



GEETHANJALI INSTITUTE OF SCIENCE & TECHNOLOGY:: NELLORE

(Approved by AICTE, New Delhi & Affiliated to JNTUA, Anantapur)
Gangavaram (V), Kovur(M), SPSR Nellore (Dt), AP, India- 524137, www.gist.edu.in

UG/PG	Regulation	Branch	Year/ Sem	Course Name	Credits
UG	R15	ECE	III-I	Social Values & Ethics (15A99501)	0
		CE	III-I	Social Values & Ethics (15A99501)	0
		ME	III-I	Social Values & Ethics (15A99501)	0
		EEE	III-I	Social Values & Ethics (15A99501)	0
		CSE	III-I	Social Values & Ethics (15A99501)	0
		ECE	III-II	Intellectual Property Rights (15A01608)	3
		CE	III-II	Intellectual Property Rights (15A01608)	3
		ME	III-II	Intellectual Property Rights (15A01608)	3
		EEE	III-II	Intellectual Property Rights (15A01608)	3
		CSE	III-II	Intellectual Property Rights (15A01608)	3
		CSE	IV-I	Information Security(15A05702)	3
		CSE	IV-II	Cyber Security(15A05806)	3
	R13	ECE	II-I	Human Values & Professional Ethics (13A52301)	0
		CE	III-II	Human Values & Professional Ethics (13A52301)	0
		ME	II-I	Human Values & Professional Ethics (13A52301)	0
		CSE	II-II	Human Values & Professional Ethics (13A52301)	0
		EEE	III-I	Human Values & Professional Ethics (13A52301)	0
		CSE	IV-I	Cryptography & Network Security (13A05702)	3
	PG	-	CSE	I-III	Human Values & Professional Ethics (17D20302)
CSE			I-III	Intellectual Property Rights (17D20303)	4
CSE			I-II	Network Security & Cryptography (17D08102)	4

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR

B. Tech III-I Sem. (C.E)

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2	0	2	0

15A99501 SOCIAL VALUES & ETHICS (AUDIT COURSE)
(Common to all Branches)

UNIT - I

Introduction and Basic Concepts of Society: Family and Society: Concept of family, community, PRIs and other community based organizations and society, growing up in the family – dynamics and impact, Human values, Gender Justice.

Channels of Youth Moments for National Building: NSS & NCC: History, philosophy, aims & objectives; Emblems, flags, mottos, songs, badge etc.; Organizational structure, roles and responsibilities of various NSS functionaries. **Nehru Yuva Kendra (NYK):** Activities – Socio Cultural and Sports.

UNIT – II

Activities of NSS, NCC, NYK:

Citizenship: Basic Features Constitution of India, Fundamental Rights and Fundamental Duties, Human Rights, Consumer awareness and the legal rights of the consumer, RTI.

Youth and Crime: Sociological and psychological Factors influencing youth crime, Peer Mentoring in preventing crimes, Awareness about Anti-Ragging, Cyber Crime and its prevention, Juvenile Justice

Social Harmony and National Integration: Indian history and culture, Role of youth in peace-building and conflict resolution, Role of youth in Nation building.

UNIT – III

Environment Issues: Environment conservation, enrichment and Sustainability, Climate change, Waste management, Natural resource management (Rain water harvesting, energy conservation, waste land development, soil conservations and afforestation).

Health, Hygiene & Sanitation: Definition, needs and scope of health education, Food and Nutrition, Safe drinking water, Sanitation, Swachh Bharat Abhiyan.

Disaster Management: Introduction to Disaster Management, classification of disasters, Role of youth in Disaster Management. Home Nursing, First Aid.

