

UG Course Structure for Computer Science and Engineering (2018-2019)

Cat.	Deviation	Programme Components	CSE	Recommended (IV Years)	
				Min	Max
HU	0	Humanities and Social Science	22	22	22
IS	0	Science	68	62	84
IE	0	Institute Requirement Engineering/ Pharmacy	48	41	60
EP	0	Engineering Drawing (Manual and Computer Aided), Manufacturing Practices and Practice course of Department/ School	21	18	24
LM	0	Language and Management*	18	18	18
DC/ MC	0	Department/Programme Core (Includes Stream Courses)	151	105	175
DE/ BE	0	Department/Programme Elective (Includes Stream Courses)	36	30	75
OE	0	Open Elective (Interdisciplinary Stream courses from Science/ Engineering/Pharmacy)	36	35	80
DP	0	Project/ Industrial visit/ Training	30	20	50
DT	0	Dissertation	0	0	0
		Total	430	430	460
		All Semester Total (Hons.)	450	450	480

L: Lecture hours; T: Tutorial hours; P: Laboratory/ Practical hours; C: Credits

Streams in Computer Science and Engineering

1. Artificial Intelligence and Computer Vision (AICV)

2. High performance Computing and Data Engineering (HPCDE)

One course to be selected, for respective stream in corresponding semester, on recommendation of DUGC

1. Artificial Intelligence and Computer Vision (AICV) Electives

UG Pt. III (V Sem.)	DE.CSE342.16	Intelligent Computing (IC)	3	0	0	9
	DE.CSE443.16	Natural Language Processing (NLP)	3	0	0	9
UG Pt. III (VI Sem.)	DE.CSE352.16	Computer Vision	3	0	0	9
UG Pt. IV (VII Sem.)	DE.CSE443.16	Natural Language Processing (NLP)	3	0	0	9
	DE.CSE342.16	Intelligent Computing (IC)	3	0	0	9
UG Pt. IV (VIII Sem.)	DE.CSE454.17	Pattern Recognition	3	0	0	9
	DE.CSE464.17	Machine Learning	3	0	0	9
	DE.CSE456.17	Biometrics	3	0	0	9

2. High performance Computing and Data Engineering (HPCDE) Electives

UG Pt. III (V Sem.)	DE.CSE362.16	Data Mining	3	0	0	9
UG Pt. III (VI Sem.)	DE.CSE371.16	Parallel Computing	3	0	0	9
UG Pt. IV (VII Sem.)	DE.CSE472.17	Distributed Computing	3	0	0	9
UG Pt. IV (VIII Sem.)	DE.CSE464.17	Machine Learning	3	0	0	9

UG-CRC Code	Course Code	Course Name	L-T-P			Credits
Computer Science and Engineering : 4-Year B. Tech. I-Semester						
IH.H101.14	H101	Universal Human Values - I: Self and Family	2	0	0	6
GY.PE101.14	PE101	Elementary Physical Education	0	1	3	5
GY.CP101.14	CP101	Creative Practices #	0	1	3	5
		Total	2	2	6	16
LM.HL101.14	HL101	Basic English *	2	0	1	7
		Total	4	2	7	23
#Creative Practices course to be announced by Dean Academic Office						
*Basic English course to be taken by student as recommended after Diagnostic Test						
Computer Science and Engineering : 4-Year B.Tech. I-Semester						
IS.BL 101.14	BL 101	Biology	3	1	0	11
IS.PHY 101.14	PHY 101	Physics I: Classical, Quantum & Relativistic Mechanics	3	1	2	13
IS.MA 101.14	MA 101	Engineering Mathematics- I	3	1	0	11
IE.CSO101.14	CSO 101	Computer Programming	3	1	2	13
EP.ME 106.14	ME 106	Manufacturing Practices-II	0	0	3	3
		Total	12	4	7	51
Computer Science and Engineering : 4-Year B. Tech. II-Semester						
IS.MA 102.14	MA 102	Engineering Mathematics- II	3	1	0	11
IE.EO 101.14	EO 101	Fundamentals of Electrical Engineering	3	1	2	13
MC.CSO 102.15	CSO 102	Data Structures	3	0	2	11
EP.CSE103.14	CSE103	Information Technology Workshop-I (ITW-1)	2	0	3	9
EP.ME 104.14	ME 104	Engineering Drawing	1	0	3	6
EP.ME 105.14	ME 105	Manufacturing Practices – I	0	0	3	3
IH.H105.14	H 105	Philosophy	2	1	0	8
IH.H 106.14	H 106	Education & Self #				
		Total	14	3	13	61
# The students have to choose one course from H105 & H106.						
Computer Science and Engineering : 4-Year B. Tech. III-Semester						
IS.MA202.14	MA202	Probability and Statistics	3	1	0	11
IE.CMO102.14	ME102	Engineering Mechanics	3	1	0	11
MC.CSO204.15	CSO204	Discrete Maths	3	0	0	9
MC.CSO211.15	CSO211	Computer System Organization	3	0	2	11
DC.CSE205.15	CSE205	Information Technology Workshop-II (ITW-II)	2	0	3	9
IH.H103.14	H103	Development of Societies	2	1	0	8
IH.H104. 14	H104	History & Civilization #				
		Total	16	3	5	59
# Students have to choose one course from H103 and H104.						

