

Department of Computer Science and Engineering

Computer Science and Engineering Program Curriculum for B.Sc. in Computer Science and Engineering (Proposed)

Summary of Courses

(To be effective from Spring-2022 semester)

Types of Courses	No. of Courses	Credit Hours	Remarks
Language Courses	2T	04	T – Theory L – Laboratory/ Sessional P – Project
General Education Courses	10T+1L	21+02	
Basic Science Courses	3T+1L	8.5	
Mathematics Courses	5T	13	
Other Engineering Courses	2T+3L	06+4.5	
Program Core Courses	19T+16L	56+24	
Elective Courses	4T+2L	10+03	
Project/Thesis	3P	08	
Total	45T+23L+3P	160	

List of Courses

Language Courses (4 credit hours)

Course Code	Course Title	Credit Hours	Contact Hours/ Week	Prerequisite Courses
GED-1131	Basic English	2	2	N/A
GED-1231	Functional English	2	2	N/A
Total		4	4	

General Education Courses (Total 23 credit hours)

(Any 11 Courses including GED-1145:Bangladesh Studies, GED-1122:Basic Computer Applications and GED-3211:Smart Village Studies)

Course Code	Course Title	Credit Hours	Contact Hours/ Week	Prerequisite Courses
GED-1291	Principles of Accounting	2	2	N/A
GED-1145	Bangladesh Studies	2	2	N/A
GED-2181	Introduction to Economics	2	2	N/A
GED-4251	Professional Practices and Ethics	2	2	N/A
GED-1201	Introduction to Sociology	2	2	N/A
GED-3213	Research Methodology	2	2	N/A
GED-1116	Introduction to Management	2	2	N/A
GED-3211	Smart Village Studies	3	2+1	N/A
GED-1261	Sustainable Development	2	2	N/A
GED-2291	Accounting Applications	2	2	N/A
GED-1122	Basic Computer Applications	2	4	N/A
GED-2115	Macro Economics	2	2	N/A
GED- 2247	Ecology	2	2	N/A

GED 1 -year, 1 - semester, 2 -CSE, 1/2 theory/sessional
 CSE 1 -year, 1 -semester, 1 -subject area/stream, 1/2 theory/sessional

Basic Science Courses (8.5 credit hours)

Course Code	Course Title	Credit Hours	Contact Hours/ Week	Prerequisite Courses
GED-1161	Chemistry	3	3	N/A
GED-1171	Physics: Heat, Light and Sound	2	2	N/A
PHY-2171	Electromagnetism and Modern Physics	2	2	GED-1171
PHY-1272	Physics Sessional	1.5	3	N/A
Total		8.5	10	

Mathematics Courses (13 credit hours)

Course Code	Course Title	Credit Hours	Contact Hours/ Week	Prerequisite Courses
MAT-1151	Calculus and Linear Algebra	3	3	N/A
MAT-1251	Differential Equation, Laplace Transform and Fourier Analysis	3	3	MAT-1151
MAT-2151	Coordinate Geometry & Vector Analysis	3	3	N/A
GED-2192	Statistics	2	2	N/A
MAT-2251	Complex Variable and Probability	2	2	N/A
Total		13	13	

Other Engineering Discipline Courses (10.5 credit hours)

Course Code	Course Title	Credit Hours	Contact Hours/ Week	Prerequisite Courses
GED-1262	Computer Aided Engineering Drawing	1.5	3	N/A
EEE-1221	Electrical Circuits	3	3	N/A
EEE-1222	Electrical Circuits Sessional	1.5	3	N/A
EEE-2121	Electronic Devices and Circuits	3	3	EEE-1221
EEE-2122	Electronic Devices and Circuits Sessional	1.5	3	N/A
Total		10.5	15	

Program Core Courses with Project/Thesis (88 credit hours)

Course Code	Course Title	Credit Hours	Contact Hours/ Week	Prerequisite Courses
CSE-1101	Introduction to Computing	2	2	N/A
CSE-1102	Introduction to Computing Sessional	1.5	3	N/A
CSE-1151	Discrete Mathematics	3	3	N/A
CSE-1211	Structured Programming	3	3	N/A
CSE-1212	Structured Programming Sessional	1.5	3	N/A
CSE-2111	Data Structures	3	3	CSE-1211
CSE-2112	Data Structures Sessional	1.5	3	CSE-1212
CSE-2211	Computer Algorithms and Complexity	3	3	CSE-2111
CSE-2212	Computer Algorithms and Complexity Sessional	1.5	3	CSE-2112
CSE-2201	Theory of Computation	3	3	N/A
CSE-3111	Object Oriented Programming	3	3	CSE-2211
CSE-3112	Object Oriented Programming Sessional	1.5	3	N/A