Civil/ Self Defense: Civil defense services, aims and objectives of civil defense, Need for self defense training – Teakwondo, Judo, karate etc.,

UNIT – IV

Gender Sensitization: Understanding Gender – Gender inequality – Role of Family, Society and State; Challenges – Declining Sex Ratio – Sexual Harassment – Domestic Violence; Gender Equality – Initiatives of Government – Schemes, Law; Initiatives of NGOs – Awareness, Movements;

UNIT - V

Physical Education : Games & Sports: Health and Recreation – Biological basis of Physical activity – benefits of exercise – Physical, Psychological, Social; Physiology of Muscular Activity, Respiration, Blood Circulation.

Yoga: Basics of Yoga – Yoga Protocol, Postures, Asanas, Pranayama: Introduction of Kriyas, Bandhas and Mudras.

TEXT BOOKS:

1. NSS MANUAL
2. SOCIETY AND ENVIRONMENT: A.S.Chauha, Jain Brothers Publications, 6th Edition, 2006
3. INDIAN SOCIAL PROBLEM: G.R.Madan, Asian Publisher House
4. INDIAN SOCIAL PROBLEM: Ram Ahuja, Rawat Publications
5. HUMAN SOCIETY: Kingsley Davis, Macmillan
6. SOCIETY: Mac Iver D Page, Macmillan
7. SOCIOLOGY – THEMES AND PERSPECTIVES: Michael Honalambos, Oxford University Press
8. CONSTITUTION OF INDIA: D.D.Basu, Lexis Nexis Butterworth Publishers
9. National Youth Policy 2014 (available on www.yas.nic.in)
10. TOWARDS A WORLD OF EQUALS: A.Suneetha, Uma Bhrugudanda, Duggirala Vasantha, Rama Melkote, Vasudha Nagraj, Asma Rasheed, Gogu Shyamala, Deepa Streenivas and Susie Tharu
11. LIGHT ON YOGA : B.K.S.Iyengar, Penguin Random House Publishers
www.un.org www.india.gov.in www.yas.nic.in
<http://www.who.int/countries/ind/en/>
<http://www.ndma.gov.in>
<http://ayush.gov.in/event/common-yoga-protocol-2016-0>

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR

B. Tech III-II Sem. (CSE)

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**15A01608 INTELLECTUAL PROPERTY RIGHTS
(CBCC-I)**

Course Objectives:

This course introduces the student to the basics of Intellectual Property Rights, Copy Right Laws Trade Marks and Issues related to Patents. The overall idea of the course is to help and encourage the student for startups and innovations.

Course Outcomes:

On completion of this course, the student will have an understanding of the following:

- a) *Intellectual Property Rights and what they mean*
- b) *Trade Marks and Patents and how to register them*
- c) *Laws Protecting the Trade Marks and Patents*
- d) *Copy Right and laws related to it.*

UNIT – I

Introduction To Intellectual Property: Introduction, Types Of Intellectual Property, International Organizations, Agencies And Treaties, Importance Of Intellectual Property Rights.

UNIT – II

Trade Marks : Purpose And Function Of Trade Marks, Acquisition Of Trade Mark Rights, Protectable Matter, Selecting And Evaluating Trade Mark, Trade Mark Registration Processes.

UNIT – III

Law Of Copy Rights : Fundamental Of Copy Right Law, Originality Of Material, Rights Of Reproduction, Rights To Perform The Work Publicly, Copy Right Ownership Issues, Copy Right Registration, Notice Of Copy Right, International Copy Right Law.

Law Of Patents : Foundation Of Patent Law, Patent Searching Process, Ownership Rights And Transfer

UNIT – IV

Trade Secrets : Trade Secrete Law, Determination Of Trade Secrete Status, Liability For Misappropriations Of Trade Secrets, Protection For Submission, Trade Secrete Litigation.

Unfair Competition : Misappropriation Right Of Publicity, False Advertising.

UNIT – V

New Developments Of Intellectual Property: New Developments In Trade Mark Law ;
Copy Right Law, Patent Law, Intellectual Property Audits.
International Overview On Intellectual Property, International – Trade Mark Law, Copy
Right Law, International Patent Law, International Development In Trade Secrets Law.