Computer Science and Engineering : 4-Year B. Tech. IV-Semester						
IS.MA 203.14	MA 203	Mathematical Methods	3	1	0	11
DC.CSE241.15	CSE241	Artificial Intelligence	3	0	2	11
MC.CSO221.15	CSO221	Algorithms	3	0	2	11
MC.CSO231.14	CSO231	Operating Systems	3	0	2	11
DP.CSE291.15	CSE 291	Exploratory Project	0	0	5	5
		Total	12	1	11	49
Computer Science and Engineering : 4-Year B. Tech. V-Semester						
IE.MO201.14	MO201	Materials Science and Engineering	3	1	0	11
DC.CSE361.16	CSE361	Database Management System	3	0	2	11
MC.CSO351.16	CSO351	Computer Graphics	3	0	2	11
DE - 1	DE - 1	Department Elective/Stream Elective (DE) - 1	3	0	0	9
		Non-Stream Elective ((DE) - 1				
OE - 1	OE - 1	Open Elective - 1	3	0	0	9
		Total Credits in the Semester	15	1	4	51
		(Regular-Non-Stream)				
DP.CSE391.16	CSE.391	Stream Project (Hons.)	0	0	10	10
		Total Credits (Stream, Hons.)	15	1	14	61
*V Semester Elective / Stream DE-1 Courses						
DE.CSE342.16	CSE342	Intelligent Computing	3	0	0	9
DE.CSE362.16	CSE362	Data Mining	3	0	0	9
DE.CSE443.16	CSE443	Natural Language Processing	3	0	0	9
*V Semester Elective / Non Stream DE-1 Courses						
DE.CSO323.16	CSO323	Graph Theory and Applications	3	0	0	9
DE.CSE353.16	CSE353	Multimedia Systems	3	0	0	9
DE.CSO332.16	CSO332	Ubiquitous Computing	3	0	0	9
DE.CSE372.18	CSE372	Introduction to High Performance Computing	3	0	0	9
Computer Science and Engineering : 4-Year B. Tech. VI-Semester						
DC.CSE381.16	CSE381	Software Engineering	3	0	2	11
MC.CSO322.16	CSO322	Theory of Computation	3	0	0	9
DC.CSE312.16	CSE312	Computer Architecture	3	0	2	11
DE - 2	DE - 2	Department Elective/Stream Elective(DE) - 2	3	0	0	9
		Non-Stream Elective (DE) - 2				
OE - 2	OE - 2	Open Elective - 2	3	0	0	9
DP.CSE392.16	CSE392/ CSE392S	UG or Stream Project	0	0	10	10

