

COURSE CURRICULUM
for
FOURTH YEAR B.TECH. DEGREE
in
INFORMATION TECHNOLOGY

(Applicable from the academic session 2024-2025)



Dr. B. C. Roy Engineering College

An Autonomous Institution

Approved by: All India Council for Technical Education (AICTE)
Affiliated to: Maulana Abul Kalam Azad University of Technology, West Bengal (Formerly Known as -WBUT)

Jemua Road, Durgapur, West Bengal, India,713206



Course Name: Sustainable Development & Environmental Science

Course Code: IT-801

(Semester-VIII)

Course Broad Category: Value Added Course

.....
1. Course Prerequisite:

Basic knowledge of Environmental science

2. Course Learning Objectives:

- I. Be able to understand the natural environment and its relationships with human activities.
- II. Be able to apply the fundamental knowledge of science and engineering to assess Environmental and health risk.
- III. Be able to understand environmental laws and regulations to develop guidelines and procedures for health and safety issues.
- IV. Be able to solve scientific problem-solving related to air, water, noise & land pollution

3. Teaching methodology and evaluation system for the course:

Teaching methodology – Lectures and Presentations, Interactive Discussions and Case Studies.

Evaluation System –

- A. Mid-Term Exam (20 Marks)- Summative Assessment (CIA-1)
- B. Internal Assessment (20 Marks)- Formative Continuous Assessment [Continuous Assessment 1 (CIA-2)]
- C. End-Semester Exam (60 Marks)- Summative Assessment.

4. Course Content:

Course Name: Sustainable Development & Environmental Science

Course Code: IT-801

Hours per Week: 3L: 0T: 0P

Credits: 3

Module	Topics	Lectures
1	Basic ideas of environment, Ecosystem, Segments of environment (1L) Mathematics of population growth and associated problems, Importance of population study in environmental engineering, definition of resource, types of resource, renewable, non-renewable, potentially renewable, effect of excessive use vis-à-vis population growth, Sustainable Development. (2L)	6

	<p>Environmental degradation: Natural environmental Hazards like Flood, earthquake, Landslide-causes, effects and control/management; Anthropogenic degradation like Acid rain-cause, effects and control. Nature and Scope of Environmental Science and Engineering. (2L)</p> <p>Biodiversity- types, importance, Endemic species, Biodiversity hot-spot. (1L)</p>	
2	<p>Atmospheric Composition: Troposphere, Stratosphere, Mesosphere, Thermosphere, Tropopause and Mesopause. (1L)</p> <p>Energy balance: Conductive and Convective heat transfer, radiation heat transfer, simple global temperature model [Earth as a black body] (1L)</p> <p>Green house effects: Definition, impact of greenhouse gases on the global climate and consequently on sea water level, agriculture and marine food. Global warming and its consequence, Control of Global warming. (1L)</p> <p>Lapse rate: Ambient lapse rate Adiabatic lapse rate, atmospheric stability, temperature inversion (radiation inversion). (2L)</p> <p>Definition of pollutants and contaminants, Primary and secondary pollutants: emission standard, criteria pollutant. Sources and effect of different air pollutants- Suspended particulate matter, oxides of carbon, oxides of nitrogen, oxides of sulphur, particulate, PAN. (2L)</p> <p>Smog, Photochemical smog and London smog. Depletion Ozone layer: CFC, destruction of ozone layer by CFC, impact of other green-house gases, effect of ozone modification. (1L)</p> <p>Standards and control measures: Industrial, commercial and residential air quality standards, control measure (ESP. cyclone separator, bag house, catalytic converter, scrubber (ventury) (1L)</p>	9
3	<p>Hydrosphere, Hydrological cycle and Natural water. Pollutants of water, their origin and effects: Oxygen demanding wastes, pathogens, nutrients, Salts, thermal application, heavy metals, pesticides, volatile organic compounds. (2L)</p> <p>River/Lake/ground water pollution: River: DO, 5-day BOD test, Seeded BOD test, BOD reaction rate constants, Effect of oxygen demanding wastes on river [deoxygenation, reaeration], COD, Oil, Greases, pH. (2L)</p>	8

