



KAKATIYA INSTITUTE OF TECHNOLOGY & SCIENCE

Opp : Yerragattu Gutta, Hasanparthy (Mandal), WARANGAL - 506 015, Telangana, INDIA.

काकतीय प्रौद्योगिकी एवं विज्ञान संस्थान, वरंगल - ५०६ ०१५ तेलंगाना, भारत

కాకతీయ సాంకేతిక విజ్ఞాన శాస్త్ర విద్యాలయం, వరంగల్ - ౫౦౬ ౦౧౫ తెలంగాణ, భారతదేశము

(An Autonomous Institute under Kakatiya University, Warangal)

(Approved by AICTE, New Delhi; Recognised by UGC under 2(f) & 12(B); Sponsored by EKASILA EDUCATION SOCIETY)

DEPARTMENT OF INFORMATION TECHNOLOGY

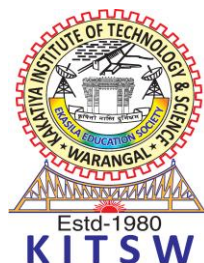
B.TECH.CURRICULUM

ACADEMIC YEAR:2024-25

DEPARTMENT OF INFORMATION TECHNOLOGY

Undergraduate Rules and Regulations-2024 (URR24)
In accordance with the National Education Policy 2020
w.e.f AY 2024-25

Regulations Governing the
Choice Based Credit System with
Multiple Entry and Multiple Exit Options
with
Competancy-Focused Outcome Based Curriculum (CF-OBC)



KAKATIYA INSTITUTE OF TECHNOLOGY & SCIENCE, WARANGAL - 506 015, TELANGANA

(UGC Autonomous Institute UnderKakatiyaUniversity, Warangal)



KAKATIYA INSTITUTE OF TECHNOLOGY & SCIENCE

Opp : Yerragattu Gutta, Hasanparthy (Mandal), WARANGAL - 506 015, Telangana, INDIA.

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DEPARTMENT OF INFORMATION TECHNOLOGY

Scheme of Instruction

B. Tech (IT) –CURRICULUM (KITSW-URR24)

SEMESTER-WISE CURRICULUM WITH SCHEME OF INSTRUCTION

Abbreviations

L	Lecture Hours	O	Outside the Class Work (Self Study) Hours
T	Tutorial Hours	E	Total Engagement in Hours
P	Practical Hours	C	Credits Assigned

I SEMESTER

Sl. No.	Category	Course Code	Course Title	Lectures / week					Credits
				L	T	P	O	E	
-	IKSC	U24IK100	AICTE Mandated Student Induction Programme (Universal Human Values - I)						-
1	BSC	U24MH101	Differential Calculus and Ordinary Differential Equations	2	1	-	-	3	3
2	BSC	U24CY102B	Engineering Chemistry (from Pool-I) (Common to CSM, CSD, CSN, CSO & IT)	2	1	2	-	5	4
3	ESC	U24IT103	Digital Logic Design	2	1	-	-	3	3
4	PCC	U24IT104	Programming for Problem Solving with C	2	1	2	-	5	4
5	HSMC	U24MH105	English Communication and Report Writing	2	-	-	-	2	2
6	VAC	U24VA106	Sports & Yoga	-	-	2	-	2	1
7	ESC	U24ME107	Engineering Graphics through CAD	-	-	2	-	2	1
8	ELC	U24EL108	Practicum-1	-	-	-	4	4	1
9	VAC	U24VA109 XXXXX	SEA - I/ SAA-1	-	-	-	2	2	1
10	AEC	U24AE110	Expert Talk Series-1	-	-	-	1	1	1
Total:				10	4	8	7	29	21
Summer/ Inter-sem Bridge Courses (Approved by BoS and Dean, AA): 1 week to 10 days: 1 credit to each Bridge course under additional learning (will be printed on grade sheet)									

Pool - I (Chemistry)		
S. No.	Course Code	Course Title
1.	U24CY102A	Engineering Chemistry (for Mechanical Engineering)
2.	U24CY102B	Engineering Chemistry (Common to CSM, CSD, CSN, CSO & IT)