			Total Credits	15	0	14	59
*VI Semester Elective / Stream DE - 2 Courses							
DE.CSE352.16	CSE352	Computer Vision	3	0	0	9	
DE.CSE371.16	CSE371	Parallel Computing	3	0	0	9	
*VI Semester Elective / Non Stream DE - 2 Courses							
DE.CSE324.16	CSE324	Operations Research	3	0	0	9	
DE.CSE363.16	CSE363	Information Retrieval	3	0	0	9	
Computer Science & Engineering: 4-Year B.Tech. Summer Term (After VI Sem.)							
DP.CSE393.15	CSE393	Project / Industrial Project / Industrial Training	0	0	5	5	
		Total	0	0	5	5	
Computer Science and Engineering: 4-Year B. Tech. VII-Semester							
DC.CSE425.17	CSE425	Compiler Design	3	0	2	11	
DE - 3	DE - 3	Department Elective/Stream Elective(DE) - 3	3	0	0	9	
		Non-Stream Elective (DE) - 3					
OE - 3	OE - 3	Open Elective - 3	3	0	0	9	
LM	LM	Language Management Courses	3	0	0	9	
DP.CSE491/S.17	CSE491/ CSE491S	UG or Stream Project	0	0	10	10	
		Total Credits	12	0	12	48	
VII Semester Elective / Stream DE-3 Courses							
DE.CSE342.16	CSE342	Intelligent Computing	3	0	0	9	
DE.CSE443.16	CSE443	Natural Language Processing (NLP)	3	0	0	9	
DE.CSO445.19	CSO445	Game Theory	3	0	0	9	
DE. CSE472.17	CSE472	Distributed Computing	3	0	0	9	
*VII Semester Elective / Non Stream DE - 3 Courses							
DE.CSE444.17	CSE444	Neural Networks	3	0	0	9	
DE.CSE434.17	CSE434	Fault Tolerant Computing	3	0	0	9	
DE.CSE435.17	CSE435	Real Time Systems	3	0	0	9	
DE.CSE583.18	CSE583	Advanced Software Engg.	3	0	0	9	
DE.CSE559.18	CSE559	Medical Image Processing	3	0	0	9	
DE.CSE529.18	CSE529	Bio-Informatics Algorithms	3	0	0	9	
DE.CSE582.18	CSE582	Software Reuse and Re-engineering	3	0	0	9	
DE.CSE539.18	CSE539	Social Network Analysis	3	0	0	9	
DE.CSE573.18	CSE573	Parallel Algorithms	3	0	0	9	
DE.CSE530.18	CSE530	Information Security	3	0	0	9	
DE.CSE546.18	CSE546	Robotics	3	0	0	9	
DE.CSE585.18	CSE585	Software Engineering Project Management	3	0	0	9	
DE.CSE574.18	CSE574	Cloud Computing	3	0	0	9	

Computer Science and Engineering: 4-Year B. Tech. VIII-Semester						
DC.CSE433.17	CSE433	Computer Networks	3	0	2	11
DE - 4	DE - 4	Department Elective/Stream Elective(DE) - 4	3	0	0	9
		Non-Stream Elective (DE) - 4				
OE - 4	OE - 4	Open Elective - 4	3	0	0	9
LM	LM	Language Management Courses	3	0	0	9
DC.CSE403.17	CSE403	Seminar	0	0	3	3
		Total Credits				41
DP.CSE492.17	CSE492	Stream Project (Hons.)	0	0	10	10
		Total Credits (Hons.)	12	0	15	51
VIII Semester Elective / Stream DE-4 Courses (Elective-IV)						
DE.CSE454.17	CSE454	Pattern Recognition	3	0	0	9
DE.CSE456.17	CSE456	Biometrics	3	0	0	9
DE.CSE464.17	CSE464	Machine Learning	3	0	0	9
VIII Semester Elective / Non Stream DE - 4 Courses (Elective-II)						
DE.CSE436.17	CSE436	Cyber Security	3	0	0	9
DE.CSE426.17	CSE426	Cryptography	3	0	0	9
DE.CSE457.17	CSE457	Data Compression	3	0	0	9
DE.CSE458.17	CSE458	Soft Computing	3	0	0	9
DE.CSE465.17	CSE465	Advanced Databases	3	0	0	9
DE.CSE537.17	CSE537	Network Security	3	0	0	9
DE.CSE528.17	CSE528	Approximation Algorithms	3	0	0	9
DE.CSE538.17	CSE538	Semantic Web	3	0	0	9
DE.CSE568.17	CSE568	Web Mining	3	0	0	9
L: Lecture hours; T: Tutorial hours; P: Laboratory/ Practical hours; C: Credits						