	<p>Lake: Eutrophication [Definition, source and effect]. (1L) Ground water: Aquifers, hydraulic gradient, ground water flow. (1L)</p> <p>Waste water standard [BOD, COD] Water Treatment system [coagulation and flocculation, sedimentation and filtration, disinfection, hardness and alkalinity, softening] Wastewater treatment system, primary and secondary treatments [Trickling filters, rotating biological contractor, Activated sludge, sludge treatment, oxidation ponds] tertiary treatment definition. (2L)</p> <p>Water pollution due to the toxic elements and their biochemical effects: Lead, Mercury, Cadmium, and Arsenic (1L)</p>	
4	<p>Lithosphere; Internal structure of earth, rock and soil (1L)</p> <p>Solid Waste: Municipal, industrial, commercial, agricultural, domestic, pathological and hazardous solid waste. Recovery and disposal method- Open dumping, Land filling, incineration, composting, recycling. Solid waste management and control (hazardous and biomedical waste). (2L)</p>	3
5	<p>Definition of noise, effect of noise pollution, noise classification [Transport noise, occupational noise, neighborhood noise] (1L)</p> <p>Definition of noise frequency, noise pressure, noise intensity, noise threshold limit value, equivalent noise level, Noise pollution control. (1L)</p>	2
6	<p>Introduction to Energy Sources: World energy futures, Conventional energy sources, Nonconventional energy sources, renewable energy sources, Prospects of renewable energy sources, application of non-conventional and renewal energy sources, smart grid. (2L)</p>	2

5. References:

Text & References Books:

1. Masters, G. M., "Introduction to Environmental Engineering and Science", Prentice-Hall of India Pvt. Ltd., 1991.
2. De, A. K., "Environmental Chemistry", New Age International
3. N. Acharjee, P Dhar "Environmental studies", U. N. Dhar

6. Course Outcomes:

Course Outcomes	Details/Statement	Action Verb	Knowledge Level
IT-801.CO1	Explain fundamental concepts of environment, ecosystem, biodiversity, and natural resources, including their types and significance in sustainable development.	Understand	L2
IT-801.CO2	Apply mathematical models of population growth and resource utilization to analyze environmental challenges and propose sustainable solutions.	Apply	L3
IT-801.CO3	Analyze causes, effects, and control measures of environmental degradation (natural hazards, anthropogenic impacts, air and water pollution) using scientific principles.	Analyze	L4
IT-801.CO4	Evaluate pollution control technologies and treatment systems (air quality devices, water treatment, solid waste management) for their effectiveness in mitigating environmental problems.	Analyze	L4
IT-801.CO5	Design integrated strategies for environmental management, combining knowledge of hydrosphere, lithosphere, atmosphere, and energy resources to promote sustainability.	Understand	L2
IT-801.CO6	Assess the societal, health, and economic impacts of environmental issues (noise pollution, toxic elements, energy futures) and recommend policies or practices for responsible environmental stewardship.	Understand	L2

7. Mapping of course outcomes to module / course content

Module	CO1	CO2	CO3	CO4	CO5	CO6
1						
2						
3						
4						
5						
6						

8. Mapping of the Course Outcomes to Program Outcomes

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1												
CO2												
CO3												
CO4												
CO5												
CO6												

9. Mapping to PSO

	PSO1	PSO2	PSO3	PSO4
CO1				
CO2				
CO3				
CO4				
CO5				
CO6				

***** End of Syllabus*****



Course Name: Cyber Security

Course Code: IT-802

(Semester-VIII)

Course Broad Category: Professional Elective Course

.....
1. Course Prerequisite:

Basic knowledge of Computer Networks, Mathematics III, Discrete Mathematics

2. Course Learning Objectives:

- I. To introduce fundamental concepts of cyber security, threats, and defense mechanisms.
- II. To develop awareness of ethical, legal, and professional issues in cyber security.
- III. To equip students with practical skills in securing systems, networks, and applications.
- IV. To prepare students for industry practices in risk management and compliance.

3. Teaching methodology and evaluation system for the course:

Teaching methodology – Lectures and Presentations, Interactive Discussions and Case Studies.

Evaluation System –

- A. Mid-Term Exam (20 Marks)- Summative Assessment (CIA-1)
- B. Internal Assessment (20 Marks)- Formative Continuous Assessment [Continuous Assessment 1 (CIA-2)]
- C. End-Semester Exam (60 Marks)- Summative Assessment.