II SEMESTER

Sl. No.	Category	Course Code	Course Title	Lectures / week					Credits
				L	T	P	O	E	
1	BSC	U24MH201	Matrix Theory and Vector Calculus	2	1	-	-	3	3
2	BSC	U24PY202B	Engineering Physics (from Pool-II) (Common to CSM, CSD, CSN, CSO & IT)	2	1	2	-	5	4
3	PCC	U24IT203	Computer Architecture and Organization	2	1	-	-	3	3
4	PCC	U24IT204	Data Structures through C	2	1	2	-	5	4
5	ESC	U24EE205B	Basic Electrical Engineering (from Pool-III) (Common to CSM, CSD, CSN, CSO & IT)	2	1	2	-	5	4
6	VAC	U24CY206	Environmental Studies	2	-	-	-	2	-
7	AEC	U24AE207	Idea Lab Makerspace	-	-	2	-	2	1
8	SEC	U24SE208	Programming Skill Development Lab - 1	-	-	2	-	2	1
9	ELC	U24EL209	Practicum-2	-	-	-	4	4	1
10	VAC	U24VA210 XXXXX	SEA-2/ SAA -2	-	-	-	2	2	1
11	AEC	U24AE211	Expert Talk Series-2	-	-	-	1	1	1
Total:				12	5	10	7	34	23
Summer/ Inter-sem Bridge Courses (Approved by BoS and Dean, AA): 1 week to 10 days: 1 credit to each Bridge course under additional learning (will be printed on grade sheet)				-	-	-	-	-	-

Pool - II (Physics)		
S. No.	Course Code	Course Title
1.	U24PY202A	Engineering Physics (for Mechanical Engineering)
2.	U24PY202B	Engineering Physics (Common to CSM, CSD, CSN, CSO & IT)

Pool - III (Basic Electrical & Electronics Engineering)		
S. No.	Course Code	Course Title
1.	U24EE205A	Basic Electrical and Electronics Engineering (for Mechanical Engineering)
2.	U24EE205B	Basic Electrical Engineering (Common to CSM, CSD, CSN, CSO & IT)

Courses for exit:

Successful completion of two subjects (6-Credits) during 2-months internship at the institute
OR

Successful completion of two suitable skill based courses (external) to qualify for Certification

A. After First Year: (UG Certificate in IT)

(i) The candidate should pass any two of the following additional courses (ITI Level) during the 2-Months internship at institute

Exit Option to Qualify UG Certificate in IT : Any Two (02) Courses during the 2 - Months internship									
S. No.	Category	Course Code	Course Title	L	T	P	O	E	C
1	PCC	U24IT212X	PC Software	2	-	2	-	4	3
2	PCC	U24IT213X	Digital Marketing	2	-	2	-	4	3
3	PCC	U24IT214X	Web Designing	2	-	2	-	4	3
4	PCC	U24IT215X	Hardware and Networking	2	-	2	-	4	3
5	PCC	U24IT216X	Any other course approved by BoS Chair and Dean AA						

(OR)

(ii) Any two suitable skill based courses to qualify for Certification.

Exit Option to Qualify UG Certificate in IT : Any Two (02) Skill based Courses -:									
S. No.	Category	Course Code	Course Title	L	T	P	O	E	C
1	SEC	U24SE212X	UNIX/LINUX Programming https://www.udemy.com/course/complete-linux-training-course-to-get-your-dream-it-job/?couponCode=ST3MT72524	-	-	6	-	6	3
2	SEC	U24SE213X	Java Programming https://learn.oracle.com/ols/learning-path/java-fundamentals/55593/55578	-	-	6	-	6	3
3	SEC	U24SE214X	Advanced Data Structures https://www.udemy.com/course/data-structures-and-algorithms-deep-dive-using-java/?couponCode=ST3MT72524	-	-	6	-	6	3
4	SEC	U24SE215X	SQL and PL/SQL Programming https://www.udemy.com/course/the-ultimate-mysql-bootcamp-go-from-sql-beginner-to-expert/?couponCode=ST3MT72524	-	-	6	-	6	3
5	SEC	U24SE216X	Any other skill based course approved by BoS Chair and Dean, AA	-	-	6	-	6	3

