



BATCH: 2026-2030



SYLLABUS

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING
UNIVERSITY OF ENGINEERING & MANAGEMENT JAIPUR

B.Tech. ECE Course Structure : 2026-2030 Batch

1st Semester (Group – B: ECE)

Sl. No.	Type of Course	Subject code	Subject name	L	T	P	S	Total Contact Hours	Credit Points
THEORY									
1	Basic Science Course	BSCCH102	Chemistry	3	1	0	0	4	4
2	Basic Science Course	BSCM103B	Mathematics and Basic Statistics	3	1	0	0	4	4
3	Humanities and social sciences including Management	HSMC101	English	2	0	0	0	2	2
4	Engineering Science Course	ESCEC101	Basic Electronics Engineering	3	1	0	0	4	4
5	Engineering Science Course	ESME102B	Engineering Mechanics - Essentials	1	1	0	0	2	2
6	Engineering Science Course	ESCCS101	Programming for Problem Solving using C	2	1	0	0	3	3
7	General Studies Course	ESP101	Essential Studies for Professionals - I	1	0	0	0	1	1
PRACTICAL									
8	Basic Science Course	BSCCH192	Chemistry Laboratory	0	0	3	0	3	1.5
9	Humanities and social sciences including Management	HSMC191	Language laboratory	0	0	2	0	2	1
10	Engineering Science Course	ESCEC191	Basic Electronics Engineering Laboratory	0	0	2	0	2	1

11	Engineering Science Course	ESCME193	Workshop/ Manufacturing Practices	1	0	4	0	5	3
12	Engineering Science Course	ESCCS191	Programming for Problem Solving Laboratory using C	0	0	4	0	4	2
SESSIONAL									
13	Mandatory Courses	IKS171	Indian Knowledge System for Engineers	0	0	0	2	2	2
Mandatory Industry and Value Added Courses (IVC)									
14	Mandatory Industry and Value Added Courses (IVC)	IVC181	Design Thinking & Innovation- Basic	0	0	0	1	1	0
15	Mandatory Industry and Value Added Courses (IVC)	IVC182	Economics, Finance and Entrepreneurship Skills - Basic	0	0	0	1	1	0
Total Credit Points of Semester				16	5	15	4	40	30.5
16	Mandatory Courses	MAR	Mandatory Additional Requirements	0	0	0	0	0	0
17	Mandatory Online Courses	MOOCs	Massive Open Online Courses	0	0	0	0	0	0
18	Mandatory Online Courses	IFC	Industry and Foreign Certification	0	0	0	0	0	0
19	Mandatory Courses	SAR	Skill Additional Requirements	0	0	0	0	0	0
Skill Addition Requirements (SAR) 1. Foreign Language, 2. Physical Education, 3. Soft Skill									

2nd Semester (Group – B: ECE)									
Sl. No.	Type of Course	Subject code	Subject name	L	T	P	S	Total Contact Hours	Credit Points
THEORY									
1	Basic Science Course	BSCPH201	Physics	3	1	0	0	4	4
2	Basic Science Course	BSCM203A	Mathematics - Calculus	3	1	0	0	4	4
3	Basic Science Course	BSCBE204	Biology for Engineers	2	0	0	0	2	2
4	Engineering Science Course	ESCEE201	Basic Electrical Engineering	3	1	0	0	4	4
5	Engineering Science Course	ESME202A	Engineering Mechanics - Principles	1	1	0	0	2	2
6	Engineering Science Course	ESCCS202	Introduction to AI and Data Science using Python	2	1	0	0	3	3
7	General Studies Course	ESP201	Essential Studies for Professionals - II	1	0	0	0	1	1
PRACTICAL									
8	Basic Science Course	BSCPH291	Physics Laboratory	0	0	3	0	3	1.5
9	Basic Science Course	BSCBE294	Biology for Engineers Laboratory	0	0	2	0	2	1
10	Engineering Science Course	ESCEE291	Basic Electrical Engineering Laboratory	0	0	2	0	2	1
11	Engineering Science Course	ESCME292	Engineering Graphics & Design	1	0	4	0	5	3