4. Course Content:

Course Name: Cyber Security

Course Code: IT-802

Hours per Week: 3L: 0T: 0P

Credits: 3

Module	Topics	Lectures
1	Introduction to Cyber Security: Basics of security, CIA triad, cyber threats, vulnerabilities, attack surfaces	4
2	Cyber Attacks & Defense Mechanisms: Malware, phishing, DoS/DDoS, SQL injection, firewalls, IDS/IPS	6
3	Cryptography & Authentication: Symmetric/asymmetric encryption, hashing, digital signatures, PKI, MFA	6

4	System & Network Security: OS hardening, patch management, secure configuration, VPNs, wireless security	6
5	Web & Application Security: Secure coding practices, OWASP Top 10, input validation, session management	5
6	Risk Management & Compliance: Risk assessment, ISO 27001, GDPR, IT Act (India), security policies	5
7	Ethical & Legal Aspects: Cyber laws, ethics in hacking, privacy concerns, case studies	4

5. References:

Text & References Books:

1. William Stallings, Cryptography and Network Security
2. Mark Ciampa, Security+ Guide to Network Security Fundamentals
3. Nina Godbole & Sunit Belapure, Cyber Security: Understanding Cyber Crimes, Computer Forensics and Legal Perspectives

6. Course Outcomes:

Course Outcomes	Details/Statement	Action Verb	Knowledge Level
IT-802.CO1	Explain the fundamental concepts of cyber security, including threats, vulnerabilities, and attack vectors.	Understand	L2
IT-802.CO2	Analyze different types of cyber-attacks and evaluate appropriate defense mechanisms.	Analyze	L4
IT-802.CO3	Apply cryptographic techniques and authentication methods to secure data and communication.	Apply	L3
IT-802.CO4	Demonstrate practical skills in securing operating systems, networks, and web applications.	Apply	L3
IT-802.CO5	Evaluate risk management strategies, security policies, and compliance frameworks.	Evaluate	L5
IT-802.CO6	Discuss ethical, legal, and societal issues related to cyber security in professional practices.	Understand	L2

7. Mapping of course outcomes to module / course content

Module	CO1	CO2	CO3	CO4	CO5	CO6
1						
2						
3						
4						
5						
6						

8. Mapping of the Course Outcomes to Program Outcomes

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1												
CO2												
CO3												
CO4												
CO5												
CO6												

9. Mapping to PSO

	PSO1	PSO2	PSO3	PSO4
CO1				
CO2				
CO3				
CO4				
CO5				
CO6				

***** End of Syllabus*****



Course Name: Artificial Intelligence (AI) Theory
Course Code: PE IT-803 (Semester – VIII)
Course Broad Category: Professional Elective Course

1. Course Prerequisite

- Data Structures
- Probability and Statistics

2. Course Learning Objectives

- Understand the foundations of AI, intelligent agents, and search strategies.
- Learn problem-solving techniques, knowledge representation, and reasoning.
- Explore machine learning and learning algorithms.
- Analyze natural language processing and expert systems.
- Evaluate AI applications in real-world scenarios.
- Design AI solutions for practical problems.

3. Teaching Methodology and Evaluation System

Teaching Methodology:

Lectures, case studies, hands-on programming, mini-projects, and ICT-enabled learning.

Evaluation System:

- Continuous Internal Evaluation (CIE) – 40 Marks
- End-Semester Examination (ESE) – 60 Marks

4. Course Content: Modules

Module	Content
1	Introduction to AI <ul style="list-style-type: none">• AI history, definitions, intelligent agents• Problem solving and search strategies (uninformed & informed)
2	Knowledge Representation and Reasoning <ul style="list-style-type: none">• Propositional and predicate logic• Inference rules, resolution• Semantic networks and frames
3	Machine Learning Basics <ul style="list-style-type: none">• Supervised, unsupervised, and reinforcement learning• Decision trees, neural networks• Evaluation metrics and model selection
4	Expert Systems and NLP <ul style="list-style-type: none">• Expert system architecture• Knowledge-based systems• Natural Language Processing introduction
5	AI Applications <ul style="list-style-type: none">• Robotics, computer vision• Game playing and optimization• Ethical and societal implications
6	Mini Project / Case Studies <ul style="list-style-type: none">• Implement AI algorithms for small problems• Analyze results and present findings• Documentation and report preparation

5. References

1. Stuart Russell and Peter Norvig, *Artificial Intelligence: A Modern Approach*, 4th Edition.
2. Aurélien Géron, *Hands-On AI with Python*, O'Reilly.
3. Elaine Rich and Kevin Knight, *Artificial Intelligence*, 3rd Edition.

