NPR College of Engineering & Technology

NPR Nagar, Natham, Dindigul - 624401, Tamil Nadu, India.
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai.
An ISO 9001:2015 Certified Institution.
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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

COURSE INFORMATION SHEET

PROGRAMME: Computer Science & Engineering	**DEGREE:** B.E
COURSE: Professional Ethics in Engineering	**SEMESTER:8 CREDITS:**3
COURSE CODE: GE8076/ C409	**COURSE TYPE:** ELECTIVE
COURSE AREA/STREAM : Professonal Ethics	**CONTACT HOURS**: 5+1 hours/Week.
CORRESPONDING LAB COURSE CODE (IF ANY): NIL	**LAB COURSE NAME :** NIL
COURSE COORDINATOR NAME : Mrs.J.PriscaMary	

SYLLABUS:

MODULE	DETAILS	HOURS
I	**UNIT I HUMAN VALUES** Morals, values and Ethics – Integrity – Work ethic – Service learning – Civic virtue – Respect for others – Living peacefully – Caring – Sharing – Honesty – Courage – Valuing time – Cooperation – Commitment – Empathy – Self confidence – Character – Spirituality – Introduction to Yoga and meditation for professional excellence and stress management.	10
II	**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.	9
III	**UNIT III ENGINEERING AS SOCIAL EXPERIMENTATION** Engineering as Experimentation – Engineers as responsible Experimenters – Codes of Ethics – A Balanced Outlook on Law.	9
IV	**UNIT IV SAFETY, RESPONSIBILITIES AND RIGHTS** Safety and Risk – Assessment of Safety and Risk – Risk Benefit Analysis and Reducing Risk - Respect for Authority – Collective Bargaining – Confidentiality – Conflicts of Interest – Occupational Crime – Professional Rights – Employee Rights – Intellectual Property Rights (IPR) – Discrimination.	9

V	**UNIT V GLOBAL ISSUES** Multinational Corporations – Environmental Ethics – Computer Ethics – Weapons Development – Engineers as Managers – Consulting Engineers – Engineers as Expert Witnesses and Advisors – Moral Leadership –Code of Conduct – Corporate Social Responsibility.	8
	TOTAL HOURS	**45**

TEXT/REFERENCE BOOKS:

T/R	BOOK TITLE/AUTHORS/PUBLICATION
T1	Mike W. Martin and Roland Schinzinger, "Ethics in Engineering", Tata McGraw Hill, New Delhi, 2003.
T2	Govindarajan M, Natarajan S, Senthil Kumar V. S, "Engineering Ethics", Prentice Hall of India, New Delhi, 2004.
R1	Charles B. Fleddermann, "Engineering Ethics", Pearson Prentice Hall, New Jersey, 2004.
R2	Charles E. Harris, Michael S. Pritchard and Michael J. Rabins, "Engineering Ethics – Concepts and Cases", Cengage Learning, 2009
R3	John R Boatright, "Ethics and the Conduct of Business", Pearson Education, New Delhi, 2003
R4	Edmund G Seebauer and Robert L Barry, "Fundametals of Ethics for Scientists and Engineers", Oxford University Press, Oxford, 2001
R5	Laura P. Hartman and Joe Desjardins, "Business Ethics: Decision Making for Personal Integrity and Social Responsibility" Mc Graw Hill education, India Pvt. Ltd.,New Delhi 2013
R6	World Community Service Centre, „ Value Education", Vethathiri publications, Erode, 2011

COURSE PRE-REQUISITES:

C.CODE	COURSE NAME	DESCRIPTION	SEM
NIL			

COURSE OBJECTIVES:

1	To enable the students to create an awareness on Engineering Ethics and Human Values, to instill Moral and Social Values and Loyalty and to appreciate the rights of others.

