the course.
11. A student shall be deemed to have passed the Oral Examination for the defense of the Dissertation if he satisfies the Board of Examiners as regards the requirements of Section 19 of the By-Laws and/or Sections 23 and 24 of the By-Laws if applicable.

Part E Award of the Degree/ Postgraduate Diploma

12. A Student who has satisfied the following conditions shall be deemed to have qualify to obtain the Degree of Master of Computer Science
 - (i) Has obtained a minimum of 50 credits.
 - (ii) Has obtained a minimum of 2.0 of GPA.
 - (iii) Has obtained a pass for the individual or group project.

A student who has obtained minimum of 3.25 GPA shall be Awarded a Distinction Pass.

13. A student who satisfies the following conditions shall be deemed to have qualify to obtain the Postgraduate Diploma in Computer Science.

- (i) Has obtained a minimum of 24 credits.
- (ii) Has obtained a minimum of 2.0 of GPA. (The best minimum set of courses that exceeds or add up to 24 credits are considered for the calculation of GPA)

A student can opt to obtain the Postgraduate Diploma in Computer Science after obtaining minimum of 24 credits.

A student who satisfies the requirement in (12) will not be eligible to obtain the Postgraduate Diploma in Computer Science.

- 14. A student who has satisfied the condition given in Section (12) shall be entitled to the award of the Degree of Master of Computer Science if he has satisfied all the other requirements of the relevant By-Laws.
- 15. A student who has satisfied the condition given in Section (13) shall be entitled to the award of the Postgraduate Diploma in Computer Science if he has satisfied all the other requirements of the relevant By-Laws
- 16. A student who exercises the option given to him by Section 10 of the By-Laws shall be entitled to the award of the Postgraduate Diploma in Computer Science if he has satisfied the condition given in Section (13) and has satisfied all the other requirements of the relevant By-Laws.