III SEMESTER

Sl. No.	Category	Course Code	Course Title	Lectures / week					Credits
				L	T	P	O	E	
1	ESC	U24IT301	Artificial Intelligence	2	1	-	-	3	3
2	PCC	U24IT302	Advanced Data Structures	2	1	2	-	5	4
3	PCC	U24IT303	Software Engineering	2	1	-	-	3	3
4	PCC	U24IT304	Database Management Systems	2	1	2	-	5	4
5	PCC	U24IT305	Object Oriented Programming through Java	2	1	2	-	5	4
6	VAC	U24VA306B	Soft and Interpersonal Skills Laboratory (from Pool-IV)	-	-	2	-	2	1
7	SEC	U24SE307	Programming Skill Development Lab -2	-	-	2	-	2	1
8	ELC	U24EL308	Practicum-3	-	-	-	4	4	1
9	VAC	U24VA309 XXXXX	SEA-3 / SAA -3	-	-	-	2	2	1
10	AEC	U24AE310	Expert Talk Series-3	-	-	-	1	1	1
Total:				10	5	10	7	32	23
Additional Learning®:Maximum credits allowed for Honours/Minor				-	-	-	-	-	5
Total credits for Honours/Minor students:				-	-	-	-	-	28
Summer/ Inter-semBridge Courses (Approved by BoS and Dean, AA): 1 week to 10 days: 1 credit to each Bridge course under additional learning (will be printed on grade sheet)				-	-	-	-	-	-

Pool-IV T&P Basket		
S. No.	Course Code	Course Title
1.	U24VA306A	Quantitative Aptitude and Logical Reasoning
2.	U24VA306B	Soft and Interpersonal Skills

IV SEMESTER

Sl. No.	Category	Course Code	Course Title	Lectures / week				Credits
				L	T	P	E	
1	BSC	U24MH401D	Discrete Mathematics and Probability Statistics <i>(from pool-V)</i>	2	1	-	3	3
2	PCC	U24IT402	Design and Analysis of Algorithms	2	1	-	3	3
3	PCC	U24IT403	Python Programming	2	1	-	3	3
4	PCC	U24IT404	Operating Systems	2	1	-	3	3
5	PCC	U24IT405	Computer Networks	2	1	-	3	3
6	VAC	U24VA406A	Quantitative Aptitude and Logical Reasoning	2	-	-	2	2
7	SEC	U24SE407	Programming Skill Development Lab -03	-	-	2	2	1
8	PCC	U24IT408	Design and Analysis of Algorithms Laboratory	-	-	2	2	1
9	PCC	U24IT409	Python Programming Laboratory	-	-	2	2	1
10	PCC	U24IT410	Operating Systems Laboratory	-	-	2	2	1
11	VAC*	U24CY411*	Environmental Studies*	2*	-	-	2*	-
Total:				12	5	8	25	21
Additional Learning [@] : Maximum credits allowed for Honours/Minor				-	-	-	-	5
Total credits for Honours/Minor students:				-	-	-	-	26
Summer/ Inter-sem Bridge Courses (Approved by BoS and Dean, AA): 1 week to 10 days: 1 credit to each Bridge course under additional learning (will be printed on grade sheet)				-	-	-	-	-

**For Lateral Entry Students Only*

T&P Basket		
S. No.	Course Code	Course Title
1.	U24VA406A	Quantitative Aptitude and Logical Reasoning
2.	U24VA406B	Soft and Interpersonal Skills

Branch Specific Mathematics (Pool-V)		
S. No.	Course Code	Course Title
1.	U24MH401A	Numerical and Statistical Methods <i>(for Civil Engineering)</i>
2.	U24MH401B	Applied Mathematics <i>(for Mechanical Engineering)</i>
3.	U24MH401C	Applied Mathematics <i>(Common to ECI, EEE & ECE)</i>
4.	U24MH401D	Discrete Mathematics and Probability Statistics <i>(Common to CSE, CSN, CSO & IT)</i>
5.	U24MH401E	Essential Mathematics and Statistics for Machine learning <i>(for CSM)</i>
6.	U24MH401F	Essential Mathematics and Statistics for Data science <i>(for CSD)</i>

Courses for exit:

Successful completion of two subjects (6-Credits) during 2-months internship at the institute
OR

Successful completion of two suitable skill based courses (external) to qualify for Certification
B. After Second Year: (UG Diploma in IT)

(i) The candidate should pass any two of the following additional courses (Diploma Level) during the 2-Months internship at institute

Exit Option to Qualify UG Diploma in IT : Any Two (02) Courses during the 2 - Months internship									
S. No.	Category	Course Code	Course Title	L	T	P	O	E	C
1	PCC	U24IT412X	Introduction to Web Programming	2	-	2	-	4	3
2	PCC	U24IT413X	Internet of Things	2	-	2	-	4	3
3	PCC	U24IT414X	Cloud Computing	2	-	2	-	4	3
4	PCC	U24IT415X	Full Stack Development	2	-	2	-	4	3
5	PCC	U24IT416X	Any other course approved by BoS Chair and Dean, AA	2	-	2	-	4	3

(OR)

(ii) Any two suitable skill based courses to qualify for Diploma.

