





37th BoS Meeting

with effect from 27.05.2023

B.Tech - Computer Science & Engineering

B.Tech (VTR UGE-21) - Curriculum

CBCS - Choice Based Credit System

School of Computing

Department of Computer Science and Engineering

VISION

To produce intellectual graduates who could contribute significantly in the analysis, design, development, operation and maintenance of complex software systems for meeting the ever changing requirements and to compete globally towards professional excellence.

MISSION

The mission of Computer Science and Engineering Department is to

M1: Design curricula for imparting training in adapting newer computing methods and technologies for providing effective and efficient solutions to the existing / new problems.

M2: Inculcate in-depth knowledge of various courses by employing Information and Communication Technology (ICT) based pedagogy methods.

M3: Create a conducive research environment for making technological innovations by the faculty and students.

M4: Provide leadership skills and professional ethics thereby making a prolific career in academics and industry.

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs for CSE)

PEO1: Will formulate, solve and analyze Computer Science and Engineering problems using necessary mathematical, Scientific and engineering fundamentals.

PEO2: Will demonstrate the impact of cutting-edge technologies to accomplish social and professional responsibilities.

PEO3: Will demonstrate critical thinking, communication, teamwork, leadership skills and ethical behavior necessary to function productively and professionally.

PEO4: Will pursue higher education at reputed institution in India and abroad, work in product development companies and engage in lifelong learning.

PROGRAM OUTCOMES (POs)

Engineering Graduates will be able to:

- **PO1. Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- **PO2.** Problem analysis: Identify, formulate, review research literature, and analyze complexengineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- **PO3.** Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal and environmental considerations.
- **PO4.** Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- **PO5.** Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
- **PO6.** The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
- **PO7.** Environment and sustainability:Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- **PO8.** Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- **PO9.** Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- **PO10.** Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and

write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO11. Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO12. Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PROGRAM SPECIFIC OUTCOMES (PSO)

On successful completion of the program, the graduates will be able to,

PSO1: Mathematical Concepts: Equipped with the knowledge to infer the mathematical models for problem solving using data structures, design and analysis of algorithms.

PSO2: Software Development: Exhibit proficiency to analyze, design and develop applications in various domains to provide solutions using innovative ideas.

PSO3: Transferring Skills: Demonstrate the ability to provide solutions for real world problems through acquaintance and hands-on training

Course Outcomes (COs)

Abilities of the student defined in terms of Course Outcomes (COs) as per the Bloom's Taxonomy at the end of every course in the programme.

B.Tech - COMPUTER SCIENCE AND ENGINEERING CURRICULUM

(CBCS)

Honors / Specialization / Minor 2021-2022

Credits required for regular students in various course categories for B.Tech(CSE)

The students shall earn 164 credits in various course categories given below for the award of degree of B.Tech (CSE).

Course Category	Minimum Credits Required
Foundation Courses (FC)	56
Program Core (PC)	58
Program Elective (PE)	18
Open Elective (OE)	12
Independent Learning(IL)	14
Industry / Higher Institute Learning Interaction(IHL)	2
Professional Proficiency Courses (PPC)	4
TOTAL	164

Minimum credits required for regular students in various course categories for B.Tech Computer Science and Engineering with minor

The students shall earn 164 credits in various course categories and additional 18 to 20 credits in the specialized tracks / areas from other branches/Schools by satisfying the prerequisite courses for the award of degree of B.Tech Computer Science and Engineering (Artificial Intelligence and Machine Learning) with minor subject to the regulations.

Minimum credits required for regular students in various course categories for B.Tech Computer Science and Engineering with Honors

The students shall earn 164 credits in various course categories and additional 18 to 20 credits in the specialized tracks / areas courses by satisfying the prerequisite courses for the award of degree of B.Tech Computer Science and Engineering (Artificial Intelligence and Machine Learning) with Honors subject to the regulations.

Foundation Core (56 Credits)

Foundation courses enhance the knowledge, skills and attitude of UG engineering graduates of all programmes to the expected level. The foundation courses shall have the courses related to basic sciences and mathematics, basic engineering sciences and humanities and social sciences.

