Jagannath University

Faculty of Science

Department of Computer Science & Engineering

Syllabus

Program: B.Sc. in Computer Science & Engineering

(8 Semesters)
Session: 2019-2020

(11th Batch)

Jagannath University

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Preamble:

The ever-increasing needs and application of computers in almost every walk of life need not be overemphasized. The situation in developing countries as compared to the developed ones is no different. Computers now-a-days are being widely used in all fields conceivable. To keep pace with this advancement in Computer Science and Engineering, it is essential that efforts are made both in the public and private sectors to develop human resources in this particular field.

Opportunities to pursue academic programs in Computer Science and Engineering are not rather limited in Bangladesh. The prime objective of establishing the Department of Computer Science and Engineering of this university is to make a concerned effort towards achieving the goal of providing quality education. Distinguished faculty members from home & abroad are working in this department.

Courses leading to the Degree of Bachelor of Science in Computer Science & Engineering will extend over four academic years and will be divided into 8 (Eight) semesters conforming to the University Rules and Regulations. The course of study shall be an integrated one carrying a total of **160 Credits (5750 Marks).** All the courses are compulsory for each student.

Semester	Total Marks	Total Credits
1st Year 1st Semester	700	20.50
1st Year 2nd Semester	750	21.50
2nd Year 1st Semester	750	21.50
2nd Year 2nd Semester	700	19.50
3rd Year 1st Semester	700	19.50
3rd Year 2nd Semester	700	18.50
4th Year 1st Semester	750	20.00
4th Year 2nd Semester	700	19.00
Total	**5750**	**160**

Number of each theoretical course will be divided as follows:

Particulars	Marks(%)
Final Examination	70%
Continuous Assessment	30% (Mid-term examinations(minimum two)carry 10% Marks and Class Attendance carry 10% marks)

Number of each Practical course will be divided as follows:

Particulars	Marks(%)
Final Examination	70%
Continuous Assessment	30% (Mid-term examinations/ Practical Sheet carry 20% Marks and Class Attendance carry 10% marks)

Examinations of the theoretical courses will be 3 (Three) Hours for 3 credits and 2 Hours duration for 2 Credits and duration of each practical examination will be 3 (Three) Hours as per for each credit point as per the decision of the Academic Committee of the Department.

Evaluation:

Final Examination (Theory, 2 hours, 2 credits): 35 Marks. Seven questions will be set, of which five are to be answered.

Final Examination (Theory, 3 hours, 3 credits): 70 Marks. Eight questions will be set, of which five are to be answered.

Course Curriculum Plan
B.Sc in Computer Science & Engineering

Jagannath University Dept. of Computer Science & Engineering Syllabus for B.Sc. in CSE Session: 2019-2020

1st Year 1st Semester

Course code	Course Title	Major/Non-Major	Marks	Credit
CSE-1101	Structured Programming Language	Major	100	3
CSEL-1102	Structured Programming Language Lab	Major	50	1.5
CSER-1103	Math-I (Calculus)	Non-Major	100	3
CSER-1104	Physics	Non-Major	100	3
CSE-1106	Electrical Circuit Analysis	Major	100	3
CSEL-1107	Electrical Circuit Analysis Lab	Major	50	1
CSER-1108	English	Non-Major	100	3
CSER-1109	History of the Liberation War of Bangladesh	Non-Major	100	3
			700	**20.5**

1st Year 2nd Semester

Course code	Course Title	Major/Non-Major	Marks	Credit
CSE-1201	Object Oriented Programming-I	Major	100	3
CSEL-1202	Object Oriented Programming-I Lab	Major	50	1.5
CSE-1203	Data structure	Major	100	3
CSEL-1204	Data structure Lab	Major	50	1
CSER-1205	Basic Electronics	Major	100	3
CSEL-1206	Basic Electronics Lab	Major	50	1
CSER-1207	Math- II (Linear Algebra)	Non-Major	100	3
CSE-1208	Discrete Mathematics	Major	100	3
CSER-1209	Economics	Non-Major	50	2
CSEV-1210	Viva-Voce	Major	50	1
			750	**21.5**

2nd Year 1st Semester

Course Code	Course Title	Major/Non-Major	Marks	Credit
CSE-2101	Object Oriented Programming-II	Major	100	3
CSEL-2102	Object Oriented Programming-II Lab	Major	50	1.5
CSE-2103	Digital Logic Design	Major	100	3
CSEL-2104	Digital Logic Design Lab	Major	50	1
CSER-2105	Math- III (Ordinary differential Equation)	Non-Major	100	3
CSER-2106	Introduction to Statistic and Probability	Non-Major	100	3
CSE-2107	Data Communication	Major	100	3
CSEL-2108	Data Communication Lab	Major	50	1
CSER-2109	Financial and Managerial Accounting	Non-Major	100	3
			750	**21.5**

2nd Year 2nd Semester

Course Code	Course Title	Major/Non-Major	Marks	Credit
CSE-2201	Computer Architecture	Major	100	3
CSE-2202	Computer Architecture Lab	Major	50	1
CSE-2203	Database Management System	Major	100	3
CSEL-2204	Database Management System Lab	Major	50	1
CSER-2205	Math-IV (Complex Variable, Fourier and Laplace Transform)	Non-Major	100	3
CSER-2206	Numerical Analysis	Non-Major	50	2
CSEL-2207	Numerical Analysis Lab	Non-Major	50	1
CSE-2208	Design and Analysis of Algorithm	Major	100	3
CSEL-2209	Design and Analysis of Algorithm Lab	Major	50	1.5
CSEV-2210	Viva-Voce	Major	50	1
			700	**19.5**