Exit Option to Qualify UG Diploma in IT : Any Two (02) Skill based Courses -:									
S. No.	Category	Course Code	Course Title	L	T	P	O	E	C
1	SEC	U24SE412X	Programming for Web Design https://onlinecourses.swayam2.ac.in/nou24_cs12/preview	-	-	6	-	6	3
2	SEC	U24SE413X	Internet of Things using Aurdino/Raspberry Pi https://onlinecourses.swayam2.ac.in/ntr24_ed44/preview	-	-	6	-	6	3
3	SEC	U24SE414X	Cloud Computing using AWS/Google Cloud https://www.coursera.org/specializations/cloud-computing	-	-	6	-	6	3
4	SEC	U24SE415X	Full Stack using JAVA / .NET https://www.coursera.org/specializations/java-fullstack	-	-	6	-	6	3
5	SEC	U24SE416X	Any other skill based course approved by BoS Chair and Dean, AA	-	-	6	-	6	3

B. Tech Honours with Research:

Students opting for B. Tech Honours with Research, shall undergo a 2-Month Mandatory Research Internship-I (5 Credits) at respective department during the summer vacation after IV Semester.

V SEMESTER

Sl. No.	Category	Course Code	Course Title	Lectures / week				Credits
				L	T	P	E	
1	OE-I	U24OE501X-SDG	OE-SDGB (<i>from Pool - VI</i>)	2	1	-	3	3
2	PCC	U24IT502	Machine Learning	2	1	-	3	3
3	PCC	U24IT503	Big Data Analytics	2	1	-	3	3
4	PCC	U24IT504	Cryptography and Network Security	2	1	-	3	3
5	PCC	U24IT505	Full Stack Development	3	1	-	4	4
6	IKSC	U24IK506B	Essence of Indian Traditional Knowledge	2	-	-	2	2
7	PCC	U24IT507	Machine Learning Laboratory	-	-	2	2	1
8	PCC	U24IT508	Full Stack Development Laboratory	-	-	2	2	1
9	SEC	U24SE509	Programming Skill Development Lab - 4	-	-	2	2	1
10	ELC	U24IT510	Seminar	-	-	2	2	1
Total:				13	5	8	26	22
Additional Learning [@] :Maximum credits allowed for Honours/Minor				-	-	-	-	5
Total credits for Honours/Minor students:				-	-	-	-	27
Summer/ Inter-sem Bridge Courses (Approved by BoS and Dean, AA):1 week to 10 days: 1 credit to each Bridge course under additional learning (will be printed on grade sheet)				-	-	-	-	-

[@]List of courses for additional learning through MOOCs towards Honours/Minor in Engineering shall be prescribed by the department under Honours/ Minor Curricula

Pool - VI Sustainable Development Goals Basket (OE - SDGB)			
S. No.	Course Code	Course Title	Offered by
1.	U24OE501G	IoT based Precision Agriculture Technology for Crop Farming	CSE (Networks)
2.	U24OE501I	Sustainable AI	CSE (AI & ML)
3.	U24OE501O	AI Ethics	CSE (AI & ML)
4.	U24OE501R	Software Quality Assurance & Testing	CSE

Sl. No.	Category	Course Code	Course Title	Lectures / week				Credits
				L	T	P	E	
1	OE-II	U24OE601X-S&EB	Startups & Entrepreneurship Basket <i>(from Pool - VII)</i>	2	1	-	3	3
2	PEC	U24IT602X	Program Elective -I/ MOOCs-I <i>(from Pool - VIII)</i>	2	1	-	3	3
3	PCC	U24IT603	Cloud Computing	3	1	-	4	4
4	ESC	U24IT604	Introduction to Internet of Things	2	1	-	3	3
5	SEC	U24SE605	Programming Skill Development Lab -05	-	-	2	2	1
6	IKSC	U24IK606A	Universal Human Values - II	2	-	-	2	2
7	HSMC	U24MH607	Technical English	-	-	2	2	1
8	PCC	U24IT608	Cloud Computing Laboratory	-	-	2	2	1
9	ESC	U24IT609	Internet of Things Laboratory	-	-	2	2	1
10	ELC	U24IT610	Mini Project	-	-	2	2	1
Total:				11	4	10	25	20
Additional Learning@:Maximum credits allowed for Honours/Minor				-	-	-	-	5
Total credits for Honours/Minor students:				-	-	-	-	25
Summer/ Inter-sem Bridge Courses (Approved by BoS and Dean, AA): 1 week to 10 days: 1 credit to each Bridge course under additional learning (will be printed on grade sheet)								

@List of courses for additional learning through MOOCs towards Honours/Minor in Engineering shall be prescribed by the department under Honours/ Minor Curricula

B. Tech Honours with Research:

Students opting for B. Tech Honours with Research, shall undergo a 2-Month Mandatory Research Internship-II(5 Credits) at respective department during the summer vacation after VI Semester.