COURSE OUTCOMES:

SNO	DESCRIPTION	Level in Bloom's Taxonomy
C409.1	Describe the human values with regard to the individual life style for the society	K2
C409.2	Explain the role of ethics to the engineering field	K2
C409.3	Describe how engineering is applied in association with ethics based on engineering experimentation	K2

C409.4	Explain the engineering ethics based safety, responsibilities and rights	K2
C409.5	Discuss the global issues of professional ethics in engineering	K2
C409.6	Experiment the professional ethics in engineering based product development	K3

CORELATION BETWEEN COURSE OUTCOMES AND PROGRAMME OUTCOMES

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C409.1	-	-	-	-	-	1	-	3	3	-	-	3
C409.2	-	-	-	-	-	-	2	3	2	1	-	1
C409.3	-	-	-	-	-	-	-	3	-	-	-	-
C409.4	-	-	-	-	-	3	1	3	2	1	-	3
C409.5	-	-	-	-	-	2	2	3	1	2	-	2
C409.6	-	-	-	-	-	2	2	3	3	3	-	2
C409	-	-	-	-	-	2	2	3	2	2	-	2

CORELATION BETWEEN COURSE OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

CO	PSO 1	PSO 2	PSO 3
C409.1	1	-	-
C409.2	-	-	-
C409.3	1	-	-
C409.4	-	-	-
C409.5	1	-	-
C409.6	-	-	-
C409	1	-	-

GAPS IN THE SYLLABUS - TO MEET INDUSTRY/PROFESSION REQUIREMENTS:

SNO	DESCRIPTION	Mapping to PO	PROPOSED ACTIONS
NIL			

TOPICS BEYOND SYLLABUS/ADVANCED TOPICS/DESIGN:

Sl.No	Topic	Mapping to P O
NIL		

WEB SOURCE REFERENCES:

1	www.onlineethics.org
2	www.nspe.org
3	www.globalethics.org
4	www.ethics.org

DELIVERY/INSTRUCTIONAL METHODOLOGIES:

✓ CHALK & TALK	✓ STUD. ASSIGNMENT	✓ WEB RESOURCES	✓ TUTORIAL
✓ LCD/SMART BOARDS	✓ STUD. SEMINARS		

DELIVERY METHODS USED FOR EACH COURSE OUT COME

SNO	DELIVERY METHODS
C409.1	CHALK & TALK, STUD. ASSIGNMENT, TUTORIAL
C409.2	CHALK & TALK, STUD. ASSIGNMENT, TUTORIAL
C409.3	CHALK & TALK , STUD.ASSIGNMENT, WEB RESOURCES
C409.4	CHALK & TALK, LCD/SMART BOARDS, WEB RESOURCES, TUTORIAL
C409.5	CHALK & TALK, STUD. ASSIGNMENT, LCD/SMART BOARDS, WEB RESOURCES

ASSESSMENT METHODOLOGIES-DIRECT.

✓ ASSIGNMENTS	✓ STUD. SEMINARS	✓ TESTS/MODEL EXAMS	✓ UNIV. EXAMINATION

ASSESSMENT METHODOLOGIES-INDIRECT.

STUDENT FEEDBACK ON FACULTY (ONCE)	

ASSESSMENT METHODOLOGIES USED FOR EACH COURSE OUT COME

SNO	ASSESSMENT METHODOLOGIES-DIRECT	ASSESSMENT METHODOLOGIES-INDIRECT
C409.1	ASSIGNMENTS, UNIV. EXAMINATION, STUD. SEMINARS, TESTS/MODEL EXAMS	STUDENT FEEDBACK ON FACULTY
C409.2	UNIV. EXAMINATION, TESTS/MODEL EXAMS,	STUDENT FEEDBACK ON FACULTY
C409.3	UNIV. EXAMINATION, TESTS/MODEL EXAMS, ASSIGNMENTS	STUDENT FEEDBACK ON FACULTY
C409.4	UNIV. EXAMINATION, TESTS/MODEL EXAMS	STUDENT FEEDBACK ON FACULTY
C409.5	ASSIGNMENTS, UNIV. EXAMINATION, TESTS/MODEL EXAMS	STUDENT FEEDBACK ON FACULTY

Prepared by
(Course Coordinator)

Mrs.J.PriscaMary
Name and Signature

Approved by
(Programme Coordinator)