CSE-3121	Computer Architecture and Design	3	3	EEE-2221
CSE-3113	Database Management System	3	3	CSE-2111
CSE-3114	Database Management System Sessional	1.5	3	N/A
CSE-2231	Data Communications	3	3	N/A
CSE-2221	Digital Logic Design	3	3	EEE-2121
CSE-2222	Digital Logic Design Sessional	1.5	3	N/A
CSE-3212	Smartphone Application Development	1.5	3	N/A
CSE-3240	Project I	2	4	CSE-3111
CSE-3115	Numerical Methods	3	3	CSE-1211
CSE-3116	Numerical Methods Sessional	1.5	3	N/A
CSE-3213	Software Engineering	3	3	N/A
CSE-3214	Software Engineering Sessional	1.5	3	N/A
CSE-3231	Computer Networks	3	3	CSE-2231
CSE-3232	Computer Networks Sessional	1.5	3	N/A
CSE-3201	Microprocessor, Assembly Language and Computer Interfacing	3	3	N/A
CSE-3202	Microprocessor, Assembly Language and Computer Interfacing Sessional	1.5	3	N/A
CSE-4111	Artificial Intelligence	3	3	N/A
CSE-4112	Artificial Intelligence Sessional	1.5	3	N/A
CSE-4113	Compiler Design and Construction	3	3	CSE-2201
CSE-4114	Compiler Design and Construction Sessional	1	2	N/A
CSE-4116	Web Technologies	2	4	N/A
CSE-4211	Operating System	3	3	N/A
CSE-4212	Operating System Sessional	1.5	3	N/A
CSE-4203	Management Information System	3	3	N/A
CSE-4140	Project/Thesis II Part – 1	2	4	100 Credit
CSE-4240	Project/Thesis II Part -2	4	8	CSE-4140
Total		88	120	

List of Specialized Elective Courses (13 credit hours)

Any two theory courses ($3 \times 2 = 6$) and

Any two theory with sessional courses ($(2 \times 2 = 4) + (1.5 \times 2) = 3$) to be taken

Course Code	Course Title	Credit Hours	Contact Hours/ Week	Prerequisite Courses
CSE-4261	Computer Graphics	2	2	CSE-1211
CSE-4262	Computer Graphics Sessional	1.5	3	N/A
CSE-4263	Bio Informatics	2	2	N/A
CSE-4264	Bio Informatics Sessional	1.5	3	N/A
CSE-4265	Digital Signal Processing	2	2	N/A
CSE-4266	Digital Signal Processing Sessional	1.5	3	N/A
CSE-4267	Machine Learning	2	2	N/A
CSE-4268	Machine Learning Sessional	1.5	3	N/A
CSE-4161	Computer and Cyber Security	3	3	N/A
CSE-4133	Cellular Mobile and Satellite Communication	3	3	N/A
CSE-4135	Cloud Computing	3	3	N/A
CSE-4163	Internet of Things	3	3	N/A

CSE-4165	Neural Network and Fuzzy Logic	3	3	N/A
CSE-4167	Human Computer Interaction	3	3	N/A

Semester-wise Course Distribution

First Semester (1st Year 1st Semester)

Course Code	Course Title	Credit Hours	Contact Hours/ Week	Prerequisite Courses
CSE-1101	Introduction to Computing	2	2	N/A
CSE-1102	Introduction to Computing Sessional	1.5	3	N/A
CSE-1151	Discrete Mathematics	3	3	N/A
GED-1262	Computer Aided Engineering Drawing	1.5	3	N/A
MAT-1151	Calculus and Linear Algebra	3	3	N/A
GED-1131	Basic English	2	2	N/A
GED-1145	Bangladesh Studies	2	2	N/A
GED-1122	Basic Computer Applications	2	4	N/A
Total		17	22	

Second Semester (1st Year 2nd Semester)

Course Code	Course Title	Credit Hours	Contact Hours/ Week	Prerequisite Courses
CSE-1211	Structured Programming	3	3	N/A
CSE-1212	Structured Programming Sessional	1.5	3	N/A
MAT-1251	Differential Equation, Laplace Transform and Fourier Analysis	3	3	MAT-1151
GED-1171	Physics: Heat, Light and Sound	2	2	N/A
PHY-1272	Physics Laboratory	1.5	3	N/A
EEE-1221	Electrical Circuits	3	3	N/A
EEE-1222	Electrical Circuits Sessional	1.5	3	N/A
GED-1231	Functional English	2	2	N/A
GED-1291	Introduction to Sociology	2	2	N/A
Total		19.5	24	

Third Semester (2nd Year 1st Semester)

Course Code	Course Title	Credit Hours	Contact Hours/ Week	Prerequisite Courses
CSE-2111	Data Structures	3	3	CSE-1211
CSE-2112	Data Structures Sessional	1.5	3	CSE-1212
EEE-2121	Electronic Devices and Circuits	3	3	EEE-1221
EEE-2122	Electronic Devices and Circuits Sessional	1.5	3	EEE-1222
MAT-2151	Coordinate Geometry & Vector Analysis	3	3	N/A
GED-2181	Introduction to Economics	2	2	N/A
GED-2192	Statistics	2	2	N/A
GED-1161	Chemistry	3	3	N/A
PHY-2171	Electromagnetism and Modern Physics	2	2	GED-1171
Total		21	24	