TEXT BOOKS & REFERENCES:

1. Intellectual Property Rights, Deborah. E. Bouchoux, Cengage Learning.
2. Intellectual Property Rights– Unleashmy The Knowledge Economy, Prabuddha
Ganguli, Tate Mc Graw Hill Publishing Company Ltd.,

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR

B. Tech IV-I Sem. (CSE)

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15A05702 INFORMATION SECURITY**Course Objectives:**

- Extensive, thorough and significant understanding of the concepts, issues, principles and theories of computer network security
- Identifying the suitable points for applying security features for network traffic
- Understanding the various cryptographic algorithms and implementation of the same at software level
- Understanding the various attacks, security mechanisms and services

Course Outcomes:

- Protect the network from both internal and external attacks
- Design of new security approaches
- Ability to choose the appropriate security algorithm based on the requirements.

Unit-I

Computer Security concepts, The OSI Security Architecture, Security attacks, Security services and Security mechanisms, A model for Network Security

Classical encryption techniques- symmetric cipher model, substitution ciphers, transposition ciphers, Steganography.

Modern Block Ciphers: Block ciphers principles, Data encryption standard (DES), Strength of DES, linear and differential cryptanalysis, block cipher modes of operations, AES, RC4.

Unit-II

Introduction to Number theory – Integer Arithmetic, Modular Arithmetic, Matrices, Linear Congruence, Algebraic Structures, $GF(2^n)$ Fields, Primes, Primality Testing, Factorization, Chinese remainder Theorem, Quadratic Congruence, Exponentiation and Logarithm.

Public-key cryptography - Principles of public-key cryptography, RSA Algorithm, Diffie-Hellman Key Exchange, ElGamal cryptographic system, Elliptic Curve Arithmetic, Elliptic curve cryptography

Unit-III

Cryptographic Hash functions: Applications of Cryptographic Hash functions, Requirements and security, Hash functions based on Cipher Block Chaining, Secure Hash Algorithm (SHA)

Message Authentication Codes: Message authentication Requirements, Message authentication functions, Requirements for Message authentication codes, security of MACs, HMAC, MACs based on Block Ciphers, Authenticated Encryption
Digital Signatures-RSA with SHA & DSS

Unit-IV

Key Management and distribution: Symmetric key distribution using Symmetric Encryption, Symmetric key distribution using Asymmetric, Distribution of Public keys, X.509 Certificates, Public key Infrastructure.

User Authentication: Remote user Authentication Principles, Remote user Authentication using Symmetric Encryption, Kerberos, Remote user Authentication using Asymmetric Encryption, Federated Identity Management, Electronic mail security: Pretty Good Privacy (PGP), S/MIME.

Unit-V

Security at the Transport Layer(SSL and TLS) : SSL Architecture, Four Protocols, SSL Message Formats, Transport Layer Security, HTTPS, SSH

Security at the Network layer (IPSec): Two modes, Two Security Protocols, Security Association, Security Policy, Internet Key Exchange.

System Security: Description of the system, users, Trust and Trusted Systems, Buffer Overflow and Malicious Software, Malicious Programs, worms, viruses, Intrusion Detection System(IDS), Firewalls

Text books:

1. "Cryptography and Network Security", Behrouz A. Frouzan and Debdeep Mukhopadhyay, Mc Graw Hill Education, 2nd edition, 2013.
2. "Cryptography and Network Security: Principals and Practice", William Stallings, Pearson Education , Fifth Edition, 2013.