L-Lecture, T-Tutorial, P-Practical, C-credit

S.No	Course Code	Subject Title	Category	L	T	P	C	
Lecture Courses								
1	10210MA101	Linear Algebra for Computing	BSC	3	1	0	4	
2	10210MA102	Calculus & Ordinary differential Equations	BSC	3	1	0	4	
3	10210MA103	Probability, Statistics and Queuing theory	BSC	3	1	0	4	
4	10210PH101	Semiconductor Physics	BSC	3	0	0	3	
5	10210CH101	Engineering Chemistry	BSC	3	0	0	3	
	10210CH103 (2021-2022) admitted batch only	Environmental Science	BSC	3	0	0	3	
6	10210CH104 (2022-2023) admitted batch only	Environmental Science and Sustainability	BSC	3	0	0	3	
7	10210CS101	Problem Solving using C	ESC	3	0	0	3	
8	10210CS102	Computational Thinking for Problem Solving	ESC	3	0	0	3	
9	10210ME101	Design thinking	ESC	2	0	0	2	
10	10210BM101	Biology for Engineers	ESC	2	0	0	2	
11	10210ME103	Innovation & Entrepreneurship	ESC	2	0	0	2	
12	10210ME102	Universal Human Values	HSC	3	0	0	3	
13	10210ME104	Project Management & Finance	HSC	2	0	0	2	
14	10210ME105	Engineers and Society	HSC	1	0	0	M	
15	10210BL101	Constitution of India	HSC	1	0	0	M	
		Integrated Courses						
16	10210EN201	Professional Communication – I	HSC	1	0	2	2	
17	10210EN202	Professional Communication – II	HSC	1	0	2	2	
18	10210EE201	Basic Electrical, Electronics & Measurement Engineering	ESC	2	0	2	3	
19	10210EE204	Introduction to Engineering	ESC	1	0	4	3	

20	10210ME201	Engineering Graphics	ESC	1	0	4	3
	Laboratory Courses						
21	10210PH301	Modern Physics Laboratory	BSC	0	0	2	1
22	10210CH302	Engineering Chemistry Laboratory	BSC	0	0	2	1
23	10210EE301	Engineering Products Lab	ESC	0	0	2	1
24	10210CS301	Problem Solving using C Lab	ESC	0	0	2	1
25	10210CS302	Computational thinking laboratory	ESC	0	0	2	1
26	10210CS306 (Till 2021-2022 admitted batch only)	IT Workshop	ESC	0	0	2	1
Total	Total Credits						56

BSC – Basic Science Courses, ESC – Engineering Science Courses, HSC – Humanities & Social Science Courses, M – Mandatory course

Program Core (58 Credits)

L-Lecture, T-Tutorial, P-Practical, C-credit

S.N o	Course Code	Course Name	L	T	P	C
		Theory Courses				
1	10211CS101	Discrete Mathematics	3	0	0	3
2	10211CS102	Data Structures	3	1	0	3
3	10211CS103	Operating Systems	3	0	0	3
4	10211CS129	Modern Computer Architecture	3	0	0	3
	10211CS105	Computer Networks	3	0	0	3
5	10211CS130 (2022-2023) Admitted batch onwards	Fundamentals of Computer Networks	3	0	0	3
6	10211CS106	Formal Languages and Automata Theory	3	1	0	3
7	10211CS107	Compiler Design	3	1	0	3
8	10211CS109	Microprocessors	2	1	0	2
	10211CS111 (2021-2022) admitted batch only	Image Processing	2	0	0	2
9	10211CS118 (2022-2023) Admitted batch onwards	Image Processing Techniques	3	0	0	3
		Integrated Courses				
10	10211CS201	Digital Electronics	2	0	2	3
11	10211CS202	Design and Analysis of Algorithms	3	1	2	4
12	10211CS204	Object Oriented Programming using Java	2	1	2	3
13	10211CS207	Database Management Systems	3	1	2	4
14	10211CS208	Software Engineering	2	1	2	3
15	10211CS212	Web and Mobile Application Development	3	0	2	4
16	10211CS213	Python Programming	1	1	2	2
17	10211CS223	Machine Learning	2	1	2	3
		Laboratory Courses				
18	10211CS302	Data Structures Laboratory	0	0	2	1
	10211CS303	Computer Networks Laboratory	0	0	2	1
19	10211CS312 (2022-2023) Admitted batch onwards	Fundamentals of Computer Networks Laboratory	0	0	2	1