4. Ian Goodfellow, Yoshua Bengio, Aaron Courville, *Deep Learning*, MIT Press.

6. Course Outcomes (CO)

Course Outcome	Details	Bloom's Taxonomy	Level
PE-IT803.1	Understand AI concepts, intelligent agents, and search techniques.	Understand	L2
PE-IT803.2	Explain knowledge representation, reasoning, and problem-solving methods.	Understand	L2
PE-IT803.3	Apply AI learning algorithms and machine learning techniques.	Apply	L3
PE-IT803.4	Analyze AI models for decision making, NLP, and expert systems.	Analyze	L4
PE-IT803.5	Evaluate AI solutions for optimization and real-world applications.	Evaluate	L5
PE-IT803.6	Design and implement AI-based systems for practical problems.	Create	L5

7. Mapping of Course Outcomes to Course Content (Modules)

Module	CO1	CO2	CO3	CO4	CO5	CO6
1						
2						
3						
4						
5						
6						

8. Mapping of Course Outcomes to Program Outcomes (PO)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	1	0	0	0	0	0	0	0	1	0	0
CO2	1	1	0	0	0	0	0	0	0	1	0	0
CO3	2	2	2	1	1	0	0	0	1	2	0	0
CO4	2	2	2	2	1	0	0	1	1	2	0	0
CO5	3	3	2	2	2	1	1	1	1	3	0	1
CO6	3	3	3	2	2	1	1	1	2	3	1	1
AVG.	2	2	2	1.5	1.3	0.3	0.3	0.5	0.8	2	0.3	0.3

9. Mapping to Program Specific Outcomes (PSO)

	PSO1	PSO2	PSO3	PSO4
CO1	1	1	0	0
CO2	1	1	0	0
CO3	2	2	1	0
CO4	2	2	1	1
CO5	3	2	2	1
CO6	3	3	3	2

*** End of Syllabus ***



Course Name: Quantum Computing

Course Code: IT-804

(Semester-VIII)

Course Broad Category: Professional Elective Course

.....
1. Course Prerequisite:

Mathematics III, Discrete Mathematics

2. Course Learning Objectives:

- I. To introduce the fundamental principles of quantum mechanics relevant to computing.
- II. To explain the architecture and functioning of quantum computers.
- III. To develop skills in quantum algorithms and their applications.
- IV. To expose students to quantum programming frameworks and simulation tools.
- V. To discuss challenges, limitations, and future directions of quantum computing.

3. Teaching methodology and evaluation system for the course:

Teaching methodology – Lectures and Presentations, Interactive Discussions and Case Studies.

Evaluation System –

- A. Mid-Term Exam (20 Marks)- Summative Assessment (CIA-1)
- B. Internal Assessment (20 Marks)- Formative Continuous Assessment [Continuous Assessment 1 (CIA-2)]
- C. End-Semester Exam (60 Marks)- Summative Assessment.

4. Course Content:

Course Name: Quantum Computing

Course Code: IT-804

Hours per Week: 3L: 0T: 0P

Credits: 3

Module	Topics	Lectures
1	Introduction to Quantum Computing: Classical vs quantum computing, qubits, superposition, entanglement	4
2	Quantum Gates & Circuits: Pauli gates, Hadamard, CNOT, unitary operations, measurement	6
3	Quantum Algorithms – I: Deutsch-Jozsa algorithm, Grover's search algorithm	6

4	Quantum Algorithms – II: Shor’s factoring algorithm, Quantum Fourier Transform	6
5	Quantum Hardware & Architectures: Quantum computer models, superconducting qubits, ion traps, error correction	5
6	Quantum Programming & Simulation: Introduction to Qiskit, Cirq, building and simulating circuits	5
7	Applications & Challenges: Cryptography, optimization, machine learning, limitations, future prospects	4

5. References:

Text & References Books:

1. Michael A. Nielsen & Isaac L. Chuang, Quantum Computation and Quantum Information
2. Chris Bernhardt, Quantum Computing for Everyone
3. Robert S. Sutor, Dancing with Qubits: How quantum computing works and how it can change the world