Pool -VII Startups & Entrepreneurship Basket (OE - S&EB)		
S. No.	Course Code	Course Title
1.	U24OE601A	Design Thinking
2.	U24OE601B	Innovative Product Design and Development
3.	U24OE601C	Entrepreneurship
4.	U24OE601D	Design Studio
5.	U24OE601Z	Any other course approved by BoS Chair and Dean AA

Pool - VIII Program Elective - I		
S. No.	Course Code	Course Title
1	U24IT602A	Cyber Security
2	U24IT602B	Generative Artificial Intelligence
3	U24IT602C	Advanced Computer Networks
4	U24IT602D	Parallel Programming
5	U24IT602E	Applications of IoT

Courses for exit:

Successful completion of two subjects (6-Credits) during 2-months internship at the institute
OR

Successful completion of two suitable skill based courses (external) to qualify for Certification

C. After Third Year: (B. Tech. Voc. in IT)

(i) The candidate should pass any two of the following additional courses (Degree Level) during the 2-Months internship at institute

Exit Option to Qualify B. Voc in IT : Any Two (02) Courses during the 2 - Months internship								
S. No.	Category	Course Code	Course Title	L	T	P	E	C
1	PCC	U24IT611X	Natural Language Processing	2	-	2	4	3
2		U24IT612X	Software Testing	2	-	2	4	3
3	PCC	U24IT613X	Fundamentals of DevOps	2	-	2	4	3
4	PCC	U24IT614X	Cyber Security	2	-	2	4	3
5	PCC	U24IT615X	Any other course approved by BoS Chair and Dean AA	2	-	2	4	3

(OR)

(ii) Any two suitable skill based courses to qualify for B. Voc. in IT Degree.

Exit Option to Qualify B. Voc. in IT : Any Two (02) Skill based Courses -:									
S. No.	Category	Course Code	Course Title	L	T	P	O	E	C
1	SEC	U24SE611X	Deep Learning using Python https://www.simplilearn.com/tutorials/deep-learning-tutorial/deep-learning-with-python	-	-	6	-	6	3
2	SEC	U24SE612X	Cyber Security Tools https://onlinecourses.swayam2.ac.in/nou19_cs08/preview	-	-	6	-	6	3
3	SEC	U24SE613X	Automated Testing Tools https://www.udemy.com/course/automated-software-testing-with-python/?couponCode=ST3MT72524	-	-	6	-	6	3
4	SEC	U24SE614X	DevOps https://www.udemy.com/course/devops-with-docker-kubernetes-and-azure-devops/?couponCode=ST3MT72524	-	-	6	-	6	3
5	SEC	U24SE615X	Any other skill based course approved by BoS Chair and Dean AA	-	-	6	-	6	3

VII SEMESTER

Sl. No.	Category	Course Code	Course Title	Lectures / week				Credits
				L	T	P	E	C
1	OE-III	U24MB701X	Open Elective-MB (from Pool - IX)	2	1	-	3	3
2	PEC	U24IT702X	Program Elective - II/ MOOCs-II (from Pool - X)	2	1	-	3	3
3	PCC	U24IT703	DevOps Essentials	3	1	-	4	4
4	PCC	U24IT704	Data Science	2	1	-	3	3
5	PCC	U24IT705	DevOps Laboratory	-	-	2	2	1
6	PCC	U24IT706	Data Science Laboratory	-	-	2	2	1
7	ELC	U24IT707	Internship Evaluation*	-	-	2	2	1
8	ELC	U24IT708	Major Project Phase-1 / Industrial Internship - 1	-	-	8	8	4
Total:				9	4	14	27	20
Additional Learning@:Maximum credits allowed for Honours/Minor				-	-	-	-	4
Total credits for Honours/Minor students:				-	-	-	-	24

Pool -IX Management Courses Basket (OE-MB)		
S. No.	Course Code	Course Title
1.	U24OE701A	Management Economics and Accountancy
2.	U24OE701B	Engineering Finance
3.	U24OE701C	Organisational Behaviour
4.	U24OE701D	E-Commerce and Digital Marketing
5.	U24OE701Z	Any other course approved by BoS Chair and Dean AA