20	10211CS304	Operating Systems Laboratory	0	0	2	1
21	10211CS305	Microprocessors Laboratory	0	0	2	1
22	10211CS306	Competitive Coding –I	0	0	2	1
23	10211CS307	Competitive Coding –II	0	0	2	1
24	10211CS313	Machine Learning Laboratory	0	0	2	1
		Total Credits				58

General CSE Students (Without Specialization)

Program Electives (18 Credits)

Program electives are the courses offered in the programme which covers depth and breadth. The students may register for appropriate electives offered in the programme based on their area of interest. One course under this category shall be taken from the list of approved MOOCs.

L-Lecture, T-Tutorial, P-Practical, C-credit

S No. Course Code Course Name I T D C

S.No	Course Code	Course Name	L	T	P	C
		Theory Courses				
1	10212CS110	Optimization Techniques	3	1	0	3
2	10212CS112	Cyber Security Policy, Law & Ethics*	3	0	0	3
3	10212CS113	Reinforcement Learning	3	0	0	3
4	10212CS119	Cryptography and Network Security	3	1	0	3
5	10212CS121	High Performance Computing	3	0	0	3
6	10212CS122	Cognitive Computing*	3	0	0	3
7	10212CS123	Data Security and Privacy*	2	0	0	2
8	10212CS126	Information Security*	3	0	0	3
9	10212CS127	Introduction to FinTech*	3	0	0	3
10	10212CS128	Financial Accounting	3	0	0	3
		Integrated Courses				
11	10212CS210	Big Data Analytics	3	0	2	4
12	10212CS211	Artificial Intelligence Techniques	3	0	2	4
13	10212CS214	Data Visualization	3	0	2	4
14	10212CS215	Deep Learning	3	1	2	4
15	10212CS216	Natural Language Processing	3	0	2	4
16	10212CS217	Data Science	2	1	2	3
17	10212CS218	Modeling for Data Science	3	0	2	4
18	10212CS219	Cyber Security	3	0	2	4
19	10212CS220	Animation Engineering	3	0	2	4
20	10212CS221	Game Design	3	0	2	4
21	10212CS222	Virtual and Augmented Reality*	2	0	2	3
22	10212CS224	Computer Vision	3	0	2	3
23	10212CS225	Ethical Hacking	3	0	2	4

24	10212CS226	Secure Coding*	3	0	2	4
		Secure Coung.	J			
25	10212CS228	Blockchain Technology*	2	0	2	3
26	10212CS229	IoT and Cloud Computing	3	0	2	4
27	10212CS230	Forensics in Cyber Security*	3	0	2	4
28	10212CS232	Vulnerability Analysis and Penetration Testing*	3	0	2	4
29	10212CS239	3D Character Modeling*	3	0	2	4
30	10212CS243	Mobile Game Development Tools*	3	0	2	4
31	10212CS244	Computer Graphics	3	0	2	4
32	10212CS245	Story Telling*	2	0	2	3
33	10212CS248	IoT with Blockchain Technology*	3	0	2	4
34	10212CS249	Bitcoin and Cryptocurrencies*	3	0	2	4
*The p	proposed course su	bject to the approval/ratification in the upo	coming	BoS n	neeti	ngs

Open Electives (12 Credits)

Open electives are the courses offered across the schools to enhance the knowledge breadth and professional competency of the students. The students shall register for appropriate electives offered in other schools based on their area of interest. The courses offered under this category cover the interdisciplinary knowledge.

L-Lecture, T-Tutorial, P-Practical, C-credit

S.No	Course Code	Course Name	L	T	P	C
1	XXX1	Course Name- 1	3	0	0	3
2	XXX2	Course Name- 2	3	0	0	3
3	XXX3	Course Name- 3	3	0	0	3
4	XXX4	Course Name- 4	3	0	0	3

^{*}One of the courses may be completed through MOOCs Platform like NPTEL as described by the department.