Mr.J.Viswanath
Name and Signature

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

COURSE INFORMATION SHEET

PROGRAMME: Computer Science & Engineering	**DEGREE:** B.E
COURSE: Information Retrieval Techniques	**SEMESTER:8 CREDITS:**3
COURSE CODE: CS8080 / C410	**COURSE TYPE:** ELECTIVE
COURSE AREA/STREAM : Database	**CONTACT HOURS**: 5+1 (Tutorial) hours/Week.
CORRESPONDING LAB COURSE CODE (IF ANY): NIL	**LAB COURSE NAME :** NIL
COURSE COORDINATOR NAME :Mrs.V.Sujitha	

SYLLABUS:

MODULE	DETAILS	HOURS
I	**UNIT I INTRODUCTION** Information Retrieval – Early Developments – The IR Problem – The User's Task – Information versus Data Retrieval - The IR System – The Software Architecture of the IR System – The Retrieval and Ranking Processes - The Web – The e-Publishing Era – How the web changed Search – Practical Issues on the Web – How People Search – Search Interfaces Today – Visualization in Search Interfaces.	9
II	**UNIT II MODELING AND RETRIEVAL EVALUATION** Basic IR Models - Boolean Model - TF-IDF (Term Frequency/Inverse Document Frequency) Weighting - Vector Model – Probabilistic Model – Latent Semantic Indexing Model – Neural Network Model – Retrieval Evaluation – Retrieval Metrics – Precision and Recall – Reference Collection – User-based Evaluation – Relevance Feedback and Query Expansion – Explicit Relevance Feedback.	9
III	**UNIT III TEXT CLASSIFICATION AND CLUSTERING** A Characterization of Text Classification – Unsupervised Algorithms: Clustering – Naïve Text Classification – Supervised Algorithms – Decision Tree – k-NN Classifier – SVM Classifier – Feature Selection or Dimensionality Reduction – Evaluation metrics – Accuracy and Error – Organizing the classes – Indexing and Searching – Inverted Indexes – Sequential Searching – Multi-dimensional Indexing.	9

IV	**UNIT IV WEB RETRIEVAL AND WEB CRAWLING** The Web – Search Engine Architectures – Cluster based Architecture – Distributed Architectures – Search Engine Ranking – Link based Ranking – Simple Ranking Functions – Learning to Rank – Evaluations -- Search Engine Ranking – Search Engine User Interaction – Browsing – Applications of a Web Crawler – Taxonomy – Architecture and Implementation – Scheduling Algorithms – Evaluation.	9
V	**UNIT V RECOMMENDER SYSTEM** Recommender Systems Functions – Data and Knowledge Sources – Recommendation Techniques – Basics of Content-based Recommender Systems – High Level Architecture – Advantages and Drawbacks of Content-based Filtering – Collaborative Filtering – Matrix factorization models – Neighborhood models.	9
	TOTAL HOURS	**45**

TEXT/REFERENCE BOOKS:

T/R	BOOK TITLE/AUTHORS/PUBLICATION
T1	Ricardo Baeza-Yates and Berthier Ribeiro-Neto, —Modern Information Retrieval: The Concepts and Technology behind Search, Second Edition, ACM Press Books, 2011.
T2	Ricci, F, Rokach, L. Shapira, B.Kantor, "Recommender Systems Handbook", First Edition, 2011.
R1	C. Manning, P. Raghavan, and H. Schütze, —Introduction to Information Retrieval, Cambridge University Press, 2008.
R2	Stefan Buettcher, Charles L. A. Clarke and Gordon V. Cormack, —Information Retrieval: Implementing and Evaluating Search Engines, The MIT Press, 2010.

COURSE PRE-REQUISITES:

C.CODE	COURSE NAME	DESCRIPTION	SEM
C212	Database Management System	Knowledge of Database	IV

COURSE OBJECTIVES:

1	Understand the basics of Information Retrieval.
2	Understand machine learning techniques for text classification and clustering.
3	Understand various search engine system operations.
4	Learn different techniques of recommender system.