References:

1. "Network Security and Cryptography", Bernard Menezes , Cengage Learning.
2. "Cryptography and Security", C.K. Shymala, N. Harini and Dr. T.R. Padmanabhan, Wiley-India.
3. "Applied Cryptography, Bruce Schneier, 2nd edition, John Wiley & Sons.
4. "Cryptography and Network Security", Atul Kahate, TMH.
5. 'Introduction to Cryptography", Buchmann, Springer.
6. 'Number Theory in the Spirit of Ramanujan", Bruce C.Berndt, University Press
7. "Introduction to Analytic Number Theory", Tom M.Apostol, University Press

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR
B. Tech IV-II Sem. (CSE)

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**15A05806 CYBER SECURITY
(MOOCS-III)**
Course Objectives:

- Appraise the current structure of cyber security roles across the DoD enterprise, including the roles and responsibilities of the relevant organizations.
- Evaluate the trends and patterns that will determine the future state of cyber security

Course Out comes:

- Analyze threats and risks within context of the cyber security architecture
- Appraise cyber security incidents to apply appropriate response
- Evaluate decision making outcomes of cyber security scenarios

Unit-I

Cyber crime: Mobile and Wireless devices-Trend mobility-authentication service security-Attacks on mobile phones-mobile phone security Implications for organizations-Organizational measurement for Handling mobile-Security policies and measures in mobile computing era. Cases.

Unit-II

Tools and methods used in cyber crime-Proxy servers and Anonymizers-Phishing>Password cracking-Key loggers and Spy wares-Virus and worms-Trojan Horse and Backdoors-Steganography-SQL Injection-Buffer overflow-Attacks on wireless network. Cases.

Unit-III

Understanding computer forensic-Historical background of cyber forensicForensic analysis of e-mail-Digital forensic life cycle-Network forensic-Setting up a computer forensic Laboratory-Relevance of the OSI 7 Layer model to computer Forensic-Computer forensic from compliance perspectives. Cases.

Unit-IV

Forensic of Hand –Held Devices-Understanding cell phone working characteristics-Hand-Held devices and digital forensic- Toolkits for Hand-Held device-Forensic of i-pod and digital music devices-Techno legal Challenges with evidence from hand-held Devices. Cases.

Unit-V

Cyber Security –Organizational implications-cost of cybercrimes and IPR issues Web threats for organizations: the evils and Perils-Social media marketing Security and privacy Implications-Protecting people privacy in the organizations Forensic best practices for organizations. Cases.

Text book:

1. Nina Godbole & Sunit Belapure "Cyber Security", Wiley India, 2012.

REFERENCES:

1. Harish Chander, "cyber laws & IT protection", PHI learning pvt.ltd, 2012.
2. Dhiren R Patel, "Information security theory & practice", PHI learning pvt ltd, 2010.
3. MS.M.K.Geetha & Ms.Swapne Raman "Cyber Crimes and Fraud Management, "MACMILLAN, 2012. Pankaj Agarwal : Information Security & Cyber Laws (Acme Learning), Excel, 2013.
4. Vivek Sood, Cyber Law Simplified, TMH, 2012.

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR

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B.Tech. II - I Sem.

2

(13A52301) HUMAN VALUES & PROFESSIONAL ETHICS (AUDIT COURSE)

Course Objective:

This course deals with professional ethics which includes moral issues and virtues, social responsibilities of an engineer, right, qualities of Moral Leadership.

UNIT I

ENGINEERING ETHICS

Senses of 'Engineering Ethics' – Variety of Moral Issues – Types of Inquiry – Moral Dilemmas – Moral Autonomy – Kohlberg's Theory – Gilligan's Theory – Consensus and Controversy – Professions and Professionalism – Professional Ideals and Virtues – Uses of Ethical Theories

UNIT II

ENGINEERING AS SOCIAL EXPERIMENTATION

Engineering as Experimentation – Engineers as Responsible Experimenters – Research Ethics – Codes of Ethics – Industrial Standards – A Balanced Outlook on Law – The Challenger Case Study

UNIT III

ENGINEER'S RESPONSIBILITY FOR SAFETY

Safety and Risk – Assessment of Safety and Risk – Risk Benefit Analysis – Reducing Risk – The Government Regulator's Approach to Risk – Chernobyl Case Studies and Bhopal