12	Engineering Science Course	ESCCS292	Introduction to AI and Data Science Laboratory using Python	0	0	4	0	4	2
SESSIONAL									
13	Humanities and social sciences	UHV272	Universal Human Values- II	0	0	0	2	2	3
Mandatory Industry and Value Added Courses (IVC)									
14	Mandatory Industry and Value Added Courses (IVC)	IVC281	Design Thinking & Innovation- Intermediate	0	0	0	1	1	0
15	Mandatory Industry and Value Added Courses (IVC)	IVC282	Economics, Finance and Entrepreneurship Skills - Intermediate	0	0	0	1	1	0
Total Credit Points of Semester				16	5	15	4	40	31.5
16	Mandatory Courses	MAR	Mandatory Additional Requirements	0	0	0	0	0	0
17	Mandatory Online Courses	MOOCs	Massive Open Online Courses	0	0	0	0	0	0
18	Mandatory Online Courses	IFC	Industry and Foreign Certification	0	0	0	0	0	0
19	Mandatory Courses	SAR	Skill Additional Requirements	0	0	0	0	0	0
Skill Addition Requirements (SAR) 1. Foreign Language, 2. Physical Education, 3. Soft Skill									

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UNIVERSITY OF ENGINEERING & MANAGEMENT, KOLKATA, JAIPUR
6th SEMESTER

[illegible]

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7th SEMESTER

[illegible]

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8th SEMESTER

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CUMULATIVE CREDIT POINTS

A. B.Tech Course (Electronics & Communication Engineering)

SEMESTER	TOTAL CREDIT POINTS
3.	25
4.	21
5.	23
6.	24
7.	22
8.	24
Total	139 + 62(1st Year)=201

