

# THE UNIVERSITY OF BURDWAN

## DEPARTMENT OF COMPUTER SCIENCE

### SYLLABUS FOR M. Sc. (COMPUTER SCIENCE) COURSE

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**1) Duration** : Two Years (Four Semesters)

**2) Total Marks** : 1200 (300 + 300 + 300 +300)

**3) Total Credit Points** : 96 (24 + 24 + 24 + 24)

**4) Number of Papers** : Total Twenty Five, out of which, fourteen are Theoretical, eight Practical, One Term Paper, One Project Work and One Social Outreach Programm.

**5) Distribution of Marks** : All Theoretical and Practical papers are of full marks 50, out of which, 40 marks for University Exam. & 10 marks for Sessional. Sessional marks of theoretical papers will come from two mid – term examinations of 10 marks each. For Term Paper 50 marks will be of University Exam. For Project Work paper full marks is 50, out of which, 25 (20 for University Exam and 5 for Sessional marks) marks for social outreach program will be of University exam.

**6) Duration of Univ. Exam** : Two Hours for Theoretical Papers and three Hours for Practical Papers.

**7) Instruction Period** : In L-T-P pattern, ‘L’ lectures, ‘T’ tutorials, and, ‘2xP’ practical hours per week are needed for each paper. Unless otherwise specified, credit point of a paper will be: L + T + P. At least 50 hours are needed for each theory and practical paper. Two hours per week will be given for remedial purpose.

**8) Semester Duration** : 16 Weeks.

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### Semester – III

<b>Courses</b>	<b>(L-T-P) Credits</b>
MSCS-301: Compiler Design	(4-0-0) 4
MSCS-302: Discipline-centric Elective (E1)	(3-1-0) 4
MSCS-303: Term Paper: Minor Project	(4-0-0) 4
MSCS -304: Generic Elective (GE) Or MSWM-304	(2-0-0) 2
MSCS-305: Lab V (Compiler Design)	(0-0-4) 4
MSCS-306: Lab VI (Discipline-centric Elective : E1)	(0-0-4) 4
<b>MSCS-307: Community Engagement Activities</b>	<b>(0-0-0) 2</b>

**Semester Credits** **24**

#### **MSCS-302-Discipline-centric Elective (E1)**

- A: Machine Learning
- B: Cryptography and Network Security
- C: Software Project Management
- D: Data Mining
- E: Object Technology using JAVA
- F: Soft Computing
- G: Theory of Computing
- H: May be opted from SWAYAM

#### **MSCS-304-Generic Elective**

- A: Internet and E-Commerce
- B: Web Security
- C: Introduction to Artificial Intelligence
- D: Cryptography
- E: Introduction to Programming  
Or  
F: MSWM-304 - May be opted from SWAYAM

## Semester – IV

<b>Courses</b>	<b>(L-T-P) Credits</b>
MSCS-401: Discipline-centric Elective (E2)	(4-0-0) 4
MSCS-402: Discipline-centric Elective (E3)	(4-0-0) 4
<b>MSCS-403: Major Project</b>	<b>(4-0-0) 4</b>
MSCS-404: Seminar and Grand Viva	(0-0-4) 4
MSCS-405: DE Lab VII(E2)	(0-0-4) 4
MSCS-406: DE Lab VIII(E3)	(0-0-4) 4
<b>Semester Credits</b>	<b>24</b>
<b>Cumulative Credits</b>	<b>96</b>

### **Discipline-centric Elective (E2)**

- A: Operation Research and Optimization
- B: Model Checking
- C: Bioinformatics
- D: Internet of Things
- E: Data Science
- F: Deep Learning and NLP

### **Discipline-centric Elective (E3)**

- A: Mobile Computing
- B: Computer Graphics & Multimedia
- C: Real time system
- D: Image Processing
- E: Block Chain Technology
- F: Web Technology