Pool -X Program Elective - II		
S. No.	Course Code	Course Title
1	U24IT702A	Ethical Hacking
2	U24IT702B	Computer Vision & Image Processing
3	U24IT702C	Mobile Computing
4	U24IT702D	High Performance Computing Architecture
5	U24IT702E	Industrial IoT

VIII SEMESTER

Sl. No.	Category	Course Code	Course Title	Lectures / week				Credits
				L	T	P	E	
1	PEC	U24IT801X	Program Elective - III / MOOCs-III (from Pool - XI)	2	1	-	3	3
2	PEC	U24IT802X	Program Elective - IV / MOOCs-IV (from Pool - XII)	2	1	-	3	3
3	ELC	U24IT803	Major Project Phase - 2 / Industrial Internship - 2	-	-	12	12	6
Total:				4	2	12	18	12
Additional Learning@:Maximum credits allowed for Honours/Minor:				-	-	-	-	4
Total credits for Honours/Minor students:				-	-	-	-	16

Pool - XI Program Elective - III		
S. No.	Course Code	Course Title
1	U24IT801A	Blockchain Technologies
2	U24IT801B	Natural Language Processing
3	U24IT801C	Wireless Adhoc Networks
4	U24IT801D	Fog & Edge Computing
5	U24IT801E	Privacy and Security in IoT

Pool - XII Program Elective - IV		
S. No.	Course Code	Course Title
1	U24IT802A	Computer Forensics
2	U24IT802B	Deep Learning
3	U24IT802C	Wireless Sensor Networks
4	U24IT802D	Augmented Reality & Virtual Reality
5	U24IT802E	IoT Architectures and Protocols

SUMMARY

SEMESTER	I	II	III	IV	V	VI	VII	VIII	TOTAL
CREDITS	21	23	23	21	22	20	20	12	162



KAKATIYA INSTITUTE OF TECHNOLOGY & SCIENCE

Opp : Yerragattu Gutta, Hasanparthy (Mandal), WARANGAL - 506 015, Telangana, INDIA.

కాకతీయ ప్రైవేట్ టెక్నాలజీస్ & సైన్స్, వరంగల్ - 506 015 తెలంగాణ, భారత్

కాకతీయ సాంకేతిక విజ్ఞాన శాస్త్ర విద్యాలయం, వరంగల్ - 506 015 తెలంగాణ, భారతదేశము

Estd-1980
KITSW

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DEPARTMENT OF INFORMATION TECHNOLOGY

PROGRAM ELECTIVE COURSES (PEC)

There are four slots allotted to Program Elective Courses (PECs).

Each major specialization of the B. Tech Programme is treated as a vertical.

PROGRAM ELECTIVE COURSES - VERTICALS

VERTICAL/ PE	PE1	PE2	PE3	PE4
VERTICAL 1: Cyber Security	U24IT602A: Cyber Security	U24IT702A: Ethical Hacking	U24IT801A: Blockchain Technologies	U24IT802A: Computer Forensics
	(OR)			
	Equivalent MOOC approved by BoS Chair and Dean AA			
VERTICAL 2: Artificial Intelligence & Machine Learning	U24IT602B: Generative Artificial Intelligence	U24IT702B: Computer Vision & Image Processing	U24IT801B: Natural Language Processing	U24IT802B: Deep Learning
	(OR)			
	Equivalent MOOC approved by BoS Chair and Dean AA			
VERTICAL 3: Computer Networks	U24IT602C: Advanced Computer Networks	U24IT702C: Mobile Computing	U24IT801C: Adhoc Networks	U24IT802C: Wireless Sensor Networks
	(OR)			
	Equivalent MOOC approved by BoS Chair and Dean AA			
VERTICAL 4: High Performance Computing	U24IT602D: Parallel Programming	U24IT702D: High Performance Computing Architecture	U24IT801D: Fog & Edge Computing	U24IT802D: Augmented Reality & Virtual Reality
	(OR)			
	Equivalent MOOC approved by BoS Chair and Dean AA			
VERTICAL 5: Internet of Things	U24IT602E: Applications of IoT	U24IT702E: Industrial IoT	U24IT801E: Privacy and Security in IoT	U24IT802E: IoT Architectures and Protocols
	(OR)			
	Equivalent MOOC approved by BoS Chair and Dean AA			