6. Course Outcomes:

Course Outcomes	Details/Statement	Action Verb	Knowledge Level
IT-804.CO1	Explain the principles of quantum mechanics underlying quantum computation.	Understand	L2
IT-804.CO2	Describe the architecture and operation of quantum computers and qubits.	Understand	L2
IT-804.CO3	Apply quantum gates and circuits to solve basic computational problems.	Apply	L3
IT-804.CO4	Analyze key quantum algorithms such as Deutsch-Jozsa, Grover’s search, and Shor’s factoring.	Analyze	L4
IT-804.CO5	Demonstrate programming skills using quantum simulation tools (e.g., Qiskit, Cirq).	Apply	L3
IT-804.CO6	Evaluate the limitations, challenges, and potential applications of quantum computing in real-world contexts.	Evaluate	L5

7. Mapping of course outcomes to module / course content

Module	CO1	CO2	CO3	CO4	CO5	CO6
1						
2						
3						
4						
5						
6						

8. Mapping of the Course Outcomes to Program Outcomes

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1												
CO2												
CO3												
CO4												
CO5												
CO6												

9. Mapping to PSO

	PSO1	PSO2	PSO3	PSO4
CO1				
CO2				
CO3				
CO4				
CO5				
CO6				

***** End of Syllabus*****



Course Name: Cloud Computing

Course Code: IT-805

(Semester-VIII)

Course Broad Category: Professional Elective Course

.....
1. Course Prerequisite:

Strong foundation in networking, operating systems (especially Linux), and databases

2. Course Learning Objectives:

- I. To introduce the fundamental concepts and service models of cloud computing.
- II. To explain virtualization, resource management, and deployment models.
- III. To develop practical skills in cloud platforms and services.
- IV. To analyze security, compliance, and governance issues in cloud environments.
- V. To explore applications of cloud computing in industry and research

3. Teaching methodology and evaluation system for the course:

Teaching methodology – Lectures and Presentations, Interactive Discussions and Case Studies.

Evaluation System –

- A. Mid-Term Exam (20 Marks)- Summative Assessment (CIA-1)
- B. Internal Assessment (20 Marks)- Formative Continuous Assessment
[Continuous Assessment 1 (CIA-2)]
- C. End-Semester Exam (60 Marks)- Summative Assessment.

4. Course Content:

Course Name: Cloud Computing

Course Code: IT-805

Hours per Week: 3L: 0T: 0P

Credits: 3

Module	Topics	Lectures
1	Introduction to Cloud Computing: Definition, characteristics, service models (IaaS, PaaS, SaaS), benefits & challenges	4
2	Cloud Architecture & Deployment Models: Public, private, hybrid, community clouds; cloud reference architecture	6
3	Virtualization & Resource Management: Hypervisors, VM provisioning, containers, orchestration (Docker, Kubernetes)	6

4	Cloud Platforms & Services: AWS, Azure, Google Cloud basics; storage, compute, networking services	6
5	Cloud Security & Compliance: Identity management, data protection, compliance standards (ISO, GDPR), governance	5
6	Emerging Trends & Applications: Cloud in IoT, big data analytics, AI/ML workloads, serverless computing	5
7	Case Studies & Industry Practices: Cloud adoption strategies, migration challenges, real-world applications	4

5. References:

Text & References Books:

1. Rajkumar Buyya, Christian Vecchiola, S. Thamarai Selvi, Mastering Cloud Computing
2. Thomas Erl, Zaigham Mahmood, Ricardo Puttini, Cloud Computing: Concepts, Technology & Architecture
3. Anthony T. Velte, Toby J. Velte, Robert Elsenpeter, Cloud Computing: A Practical Approach

6. Course Outcomes:

Course Outcomes	Details/Statement	Action Verb	Knowledge Level
IT-805.CO1	Explain the fundamental concepts, architecture, and service models of cloud computing.	Understand	L2
IT-805.CO2	Differentiate between various deployment models (public, private, hybrid) and their applications.	Understand	L2
IT-805.CO3	Apply virtualization and resource management techniques in cloud environments.	Apply	L3
IT-805.CO4	Demonstrate practical skills in using cloud platforms (e.g., AWS, Azure, Google Cloud) for application deployment.	Understand	L2
IT-805.CO5	Analyze cloud security challenges, compliance frameworks, and governance policies.	Analyze	L4
IT-805.CO6	Evaluate the role of cloud computing in emerging technologies such as IoT, big data, and AI.	Evaluate	L5