Fourth Semester (2nd Year 2nd Semester)

Course Code	Course Title	Credit Hours	Contact Hours/ Week	Prerequisite Courses
CSE-2211	Computer Algorithms and Complexity	3	3	CSE-2111
CSE-2212	Computer Algorithms and Complexity Sessional	1.5	3	CSE-2112
CSE-2201	Theory of Computation	3	3	N/A
CSE-2231	Data Communications	3	3	N/A
CSE-2221	Digital Logic Design	3	3	EEE-2121
CSE-2222	Digital Logic Design Sessional	1.5	3	N/A
GED-3211	Smart Village Studies	3	2+1	N/A
GED-4251	Professional Practices and Ethics	2	2	N/A
MAT-2251	Complex Variable and Probability	2	2	
Total		22	25	

Fifth Semester (3rd Year 1st Semester)

Course Code	Course Title	Credit Hours	Contact Hours/ Week	Prerequisite Courses
CSE-3111	Object Oriented Programming	3	3	CSE-2211
CSE-3112	Object Oriented Programming Sessional	1.5	3	N/A
CSE-3121	Computer Architecture and Design	3	3	EEE-2221
CSE-3113	Database Management System	3	3	CSE-2111
CSE-3114	Database Management System Sessional	1.5	3	N/A
CSE-3115	Numerical Methods	3	3	CSE-1211
CSE-3116	Numerical Methods Sessional	1.5	3	N/A
GED-1291	Principles of Accounting	2	2	N/A
GED-1261	Sustainable Development	2	2	N/A
Total		20.5	25	

Sixth Semester (3rd Year 2nd Semester)

Course Code	Course Title	Credit Hours	Contact Hours/ Week	Prerequisite Courses
CSE-3212	Smartphone Application Development	1.5	3	N/A
CSE-3213	Software Engineering	3	3	N/A
CSE-3214	Software Engineering Sessional	1.5	3	N/A
CSE-3231	Computer Networks	3	3	CSE-2231
CSE-3232	Computer Networks Sessional	1.5	3	N/A
CSE-3240	Project I	2	4	CSE-3111
CSE-3201	Microprocessor, Assembly Language and Computer Interfacing	3	3	N/A
CSE-3202	Microprocessor, Assembly Language and Computer Interfacing Sessional	1.5	3	N/A

GED-1116	Introduction to Management	2	2	N/A
GED-2291	Accounting Applications	2	2	N/A
Total		21	29	

Seventh Semester (4th Year 1st Semester)

Course Code	Course Title	Credit Hours	Contact Hours/ Week	Prerequisite Courses
CSE-4111	Artificial Intelligence	3	3	N/A
CSE-4112	Artificial Intelligence Sessional	1.5	3	N/A
CSE-4113	Compiler Design and Construction	3	3	CSE-2201
CSE-4114	Compiler Design and Construction Sessional	1	2	N/A
CSE-4116	Web Technologies	2	4	N/A
CSE ****	Elective I	3	3	115 Credit
CSE ****	Elective II	3	3	115 Credit
CSE-4140	Project/Thesis II Part – 1	2	4	115 Credit
GED-3213	Research Methodology	2	2	
Total		20.5	27	

Eighth Semester (4th Year 2nd Semester)

Course Code	Course Title	Credit Hours	Contact Hours/ Week	Prerequisite Courses
CSE-4203	Management Information System	3	3	N/A
CSE-4211	Operating System	3	3	N/A
CSE-4212	Operating System Sessional	1.5	3	N/A
CSE ****	Elective III	2	2	130 Credit
CSE ****	Elective III Sessional	1.5	3	130 Credit
CSE ****	Elective IV	2	2	130 Credit
CSE ****	Elective IV Sessional	1.5	3	
CSE-4240	Project/Thesis II Part -2	4	8	CSE-4140
Total		18.5	27	

List of Specialized Elective Courses

(Any four theory with sessional courses (if any) to be taken)

Course Code	Course Title	Credit Hours	Contact Hours/ Week	Prerequisite Courses
CSE-4261	Computer Graphics	2	2	CSE-1211
CSE-4262	Computer Graphics Sessional	1.5	3	N/A
CSE-4263	Bio Informatics	2	2	N/A
CSE-4264	Bio Informatics Sessional	1.5	3	N/A
CSE-4265	Digital Signal Processing	2	2	N/A
CSE-4266	Digital Signal Processing Sessional	1.5	3	N/A
CSE-4267	Machine Learning	2	2	N/A
CSE-4268	Machine Learning Sessional	1.5	3	N/A
CSE-4161	Computer and Cyber Security	3	3	N/A
CSE-4133	Cellular Mobile and Satellite Communication	3	3	N/A
CSE-4135	Cloud Computing	3	3	N/A
CSE-4163	Internet of Things	3	3	N/A
CSE-4165	Neural Network and Fuzzy Logic	3	3	N/A
CSE-4167	Human Computer Interaction	3	3	N/A

Total GED Credit: 41, Total Credit: 160, Total Hours: 203