The following courses are offered to the other departments/schools by School of Computing under Open Elective category.

L-Lecture, T-Tutorial, P-Practical, C-credit

S.No	Course Code	Course Name	L	Т	P	С	Pg No
1	10213CS101	Object Oriented Programming using Java	3	0	0	3	248
2	10213CS102	Data Structures	3	0	0	3	251
3	10213CS103	Operating Systems	3	0	0	3	254
4	10213CS104	Database Management Systems	3	0	0	3	257
5	10213CS105	Computer Networks	3	0	0	3	261
6	10213CS106	Data warehousing and Data mining	3	0	0	3	264

The following courses are offered to the other departments/schools by School of Computing under Open Elective category. The students will solve the problems posted by Leet Code Platform, the grades will be offered based on the scores secured by the students by solving the problems posted in Leet Code Platform.

S.No	Course Code	Course Name	L	T	P	C
1	10213GE301	Programming Challenges	0	1	4	2

Independent Learning (14 Credits)

The students are expected to learn the courses offered under this category on their own. The courses offered under this category include:

L-Lecture, T-Tutorial, P-Practical, C-credit

S.No	Course Code	Course Name	${f L}$	T	P	C
1	10214CS501	Community Service Project	-	-	-	1
2	10214CS601	Minor Project-I	0	0	4	2
3	10214CS602	Minor Project-II	0	0	4	2
4	10214CS701	Major Project	-	-	-	9

Industry / Higher Institute Learning Interaction (2 Credits)

The students shall earn a minimum of two credits by undergoing internship and/or specialized courses.

1. Internship:

The students shall undergo Internship in the industry/higher learning institute approved by Industry-Institute Interaction Cell (IIIC) during any time after the second academic year.

2. Specialized Courses:

The students shall undergo the courses offered either by the industrial experts whose minimum academic qualification is Bachelor of Engineering or equivalent or faculty expert from higher learning institutions approved by IIIC. The students shall choose either one two credits course or one one credit course or two one credit courses.

L-Lecture, T-Tutorial, P-Practical, C-credit

S.No	Course Code	Course Name	L	T	P	C
1	10215CS801	Internship	-	-	-	2
2	10215CS902	Industry Expert Lecture-1	-	-	-	1
3	10215CS903	Industry Expert Lecture-2	ı	-	-	1
4	10215CS951	Higher Institute Learning Interaction-1	-	-	-	1
5	10215CS952	Higher Institute Learning Interaction-2	-	-	-	1

Professional Proficiency Courses (4 Credits)

The Professional Proficiency Courses which carry four credits, to be offered in four different semesters, starting from third semester. These courses offered in this category are relevant to professional proficiency.

L-Lecture, T-Tutorial, P-Practical, C-credit

S.No	Course Code	Course Name	L	T	P	C
1	10216GE901	Soft Skill-I	2	-	-	1
2	10216GE902	Soft Skill-II	2	-	-	1
3		Professional Proficiency Course-III	2	-	-	1
4		Professional Proficiency Course-IV	2	-	-	1

Specialization / Honors (Specialization: 18 credits Honors: Additional 20 credits)

Track: Artificial Intelligence

S.No	Course Code	Course Name	L	T	P	C
		Artificial Intelligence – Core				
1	10212CS211	Artificial Intelligence Techniques	3	0	2	4
2	10212CS210	Big Data Analytics	3	0	2	4
3	10212CS110	Optimization Techniques	3	1	0	3
4	10212CS214	Data Visualization	3	0	2	4
5	10212CS215	Deep Learning	3	0	2	4
6	10212CS224	Computer Vision	3	0	2	3
7	10212CS216	Natural Language Processing	3	0	2	4
8	10212CS113	Reinforcement Learning	3	1	0	3
9	10212CS229	IoT and Cloud Computing	3	0	2	4