ECE Department Phygital Certificate Course Details

1st Year (1st and 2nd Sem)	All the subject mentioned in detailed syllabus		
Specialized Certificate (Learning Pathway) for 2nd Year and 3rd Year	Any one certificate during 3rd and 4th Sem.	Embedded Software Development with C Specialization	https://www.coursera.org/programs/iem-faculty-learning-program-rtv7/specializations/embedded-software-development-with-c?source=search#courses
		Semiconductor Devices Specialization	https://www.coursera.org/programs/iem-faculty-learning-program-rtv7/specializations/semiconductor-devices?source=search#courses
	Any one certificate during 5th and 6th Sem.	Digital Signal Processing Specialization	https://www.coursera.org/programs/iem-faculty-learning-program-rtv7/specializations/digital-signal-processing?source=search
		Hands-on Internet of Things Specialization	https://www.coursera.org/programs/iem-faculty-learning-program-rtv7/specializations/iuic-iiot?source=search#courses
		FPGA Design for Embedded Systems Specialization	https://www.coursera.org/programs/iem-faculty-learning-program-rtv7/specializations/fpga-design?source=search#courses
		Chip based VLSI design for Industrial Applications Specialization	https://www.coursera.org/programs/iem-faculty-learning-program-rtv7/specializations/chip-based-vlsi-design-for-industrial-applications?source=search#courses
3rd Semester Two subjects for phygital learning certificate	PCCECE304: Network Theory	1. Electrical Design Engineer - Circuit Analysis 2. Linear Circuits 2: AC Analysis 3. Basic Electronics	2. https://www.coursera.org/programs/iem-faculty-learning-program-rtv7/learn/electrical-design-engineer--circuit-analysis?source=search 2. https://www.coursera.org/programs/iem-faculty-learning-program-rtv7/learn/linear-circuits-ac-analysis?source=search 3. https://www.coursera.org/programs/iem-faculty-learning-program-rtv7/learn/basic-electronics-od?source=search
	OEC381: Data Structure & Algorithm (Sessional)	1. Data Structures and Algorithms Specialization 2. Data Structures and Algorithms 3. Data Structures and Algorithms 4. Data Structures and Algorithms 5. Data Structures and Algorithms Specialization	1. https://www.coursera.org/programs/iem-faculty-learning-program-rtv7/specializations/data-structures-algorithms?source=search 2. https://www.coursera.org/programs/iem-faculty-learning-program-rtv7/learn/msft-data-structures-and-algorithms?source=search 3. https://www.coursera.org/programs/iem-faculty-learning-program-rtv7/learn/developer-data-structures-and-algorithms?source=search 4. https://www.coursera.org/programs/iem-faculty-learning-program-rtv7/learn/bits-data-structures-and-algorithms?source=search 5. https://www.coursera.org/programs/iem-faculty-learning-program-rtv7/specializations/data-structures-algorithms-tsinghua?source=search
4th Semester Two subjects for phygital learning certificate	PCCECE401: Analog & Digital Communication	1. wireless-communications 2.Data Communication 3. Analog and Digital communication 4.Data Communication	1. https://www.coursera.org/learn/wireless-communications 2. https://www.linkedin.com/learning/computer-science-principles-digital-information/digital-communication?utm_source=linkedin&utm_medium=organic&utm_campaign=course-promotion 3. https://onlinecourses.nptel.ac.in/noc22_eet05/preview 4. https://www.linkedin.com/learning/lot-foundations-low-power-wireless-networking
	PCCECE403: Introduction to Artificial Intelligence and Machine Learning	1. Supervised Machine Learning: Regression and Classification 2. Advanced Learning Algorithms 3. Unsupervised Learning, Recommenders, Reinforcement Learning 4. Artificial Intelligence and Machine Learning (AI/ML)	1. https://www.coursera.org/learn/machine-learning?specialization=machine-learning-introduction 2. https://www.coursera.org/learn/advanced-learning-algorithms?specialization=machine-learning-introduction 3. https://www.coursera.org/learn/unsupervised-learning-recommenders-reinforcement-learning?specialization=machine-learning-introduction 4. https://www.coursera.org/learn/skills/artificial-intelligence-and-machine-learning-ai-ml?query=AI&source=search
5th Semester Two subjects for phygital learning certificate	PCCECE501: Electromagnetic Waves	1. Physics Fundamentals: Electromagnetics 2. Electrodynamics: Analysis of Electric Fields 3. Introduction to Electromagnetic Radiations	1. https://www.coursera.org/programs/iem-faculty-learning-program-rtv7/learn/fundamentals-in-electromagnetics?source=search 2. https://www.coursera.org/programs/iem-faculty-learning-program-rtv7/learn/electrodynamics-analysis-of-electric-fields?source=search 3. https://www.coursera.org/videos/design-of-transmission-line-modelling-and-performance/CndRf?query=Electromagnetic+Field+theory&source=search