UNIT IV

RESPONSIBILITIES AND RIGHTS

Collegiality and Loyalty – Respect for Authority – Collective Bargaining – Confidentiality – Conflicts of Interest – Occupational Crime – Professional Rights – Employee Rights – Intellectual Property Rights (IPR) – Discrimination

UNIT V

GLOBAL ISSUES

Multinational Corporations – Business Ethics – Environmental Ethics – Computer Ethics - Role in Technological Development – Weapons Development – Engineers as Managers – Consulting Engineers – Engineers as Expert Witnesses and Advisors – Honesty – Moral Leadership – Sample Code of Conduct

Text Books:

1. Mike Martin and Roland Schinzinger, "Ethics in Engineering", McGraw Hill, New York 2005.
2. Charles E Harris, Michael S Pritchard and Michael J Rabins, "Engineering Ethics – Concepts and Cases", Thompson Learning, 2000.

Reference Books:

1. Charles D Fleddermann, "Engineering Ethics", Prentice Hall, New Mexico, 1999.
2. John R Boatright, "Ethics and the Conduct of Business", Pearson Education, 2003.
3. Edmund G Seebauer and Robert L Barry, "Fundamentals of Ethics for Scientists and Engineers", Oxford University Press, 2001.
4. Prof. (Col) P S Bajaj and Dr. Raj Agrawal, "Business Ethics – An Indian Perspective", Biztantra, New Delhi, 2004.
5. David Ermann and Michele S Shauf, "Computers, Ethics and Society", Oxford University Press, 2003.

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B.Tech. III - II Sem.

(13A52301) HUMAN VALUES & PROFESSIONAL ETHICS (AUDIT COURSE)

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ENGINEERING ETHICS

Senses of 'Engineering Ethics' – Variety of Moral Issues – Types of Inquiry – Moral Dilemmas – Moral Autonomy – Kohlberg's Theory – Gilligan's Theory – Consensus and Controversy – Professions and Professionalism – Professional Ideals and Virtues – Uses of Ethical Theories

UNIT II

ENGINEERING AS SOCIAL EXPERIMENTATION

Engineering as Experimentation – Engineers as Responsible Experimenters – Research Ethics – Codes of Ethics – Industrial Standards – A Balanced Outlook on Law – The Challenger Case Study

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ENGINEER'S RESPONSIBILITY FOR SAFETY

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B.Tech. II – I Sem.

(13A52301) HUMAN VALUES & PROFESSIONAL ETHICS (AUDIT COURSE)

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ENGINEERING AS SOCIAL EXPERIMENTATION

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR

B.Tech. II - II Sem.

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2

(13A52301) HUMAN VALUES & PROFESSIONAL ETHICS (AUDIT COURSE)

Course Objective:

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UNIT I

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UNIT II

ENGINEERING AS SOCIAL EXPERIMENTATION

Engineering as Experimentation – Engineers as Responsible Experimenters – Research Ethics – Codes of Ethics – Industrial Standards – A Balanced Outlook on Law – The Challenger Case Study

UNIT III

ENGINEER'S RESPONSIBILITY FOR SAFETY

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5. David Ermann and Michele S Shauf, "Computers, Ethics and Society", Oxford University Press, 2003.

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR

B.Tech. III - I Sem.

(13A52301) HUMAN VALUES & PROFESSIONAL ETHICS (AUDIT COURSE)

Course Objective:

This course deals with professional ethics which includes moral issues and virtues, social responsibilities of an engineer, right, qualities of Moral Leadership

UNIT I

ENGINEERING ETHICS

Senses of 'Engineering Ethics' – Variety of Moral Issues – Types of Inquiry – Moral Dilemmas – Moral Autonomy – Kohlberg's Theory – Gilligan's Theory – Consensus and Controversy – Professions and Professionalism – Professional Ideals and Virtues – Uses of Ethical Theories

UNIT II

ENGINEERING AS SOCIAL EXPERIMENTATION

Engineering as Experimentation – Engineers as Responsible Experimenters – Research Ethics – Codes of Ethics – Industrial Standards – A Balanced Outlook on Law – The Challenger Case Study