Track: Data Science

S.No	Course Code	Course Name	L	T	P	C
		Data Science – Core				
1	10212CS217	Data Science	2	1	2	3
2	10212CS218	Modeling for Data Science	3	0	2	4
3	10212CS210	Big Data Analytics	3	0	2	4
4	10212CS214	Data Visualization	3	0	2	4
5	10212CS211	Artificial Intelligence Techniques	3	0	2	4
6	10212CS110	Optimization Techniques	3	1	0	3
7	10212CS228	Blockchain Technology*	2	0	2	3
8	10212CS229	IoT and Cloud Computing	3	0	2	4
*The	proposed course s	ubject to the approval/ratification in the up	coming	BoS	meet	ings

Track : Artificial Intelligence and Machine Learning

S. No	Course Code	Course Name	L	Т	P	С			
		Artificial Intelligence and Machine							
1	1001000010	Learning Core Electives	2	0	_	4			
1	10212CS210	Big Data Analytics	3	0	2	4			
2	10212CS214	Data Visualization	3	0	2	4			
3	10212CS211	Artificial Intelligence Techniques	3	1	2	4			
4	10212CS110	Optimization Techniques	3	1	0	3			
6	10212CS215	Deep Learning	3	0	2	4			
7	10212CS216	Natural Language Processing	3	0	2	4			
8	10212CS122	Cognitive Computing *	3	0	0	3			
9	10212CS113	Reinforcement Learning	3	1	0	3			
10	10212CS121	High Performance Computing	3	0	0	3			
11	10212CS229	IoT and Cloud Computing	3	0	2	4			
*]	*The proposed course subject to the approval/ratification in the upcoming BoS								
	meetings								

Track: Artificial Intelligence and Data Science

S.No	Course Code	Course Name	L	T	P	C			
		Artificial Intelligence and Data Sci	Artificial Intelligence and Data Science - Core						
1	10212CS110	Optimization Techniques	3	1	0	3			
2	10212CS113	Reinforcement Learning	3	1	0	3			
3	10212CS123	Data Security and Privacy*	2	0	0	2			
4	10212CS210	Big Data Analytics	3	0	2	4			
5	10212CS211	Artificial Intelligence Techniques	3	1	2	4			
6	10212CS214	Data Visualization	3	0	2	4			
7	10212CS215	Deep Learning	3	0	2	4			
8	10212CS216	Natural Language Processing	3	0	2	4			
9	10212CS217	Data Science	2	1	2	3			
10	10212CS218	Modeling for Data Science	3	0	2	4			
11	10212CS229	IoT and Cloud Computing	3	0	2	4			
*The pr	oposed course sul	oject to the approval/ratification in the	upcomin	g BoS	mee	tings			

Track: Cyber Security

S.No	Course Code	Course Name	L	T	P	C				
	Cyber Security – Core Electives									
1	10212CC219	Cyber Security	3	0	2	4				
2	10212CC225	Ethical Hacking	3	0	2	4				
3	10212CC230	Digital Forensics*	3	0	2	4				
4	10212CC232	Vulnerability Assessment and Penetration Testing*	3	0	2	4				
5	10212CC250	Identity Access Management*	3	0	2	4				
6	10212CC112	Cyber Security Policy, Law & Ethics*	3	0	0	3				
7	10212CC119	Cryptography and Network Security	3	1	0	3				
8	10212CC228	Blockchain Technology*	2	0	2	3				
9	10212CC229	IoT and Cloud Computing	3	0	2	4				
10	10212CC226	Secure Coding*	3	0	2	4				
*The p	roposed course su	abject to the approval/ratification in the upon	coming	BoS r	neeti	ngs				

Track: Financial Technology

S.No	Course Code	Course Name	L	T	P	C						
		Financial Technology- Core										
1	10212CS127	Introduction to FinTech*	3	0	0	3						
2	10212CS210	Big Data Analytics	3	0	2	4						
3	10212CS214	Data Visualization	3	0	2	4						
4	10212CS211	Artificial Intelligence Techniques	3	0	2	4						
5	10212CS128	Financial Accounting	3	0	0	3						
6	10212CS228	Block Chain Technology*	2	0	2	3						
7	10212CS229	IoT and Cloud Computing	3	0	2	4						
*The	proposed course su	bject to the approval/ratification in the up	coming	*The proposed course subject to the approval/ratification in the upcoming BoS meetings								