COURSE OUTCOMES:

SNO	DESCRIPTION	Level in Bloom's Taxonomy
C410.1	Interpret open source search engine framework and explore its capabilities	K2
C410.2	Apply appropriate method of classification or clustering	K3

C410.3	Design and implement innovative features in a search engine	K3
C410.4	Design and implement a recommender system	K3
C410.5	Demonstrate an open source search engine framework and explore its capabilities	K2
C410.6	Demonstrate the entire process flow of a search engine	K2

CORELATION BETWEEN COURSE OUTCOMES AND PROGRAMME OUTCOMES

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
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C410.2	3	2	2	1	-	-	-	-	-	-	-	-
C410.3	3	2	2	1	-	-	-	-	-	-	-	-
C410.4	3	2	2	1	-	-	-	-	-	-	-	-
C410.5	2	1	1	-	-	-	-	-	-	-	-	-
C410.6	2	1	1	-	-	-	-	-	-	-	-	-
C410	3	2	2	1	-	-	-	-	-	-	-	-

CORELATION BETWEEN COURSE OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

CO	PSO 1	PSO 2	PSO 3
C410.1	2	2	-
C410.2	2	3	-
C410.3	2	3	-
C410.4	2	3	-
C410.5	2	2	-
C410.6	2	2	-
C410	2	3	-

GAPS IN THE SYLLABUS - TO MEET INDUSTRY/PROFESSION REQUIREMENTS:

SNO	DESCRIPTION	Mapping to PO	PROPOSED ACTIONS
NIL			

TOPICS BEYOND SYLLABUS/ADVANCED TOPICS/DESIGN:

Sl.No	Topic	Mapping to P O
NIL		

WEB SOURCE REFERENCES:

1	en.wikipedia.org/wiki/
2	Https://Nptel.Ac.In/Courses/Information Retrieval

DELIVERY/INSTRUCTIONAL METHODOLOGIES:

✓ CHALK & TALK	✓ STUD. ASSIGNMENT	✓ WEB RESOURCES	✓ TUTORIAL
✓ LCD/SMART BOARDS	✓ STUD. SEMINARS		

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C410.2	CHALK & TALK, STUD. ASSIGNMENT, TUTORIAL
C410.3	CHALK & TALK , STUD.ASSIGNMENT, WEB RESOURCES
C410.4	CHALK & TALK, LCD/SMART BOARDS, WEB RESOURCES, TUTORIAL
C410.5	CHALK & TALK, STUD. ASSIGNMENT, LCD/SMART BOARDS, WEB RESOURCES

ASSESSMENT METHODOLOGIES-DIRECT.

✓ ASSIGNMENTS	✓ STUD. SEMINARS	✓ TESTS/MODEL EXAMS	✓ UNIV. EXAMINATION

ASSESSMENT METHODOLOGIES-INDIRECT.

STUDENT FEEDBACK ON FACULTY (ONCE)	

ASSESSMENT METHODOLOGIES USED FOR EACH COURSE OUT COME

SNO	ASSESSMENT METHODOLOGIES-DIRECT	ASSESSMENT METHODOLOGIES-INDIRECT
C410.1	ASSIGNMENTS, UNIV. EXAMINATION, STUD. SEMINARS, TESTS/MODEL EXAMS	STUDENT FEEDBACK ON FACULTY
C410.2	UNIV. EXAMINATION, TESTS/MODEL EXAMS,	STUDENT FEEDBACK ON FACULTY
C410.3	UNIV. EXAMINATION, TESTS/MODEL EXAMS, ASSIGNMENTS	STUDENT FEEDBACK ON FACULTY
C410.4	UNIV. EXAMINATION, TESTS/MODEL EXAMS	STUDENT FEEDBACK ON FACULTY
C410.5	ASSIGNMENTS, UNIV. EXAMINATION, TESTS/MODEL EXAMS	STUDENT FEEDBACK ON FACULTY

Prepared by
(Course Coordinator)

Mrs.V.Sujitha
Name and Signature

Approved by
(Programme Coordinator)

Mr.J.Viswanath
Name and Signature

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