	PCCECE504: Data Base Management System	1. Database Structures and Management with MySQL 2. Databases and SQL for Data Science with Python	1. https://www.coursera.org/programs/iem-faculty-learning-program-rtv7/learn/database-structures-and-management-with-mysql?source=search#modules 2. https://www.coursera.org/programs/iem-faculty-learning-program-rtv7/learn/sql-data-science?source=search#modules
6th Semester Two subjects for phygital learning certificate	OECCE604A: Deep learning with Generative AI	1. Neural Networks and Deep Learning 2. Improving Deep Neural Networks: Hyperparameter Tuning, Regularization and Optimization	1. https://www.coursera.org/learn/neural-networks-deep-learning?specialization=deep-learning 2. https://www.coursera.org/learn/deep-neural-network?specialization=deep-learning
	HSM675: Principles of Management	1. Principles of Management 2. Principles of Management 3. Principles of business management: Drivers for change 4. Managing Cross-Functional Collaboration as a Leader	1. https://www.coursera.org/learn/principles-of-management/home/module1 2. https://www.coursera.org/programs/iem-faculty-learning-program-rtv7/learn/principlesofmanagement?source=search 3. https://www.linkedin.com/learning/business-fundamentals-for-customer-success-managers/principles-of-business-management-drivers-for-change?u=229219690 4. http://linkedin.com/learning/managing-cross-functional-collaboration-as-a-leader/the-power-of-cross-functional-collaboration?u=229219690
7th Semester All subjects for phygital learning certificate	PECECE701A: Embedded System	1. Embedded Systems using C 2. Advanced Embedded Systems with Arduino	1. https://www.coursera.org/programs/iem-faculty-learning-program-rtv7/learn/embedded-systems-using-c?source=search&collectionId=skill+embedded-systems 2. https://www.coursera.org/programs/iem-faculty-learning-program-rtv7/learn/packt-advanced-embedded-systems-with-arduino-r6pus?source=search&collectionId=skill+embedded-systems
	PECECE702A: Microwave Theory and Techniques	Microwave engineering and antennas	https://www.coursera.org/programs/iem-faculty-learning-program-rtv7/learn/rfmicrowave-antenna?source=search#modules
	PECECE703A: Digital Image and Video Processing	Fundamentals of Digital Image and Video Processing	https://www.coursera.org/programs/iem-faculty-learning-program-rtv7/learn/digital?source=search
	OECCE704A: Deep Learning	Learning Deep Learning Specialization	https://www.coursera.org/programs/iem-faculty-learning-program-rtv7/specializations/pearson-learning-deep-learning-from-perception-to-large-language-models?source=search
8th Semester All subjects for phygital learning certificate	PECECE801A: Fiber Optic Communication	1. Fiber Optic Technology and FTTX 2. Understanding Copper and Fiber Optic Communication Systems	1. https://www.coursera.org/videos/computer-networking/DGB2X?source=search&query=fiber%20Optic%20Communication 2. https://www.linkedin.com/learning/understanding-copper-and-fiber-optic-communication-systems?u=6e8f8d&utm_source=linkedin&utm_medium=organic&utm_campaign=course-promotion
	PECECE802B: Antenna and Propagation Theory	1. RF/Microwave Design - Antenna Design 2. Antenna Design for IoT Communications 3. Microwave engineering and antennas 4. RF/Microwave Design - S-parameter Analysis	1. https://www.coursera.org/programs/iem-faculty-learning-program-rtv7/learn/rfmicrowave-design--antenna-design?source=search 2. https://www.coursera.org/videos/iot-communications/bigrb?source=search&query=antenna 3. https://www.coursera.org/programs/iem-faculty-learning-program-rtv7/learn/microwave-antenna?source=search 4. https://www.coursera.org/programs/iem-faculty-learning-program-rtv7/learn/rfmicrowave-design--s-parameter-analysis
	OECCE803B: Cyber Security	1. Foundations of Cybersecurity 2. Google Cybersecurity 3. Introduction to Cybersecurity Essentials 4. Cybersecurity Architecture	1. https://www.coursera.org/professional-certificates/google-cybersecurity 2. https://www.coursera.org/learn/foundations-of-cybersecurity 3. https://www.coursera.org/learn/introduction-to-cybersecurity-essentials 4. https://www.coursera.org/learn/cybersecurity-architecture
	OECCE804B: Optimization Technique	1. Optimization Technique	1. https://www.udemy.com/course/optimization-for-engineering-students 2. https://www.coursera.org/learn/basic-modeling
	ESPB02: Essential Studies for Professionals-VIII	1. 1. Banking & Finance in India 2. Contemporary Issues in World Politics 3. Basics Economics 4. Microeconomics: Foundations and Insights	1. 1. https://www.coursera.org/learn/banking-and-finance-in-india 2. https://www.coursera.org/learn/contemporary-issues-in-world-politics 3. https://www.coursera.org/programs/udemj-passout-batch-2028-54ok2/learn/basics-economics?source=search 4. https://www.coursera.org/programs/udemj-passout-batch-2028-54ok2/learn/microeconomics-foundations-insights-igu?source=search