UNIT III

ENGINEER'S RESPONSIBILITY FOR SAFETY

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RESPONSIBILITIES AND RIGHTS

Collegiality and Loyalty – Respect for Authority – Collective Bargaining – Confidentiality – Conflicts of Interest – Occupational Crime – Professional Rights – Employee Rights – Intellectual Property Rights (IPR) – Discrimination

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2. John R Boatright, "Ethics and the Conduct of Business", Pearson Education, (2003)
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4. Prof. (Col) P S Bajaj and Dr. Raj Agrawal, "Business Ethics – An Indian Perspective", Biztantra, New Delhi, (2004)
5. David Ermann and Michele S Shauf, "Computers, Ethics and Society", Oxford University Press, (2003)

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR

B.Tech. IV-I Sem.

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(13A05702) CRYPTOGRAPHY & NETWORK SECURITY

Course Objective:

- Extensive, thorough and significant understanding of the concepts, issues, principles and theories of computer network security
- Identifying the suitable points for applying security features for network traffic
- Understanding the various cryptographic algorithms and implementation of the same.
- Understanding the various attacks, security mechanisms and services

Learning Outcome:

At the end of the course the students will be able to:

- Protect the network from both internal and external attacks
- Understand and implement various public and private key cryptographic algorithms
- Design of new security approaches

UNIT I

Computer Security concepts, The OSI Security Architecture, Security attacks; Security services and Security mechanisms, A model for Network Security, Classical encryption techniques- symmetric cipher model, substitution ciphers, transposition ciphers, Steganography, Modern Block ciphers, Modern Stream ciphers. **Modern Block Ciphers:** Block ciphers principles, Data encryption standard (DES), Strength of DES, linear and differential cryptanalysis, block cipher modes of operations, AES, RC4

UNIT II

Introduction to Number theory : Integer Arithmetic, Modular Arithmetic, Matrices, Linear Congruence, Algebraic Structures, $GF(2^n)$ Fields, Primes, Primarily Testing, Factorization, Chinese remainder Theorem, Quadratic Congruence, Exponentiation and Logarithm. **Public-key cryptography :** Principles of public-key cryptography, RSA Algorithm, Diffie-Hellman Key Exchange, ElGamal cryptographic system, Elliptic Curve Arithmetic, Elliptic curve cryptography

UNIT III

Cryptographic Hash functions: Applications of Cryptographic Hash functions, Requirements and security, Hash functions based on Cipher Block Chaining, Secure Hash Algorithm (SHA)
Message Authentication Codes: Message authentication Requirements, Message authentication functions, Requirements for Message authentication codes, security of MACs, HMAC, MACs based on Block Ciphers, Authenticated Encryption
Digital Signatures : RSA with SHA & DSS

UNIT IV

Key Management and distribution: Symmetric key distribution using Symmetric Encryption, Symmetric key distribution using Asymmetric, Distribution of Public keys, X.509 Certificates, Public key Infrastructure.
User Authentication: Remote user Authentication Principles, Remote user Authentication using Symmetric Encryption, Kerberos, Remote user Authentication using Asymmetric Encryption, Federated Identity Management
Electronic mail security: Pretty Good Privacy (PGP), S/MIME

UNIT V

Security at the Transport Layer(SSL and TLS) : SSL Architecture, Four Protocols, SSL Message Formats, Transport Layer Security, HTTPS, SSH
Security at the Network layer (IPSec): Two modes, Two Security Protocols, Security Association, Security Policy, Internet Key Exchange.

