

Department of Computer Science and Engineering
संगणक विज्ञान एवं अभियांत्रिकी विभाग

Indian Institute of Technology Guwahati, Guwahati – 781039

B.Tech. Course Structure (B.Tech. 2018 onwards)

Semester – I

Course No	Course Name	L	T	P	C
CH101	Chemistry	3	1	0	8
CH110	Chemistry Lab	0	0	3	3
EE101	Basic Electronics	3	1	0	8
MA101	Mathematics-I	3	1	0	8
CE101	Engineering Drawing	2	0	3	7
PH101	Physics-I	2	1	0	6
PH110/ME110	Physics Lab/Workshop	0	0	3	3
		13	4	9	43
HS101	English Communication*	2	0	2	0

Semester – II

Course No	Course Name	L	T	P	C
BT101	Introductory Biology	3	0	0	6
CS101	Introduction to computing	3	0	0	6
CS110	Computing Lab.	0	0	3	3
EE102	Basic Electronics Lab.	0	0	3	3
MA102	Mathematics-II	3	1	0	8
ME101	Engineering Mechanics	3	1	0	8
PH102	Physics-II	2	1	0	6
ME110/PH110	Workshop / Physics Laboratory	0	0	3	3
		14	3	9	43
SA 1xx	Students Activity Course-I	0	0	2	0

Semester – III

Course No	Course Name	L	T	P	C
MA222	Elementary Number Theory and Algebra	3	0	0	6
MA225	Probability Theory and Random Processes	3	1	0	8
CS201	Discrete Mathematics	3	0	0	6
CS203	Algorithms and Data Structures	3	0	0	6
CS204	Algorithms and Data Structures Lab	0	1	3	5

CS221	Digital Design	3	0	0	6
CS242	System Software Lab.	0	1	3	5
		15	3	6	42
SA2xx	Students Activity Course-II	0	0	2	0
	Minor-I	3	0	0	6
HS200	Sustainable Development Goals***	0	0	2	0

Semester – IV

Course No	Course Name	L	T	P	C
CS205	Formal Languages, Automata Theory and Computation	3	0	0	6
CS207	Design and Analysis of Algorithms	3	0	0	6
CS223	Computer Architecture and Organization	3	0	0	6
CS224	Hardware Lab	0	1	4	6
CS245	Database Management Systems	3	0	0	6
CS246	Database Management Systems Lab	0	0	4	4
HS1xx	HSS Elective -I Level-I	3	0	0	6
		15	1	8	40
SA3xx	Students' Activity Course-III	0	0	2	0
	Minor-II	3	0	0	6

Semester – V

Course No	Course Name	L	T	P	C
MA321	Optimization	3	0	0	6
CS341	Computer Networks	3	0	0	6
CS342	Computer Networks Lab	0	0	4	4
CS343	Operating Systems	3	0	0	6
CS344	Operating Systems Lab	0	0	4	4
CSxxx	Department Elective-I	3	0	0	6
HS1xx	HSS Elective-II Level-I	3	0	0	6
		15	0	8	38
SA4xx	Students' Activity Course-IV	0	0	2	0
	Minor-III	3	0	0	6

Semester – VI

Course No	Course Name	L	T	P	C
CS345	Software Engineering	2	0	0	4
CS346	Software Engineering Lab	0	0	3	3
CS348	Implementation of Programming Language Lab	0	2	3	7
CS361	Machine Learning	3	0	0	6
CSxxx	Departmental Elective-II	3	0	0	6
CSxxx	Departmental Elective-III	3	0	0	6

CSxxx	Departmental Elective-IV	0	1	3	5
		11	3	9	37
	Minor-IV	3	0	0	6

Semester – VII

Course No	Course Name	L	T	P	C
OExxx	Open Elective	3	0	0	6
OExxx/ CSxxx	Open Elective / Departmental Elective-V	3	0	0	6
CSxxx	Departmental Elective-VI	3	0	0	6
CSxxx	Departmental Elective-VII	3	0	0	6
CSxxx	Departmental Elective-VIII	3	0	0	6
CS498	B.Tech. Project-I ^{\$}	0	0	12	12
HS2xx	HSS Elective-I Level-II	3	0	0	6
		18/12	0	0/12	36
	Minor-V	3	0	0	6

Semester – VIII

Course No	Course Name	L	T	P	C
OExxx	Open Elective	3	0	0	6
OExxx	Open Elective	3	0	0	6
CSxxx	Departmental Elective-IX	3	0	0	6
CSxxx	Departmental Elective-X	3	0	0	6
CSxxx	Departmental Elective-XI	3	0	0	6
CS499	B.Tech. Project-II [#]	0	0	12	12
HS2xx	HSS Elective-II Level-II	3	0	0	6
		18/12	0	0/12	36

*Only for students lagging language proficiency, to be graded as PP or NP.

\$ BTech Projects I and II are optional, each in lieu of any two of the departmental electives offered in that semester.

BTech Projects II is mandatory for those who opted for BTech Project-I, but optional to others in lieu of any two of the departmental electives offered in that semester.

*** Type of Letter Grading: PP/NP and Compulsory course for all B.Tech 3rd Semester Students.

Total Mandatory Credits: 315