3rd Year 1st Semester

Course Code	Course Title	Major/Non-Major	Marks	Credit
CSE-3101	Theory of Computation	Major	100	3
CSE-3102	Mathematical Analysis for Computer Science	Major	100	3
CSE-3103	Operating Systems	Major	100	3
CSEL-3104	Operating Systems Lab	Major	50	1
CSE-3105	Microprocessor and Assembly Language	Major	100	3
CSEL-3106	Microprocessor and Assembly Language Lab	Major	50	1
CSE-3107	Computer Networks	Major	100	3
CSEL-3108	Computer Networks Lab	Major	50	1.5
CSEP-3109	Internet and Web Programming (Project)	Major	50	1
			700	**19.5**

3rd Year 2nd Semester

Course Code	Course Title	Major/Non-Major	Marks	Credit
CSE-3201	Compiler Design and Construction	Major	100	3
CSEL-3202	Compiler Design and Construction Lab	Major	50	1
CSE-3203	Digital Signal Processing	Major	100	3
CSEL-3204	Digital Signal Processing Lab	Major	50	1
CSE-3205	Software Engineering	Major	100	3
CSEL-3206	Software Engineering Lab	Major	50	1
CSE-3207	Computer Peripherals and Interfacing	Major	100	3
CSEL-3208	Computer Peripherals and Interfacing Lab	Major	50	1
CSEP-3209	Application Design and Development (Project)	Major	50	1.5
CSEV-3210	Viva-Voce		50	1
			700	**18.5**

4th Year 1st Semester

Course Code	Course Title	Major/Non-Major	Marks	Credit
CSE-4101	Artificial Intelligence	Major	100	3
CSEL-4102	Artificial Intelligence Lab	Major	50	1
CSE-4103	Digital Image Processing	Major	100	3
CSEL-4104	Digital Image Processing Lab	Major	50	1
CSE-4105	Computer Graphics and Animation	Major	100	3
CSEL-4106	Computer Graphics and Animation Lab	Major	50	1
CSE-4107	Data Mining and Data Warehousing	Major	100	3
CSEL-4108	Data Mining and Data Warehousing Lab	Major	50	1
CSE-4109	Cryptography and Information Security	Major	100	3
CSEL-4110	Cryptography and Information Security Lab	Major	50	1
			750	**20**

4th Year 2nd Semester

Course Code	Course Title	Major/Non-Major	Marks	Credit
CSET- 4201	**Thesis**	Major	200	6
CSEP- 4201	**Project**	Major	200	6
CSE-42**	Option-I	Major	100	3
CSEL-42**	Option-I Lab	Major	50	1
CSE-42**	Option-II	Major	100	3
CSEL-42**	Option-II Lab	Major	50	1
CSE-42**	Option-III	Major	100	3
CSEL-42**	Option-III Lab	Major	50	1
CSEV-4235	Viva-Voce	Major	50	1
			700	**19**

Total Marks: 5750	**Total Credit**	**160**

Optional Subjects

Course	Course Title	Marks	Credits

Code			
CSE-4203	Simulation & Modeling	100	3.00
CSEL-4204	Simulation & Modeling Lab	50	1.00
CSE-4205	Distributed Systems	100	3.00
CSEL-4206	Distributed Systems Lab	50	1.00
CSE-4207	Network Routing and Switching	100	3.00
CSEL-4208	Network Routing and Switching Lab	50	1.00
CSE-4209	System Programming	100	3.00
CSEL-4210	System Programming Lab	50	1.00
CSE-4211	Distributed Database System	100	3.00
CSEL-4212	Distributed Database System Lab	50	1.00
CSE-4213	Neural Network & Fuzzy System	100	3.00
CSEL-4214	Neural Network & Fuzzy System Lab	50	1.00
CSE-4215	Digital System Design	100	3.00
CSEL-4216	Digital System Design Lab	50	1.00
CSE-4217	Digital Electronics and pulse techniques	100	3.00
CSEL-4218	Digital Electronics and pulse techniques Lab	50	1.00
CSE-4219	Digital Forensics and Investigation	100	3.00
CSEL-4220	Digital Forensics and Investigation Lab	50	1.00
CSE-4221	Natural Language Processing	100	3.00
CSEL-4222	Natural Language Processing Lab	50	1.00
CSE-4223	System Analysis and Design	100	3.00
CSEL-4224	System Analysis and Design Lab	50	1.00
CSE-4225	VLSI Design	100	3.00
CSEL-4226	VLSI Design Lab	50	1.00
CSE-4227	Pattern Recognition	100	3.00
CSEL-4228	Pattern Recognition Lab	50	1.00
CSE-4229	Cloud Computing	100	3.00
CSEL-4230	Cloud Computing Lab	50	1.00
CSE-4231	Network Programming	100	3.00
CSEL-4232	Network Programming Lab	50	1.00
CSE-4233	Image and Video Quality Assurance	100	3.00
CSEL-4234	Image and Video Quality Assurance Lab	50	1.00