7. Mapping of course outcomes to module / course content

Module	CO1	CO2	CO3	CO4	CO5	CO6
1						
2						
3						
4						
5						
6						

8. Mapping of the Course Outcomes to Program Outcomes

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1												
CO2												
CO3												
CO4												
CO5												
CO6												

9. Mapping to PSO

	PSO1	PSO2	PSO3	PSO4
CO1				
CO2				
CO3				
CO4				
CO5				
CO6				

***** End of Syllabus*****



Course Name: Advanced Computer Networks

Course Code: IT-806

(Semester-VIII)

Course Broad Category: Professional Elective Course

.....
1. Course Prerequisite:

Strong foundation in networking, operating systems (especially Linux), and databases

2. Course Learning Objectives:

- I. To provide in-depth knowledge of advanced networking concepts, protocols, and architectures.
- II. To develop analytical skills for designing and managing complex networks.
- III. To expose students to emerging technologies in networking such as SDN, IoT, and 5G.
- IV. To equip students with practical skills in network simulation, configuration, and troubleshooting.
- V. To prepare students for industry practices in performance optimization and network security.

3. Teaching methodology and evaluation system for the course:

Teaching methodology – Lectures and Presentations, Interactive Discussions and Case Studies.

Evaluation System –

- A. Mid-Term Exam (20 Marks)- Summative Assessment (CIA-1)
- B. Internal Assessment (20 Marks)- Formative Continuous Assessment [Continuous Assessment 1 (CIA-2)]
- C. End-Semester Exam (60 Marks)- Summative Assessment.

4. Course Content:

Course Name: Advanced Computer Networks

Course Code: IT-806

Hours per Week: 3L: 0T: 0P

Credits: 3

Module	Topics	Lectures
1	Advanced Network Architectures: Layered models, TCP/IP extensions, high-speed networks, optical networking	4
2	Routing & Switching Protocols: Advanced routing (BGP, OSPF, EIGRP), MPLS,	6

	switching techniques	
3	Congestion Control & QoS: Traffic engineering, QoS models, scheduling, resource allocation	6
4	Network Simulation & Performance Analysis: Tools (NS2/NS3, Packet Tracer), metrics, case studies	6
5	Emerging Networking Technologies: SDN, NFV, IoT networking protocols, 5G architecture	5
6	Network Security in Advanced Systems: Intrusion detection, firewalls, VPNs, secure routing, case studies	5
7	Industry Applications & Case Studies: Cloud networking, data center networks, enterprise solutions	4

5. References:

Text & References Books:

1. Andrew S. Tanenbaum & David J. Wetherall, Computer Networks
2. Behrouz A. Forouzan, Data Communications and Networking
3. Larry L. Peterson & Bruce S. Davie, Computer Networks: A Systems Approach

6. Course Outcomes:

Course Outcomes	Details/Statement	Action Verb	Knowledge Level
IT-806.CO1	Explain advanced networking architectures, protocols, and standards.	Understand	L2
IT-806.CO2	Analyze routing, switching, and congestion control mechanisms in large-scale networks.	Analyze	L4
IT-806.CO3	Apply network simulation tools to design and evaluate performance of complex networks.	Apply	L3
IT-806.CO4	Demonstrate configuration and troubleshooting skills in advanced network environments.	Apply	L3
IT-806.CO5	Evaluate emerging technologies such as Software-Defined Networking (SDN), Internet of Things (IoT), and 5G.	Understand	L2
IT-806.CO6	Discuss network security challenges, policies, and solutions in advanced networking contexts.	Analyze	L4

7. Mapping of course outcomes to module / course content

Module	CO1	CO2	CO3	CO4	CO5	CO6
1						
2						
3						
4						
5						
6						

8. Mapping of the Course Outcomes to Program Outcomes

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1												
CO2												
CO3												
CO4												
CO5												
CO6												

9. Mapping to PSO

	PSO1	PSO2	PSO3	PSO4
CO1				
CO2				
CO3				
CO4				
CO5				
CO6				

***** End of Syllabus*****