Track: Gaming and Animation

S.No	Course Code	Course Name	L	T	P	C					
		Gaming and Animation- Core									
1	10212CS244	Computer Graphics	3	0	2	4					
2	10212CS220	Animation Engineering	3	0	2	4					
3	10212CS221	Game Design	3	0	2	4					
4	10212CS222	Virtual and Augmented Reality*	2	0	2	3					
5	10212CS245	Story Telling*	2	0	2	3					
6	10212CS239	3D Character Modeling*	3	0	2	4					
7	10212CS243	Mobile Game Development Tools *	3	0	2	4					
8	10212CS229	IoT and Cloud Computing	3	0	2	4					
*The p	proposed course su	bject to the approval/ratification in the upon	*The proposed course subject to the approval/ratification in the upcoming BoS meetings								

Track: IoT and Cyber Security including Block Chain Technology

S.No	Course Code	Course Name	L	T	P	C			
	Cyber Security - Core								
1	10212CS119	Cryptography and Network Security	3	1	0	3			
2	10212CS219	Cyber Security	3	0	2	4			
3	10212CS225	Ethical Hacking	3	0	2	4			
4	10212CS230	Digital Forensics *	3	0	2	4			
5	10212CS228	Blockchain Technology*	2	0	2	3			
6	10212CS248	IoT with Blockchain Technology*	3	0	2	4			
7	10212CS249	Bitcoin and Cryptocurrencies*	3	0	2	4			
8	10212CS229	IoT and Cloud Computing	3	0	2	4			
*The p	proposed course su	bject to the approval/ratification in the upon	coming	BoS r	neeti	ngs			

Track: Cloud Infrastructure Management

S.No	Course Code	Course Name	L	T	P	C		
1	10212CS251	Virtualization Techniques	2	0	2	3		
2	10212CS252	Windows Client Administration Operating System	2	0	2	3		
3	10212CS253	Windows Server Administration Operating System*	2	0	2	3		
4	10212CS254	Cloud Fundamentals using Azure	2	0	2	3		
5	10212CS255	Administering Microsoft Exchange Server*	2	0	2	3		
6	10212CS256	Office 365 Administration*	2	0	2	3		
*T	*The proposed course subject to the approval/ratification in the upcoming BoS meetings							

Track: Network and Server Management

S.No	Course Code	Course Name	L	T	P	C		
1	10212CS257	Data Center Hosting – Windows operating System	2	0	2	3		
2	10212CS258	Data Center Hosting – Unix operating System*	2	0	2	3		
3	10212CS259	Advanced Switching and Networking Techniques	2	0	2	3		
4	10212CS260	Advanced Routing Techniques and Security*	2	0	2	3		
5	10212CS261	Juniper Networking Techniques*	2	0	2	3		
6	10212CS262	Storage Management *	2	0	2	3		
*T	*The proposed course subject to the approval/ratification in the upcoming BoS meetings							

Track: Application Modernization Service

S.No	Course Code	Course Name	L	Т	P	С		
1	10212CS263	IIS Web Server Technologies	2	0	2	3		
2	10212CS264	Application Server Technologies*	2	0	2	3		
3	10212CS265	Web Sphere Application Server*	2	0	2	3		
4	10212CS266	WebSphere MQ*	2	0	2	3		
5	10212CS267	Middleware Technologies*	2	0	2	3		
6	10212CS268	Database Administration Using MSSQL Server*	2	0	2	3		
7	10212CS269	Oracle Database Administration *	2	0	2	3		
*T	*The proposed course subject to the approval/ratification in the upcoming BoS meetings							

Track: Mainframe

S.No	Course Code	Course Name	L	T	P	C
1	10212CS270	Introduction to System Programming z/OS commands and Panel on IBMZ	2	0	2	3
2	10212CS271	Fundamentals of Networking, CICS and IMS*	2	0	2	3
3	10212CS272	z/OS Administration*	2	0	2	3
4	10212CS273	z/OS System Service Structure*	2	0	2	3
5	10212CS274	IBM System z Parallel Sysplex Operations*	2	0	2	3
6	10212CS275	IBM MQ System Administration for z/OS*	2	0	2	3
*The proposed course subject to the approval/ratification in the upcoming BoS meetings						