System Security: Description of the system, users, Trust and Trusted Systems, Buffer Overflow and Malicious Software, Malicious Programs, worms, viruses, Intrusion Detection System(IDS), Firewalls

Text Books :

1. *Cryptography and Network Security: Principals and Practice, William Stallings, Fifth Edition, Pearson Education.*
2. *Cryptography and Network Security, Behrouz A. Frouzan and Debdeep Mukhopadhyay, 2nd edition, Mc Graw Hill Education*

Reference Books :

1. *Network Security and Cryptography, Bernard Menezes , Cengage Learning.*
2. *Cryptography and Security, C.K. Shymala, N. Harini and Dr. T.R. Padmanabhan, Wiley-India.*
3. *Applied Cryptography, Bruce Schneier, 2nd edition, John Wiley & Sons.*
4. *Cryptography and Network Security, Atul Kahate, TMH.*
5. *Introduction to Cryptography, Buchmann, Springer.*
6. *Number Theory in the Spirit of Ramanujan, Bruce C.Berndt, University Press*
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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR

M.Tech III semester (SE)

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(17D20302) HUMAN VALUES AND PROFESSIONAL ETHICS

(Elective V-OPEN ELECTIVE)

Unit I:

HUMAN VALUES: Morals, Values and Ethics-Integrity-Work Ethic-Service learning – Civic Virtue – Respect for others – Living Peacefully – Caring – Sharing – Honesty - Courage- Co Operation – Commitment – Empathy –Self Confidence Character – Spirituality.

Unit II:

ENGINEERING ETHICS: Senses of Engineering Ethics- Variety of moral issues – Types of inquiry – Moral dilemmas – Moral autonomy –Kohlberg’s theory- Gilligan’s theory- Consensus and controversy – Models of professional roles- Theories about right action- Self interest - Customs and religion –Uses of Ethical theories – Valuing time –Co operation – Commitment.

Unit III :

ENGINEERING AS SOCIAL EXPERIMENTATION: Engineering As Social Experimentation – Framing the problem – Determining the facts – Codes of Ethics – Clarifying Concepts – Application issues – Common Ground - General Principles – Utilitarian thinking respect for persons.

UNIT IV:

ENGINEERS RESPONSIBILITY FOR SAFETY AND RISK: Safety and risk – Assessment of safety and risk – Risk benefit analysis and reducing riskSafety and the Engineer- Designing for the safety- Intellectual Property rights(IPR).

UNIT V:

GLOBAL ISSUES: Globalization – Cross culture issues- Environmental Ethics – Computer Ethics – Computers as the instrument of Unethical behavior – Computers as the object of Unethical acts – Autonomous Computers- Computer codes of Ethics – Weapons Development - Ethics .

Text Books :

1. "Engineering Ethics includes Human Values" by M.Govindarajan, S.Natarajan and V.S.SenthilKumar-PHI Learning Pvt. Ltd-2009.
2. "Engineering Ethics" by Harris, Pritchard and Rabins, CENGAGE Learning, India Edition, 2009.
3. "Ethics in Engineering" by Mike W. Martin and Roland Schinzinger – Tata McGrawHill–2003.
4. "Professional Ethics and Morals" by Prof.A.R.Aryasri, Dharanikota Suyodhana-Maruthi Publications.
5. "Professional Ethics and Human Values" by A.Alavudeen, R.Kalil Rahman and M.Jayakumaran , Laxmi Publications.

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR

M.Tech III semester (SE)

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(17D20303) INTELLECTUAL PROPERTY RIGHTS

(Elective V-OPEN ELECTIVE)

UNIT – I

Introduction To Intellectual Property: Introduction, Types Of Intellectual Property, International Organizations, Agencies And Treaties, Importance Of Intellectual Property Rights.

UNIT – II

Trade Marks : Purpose And Function Of Trade Marks, Acquisition Of Trade Mark Rights, Protectable Matter, Selecting And Evaluating Trade Mark, Trade Mark Registration Processes.

UNIT – III

Law Of Copy Rights : Fundamental Of Copy Right Law, Originality Of Material, Rights Of Reproduction, Rights To Perform The Work Publicly, Copy Right Ownership Issues, Copy Right Registration, Notice Of Copy Right, International Copy Right Law.

Law Of Patents : Foundation Of Patent Law, Patent Searching Process, Ownership Rights And Transfer

UNIT – IV

Trade Secrets : Trade Secrete Law, Determination Of Trade Secrete Status, Liability For Misappropriations Of Trade Secrets, Protection For Submission, Trade Secrete Litigation.

Unfair Competition : Misappropriation Right Of Publicity, False Advertising.

UNIT – V

New Development Of Intellectual Property: New Developments In Trade Mark Law ; Copy Right Law, Patent Law, Intellectual Property Audits.

International Overview On Intellectual Property, International – Trade Mark Law, Copy Right Law, International Patent Law, International Development In Trade Secrets Law.

TEXT BOOKS & REFERENCES:

1. Intellectual Property Right, Deborah. E. Bouchoux, Cengage Learning.
2. Intellectual Property Right – Nileshmy The Knowledge Economy, Prabuddha Ganguli, Tate Mc Graw Hill Publishing Company Ltd.,

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR

M.Tech I semester (CN)

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(17D08102) NETWORK SECURITY & CRYPTOGRAPHY

UNIT I

Computer Security Concepts, The OSI Security Architecture, Security Attacks, Security Services And Security Mechanisms, Classical Encryption Techniques- Symmetric Cipher Model, Substitution Ciphers, Transposition Ciphers, Steganography, Modern Block Ciphers, Modern Stream Ciphers.

Modern Block Ciphers: Block Ciphers Principles, Data Encryption Standard (DES), Linear And Differential Cryptanalysis, Block Cipher Modes Of Operations, AES.

UNIT II

Public-Key Cryptography :Principles Of Public-Key Cryptography, RSA Algorithm, Diffie-Hellman Key Exchange, Elgamal Cryptographic System, Elliptic Curve Arithmetic, Elliptic Curve Cryptography

Cryptographic Hash Functions: Applications Of Cryptographic Hash Functions, Requirements And Security, Hash Functions Based On Cipher Block Chaining, Secure Hash Algorithm (SHA).

UNIT III

Message Authentication Codes: Message Authentication Requirements, Message Authentication Functions, Requirements For Message Authentication Codes, Security Of Macs, HMAC, Macs Based On Block Ciphers, Authenticated Encryption.

Digital Signatures and Authentication Protocols: Digital Signatures, Authentication Protocols.

UNIT IV

Key Management And Distribution: Symmetric Key Distribution Using Symmetric Encryption, Symmetric Key Distribution Using Asymmetric, Distribution Of Public Keys, X.509 Certificates, Public Key Infrastructure.

Electronic Mail Security: Pretty Good Privacy (PGP), S/MIME

UNIT V

Security At The Transport Layer(SSL And TLS) : SSL Architecture, Four Protocols, SSL Message Formats, Transport Layer Security, HTTPS, SSH

Security At The Network Layer (Ipsec): Two Modes, Two Security Protocols, Security Association, Security Policy, Internet Key Exchange.

Intruders: Intruders, Intrusion Detection, Password Management, Firewalls, Viruses and Worms.

Text Books :

1. Cryptography and Network Security: Principals and Practice, William Stallings, Fifth Edition, Pearson Education.
2. Cryptography and Network Security, Behrouz A. Frouzan and Debdeep Mukhopadhyay, 2nd edition, Mc Graw Hill Education

Reference Books :

1. Network Security and Cryptography, Bernard Menezes , Cengage Learning.
2. Cryptography and Security, C.K. Shymala, N. Harini and Dr. T.R. Padmanabhan, Wiley-India.
3. Applied Cryptography, Bruce Schneier, 2nd edition, John Wiley & Sons.
4. Cryptography and Network Security, Atul Kahate, TMH.
5. Introduction to Cryptography, Buchmann, Springer.
6. Number Theory in the Spirit of Ramanujan, Bruce C.Berndt, University Press
7. Introduction to Analytic Number Theory, Tom M.Apostol, University Press