

| | | |
|---|--|--|
|  <p>NPR Group of Institutions Reach the Star</p> | <p align="center">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. Phone No: 04544- 246 500, 246501, 246502. Website : www.nprcolleges.org, www.nprcet.org, Email:nprcetprincipal@nprcolleges.org</p> |  |
|---|--|--|

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

COURSE INFORMATION SHEET

| | |
|--|---------------------------------------|
| PROGRAMME: Computer Science & Engineering | DEGREE: B.E |
| COURSE: Technical English | SEMESTER: 2 CREDITS: 4 |
| COURSE CODE: HS8251 / C109 | COURSE TYPE: CORE |
| COURSE AREA/STREAM : Communication Skills | CONTACT HOURS: 5+1 hours/Week. |
| CORRESPONDING LAB COURSE CODE (IF ANY): | LAB COURSE NAME : NIL |
| COURSE COORDINATOR NAME : Ms. R. Sindhu | |

SYLLABUS:

| MODULE | DETAILS | HOURS |
|--------|--|-------|
| I | UNIT I INTRODUCTION TECHNICAL ENGLISH Listening- Listening to talks mostly of a scientific/technical nature and completing information-gap exercises- Speaking –Asking for and giving directions- Reading – reading short technical texts from journals- newspapers- Writing- purpose statements – extended definitions – issue- writing instructions – checklists-recommendations-Vocabulary Development- technical vocabulary Language Development –subject verb agreement - compound words. | 12 |
| II | UNIT II READING AND STUDY SKILLS Listening- Listening to longer technical talks and completing exercises based on them-Speaking – describing a process-Reading – reading longer technical texts-identifying the various transitions in a text- paragraphing- Writing- interpreting charts, graphs- Vocabulary Development- vocabulary used in formal letters/emails and reports Language Development- impersonal passive voice, numerical adjectives. | 12 |
| III | UNIT III TECHNICAL WRITING AND GRAMMAR Listening- Listening to classroom lectures/ talks on engineering/technology - Speaking – introduction to technical presentations- Reading – longer texts both general and technical, practice in speed reading; Writing-Describing a process, use of sequence words- Vocabulary Development- sequence words- Misspelled words. Language Development- embedded sentences | 12 |
| IV | UNIT IV REPORT WRITING Listening- Listening to documentaries and making notes. Speaking – mechanics of presentations- Reading – reading for detailed comprehension- Writing- email etiquette- job application – cover letter –Résumé preparation(via email and hard copy)- analytical essays and issue based essays--Vocabulary Development-finding suitable synonyms-paraphrasing-. Language Development- clauses- if conditionals. | 12 |



| | | |
|--------------------|---|-----------|
| V | UNIT V GROUP DISCUSSION AND JOB APPLICATIONS Listening- TED/Ink talks; Speaking –participating in a group discussion - Reading– reading and understanding technical articles Writing– Writing reports- minutes of a meeting- accident and survey-Vocabulary Development- verbal analogies Language Development- reported speech. | 12 |
| TOTAL HOURS | | 60 |

TEXT/REFERENCE BOOKS:

| T/R | BOOK TITLE/AUTHORS/PUBLICATION |
|-----|--|
| T1 | Board of editors. Fluency in English A Course book for Engineering and Technology. Orient Blackswan, Hyderabad: 2016 |
| T2 | Sudharshana.N.P and Saveetha. C. English for Technical Communication. Cambridge University Press: New Delhi, 2016 |
| R1 | Raman, Meenakshi and Sharma, Sangeetha- Technical Communication Principles and Practice.Oxford University Press: New Delhi,2014. |
| R2 | Kumar, Suresh. E. Engineering English. Orient Blackswan: Hyderabad,2015 |
| R3 | Means, L. Thomas and Elaine Langlois, English & Communication For Colleges. Cengage Learning, USA: 2007 |

COURSE PRE-REQUISITES:

| C.CODE | COURSE NAME | DESCRIPTION | SEM |
|--------|-------------|---|-----|
| Nil | Nil | Knowledge regarding basics of communication | Nil |

COURSE OBJECTIVES:

| | |
|---|---|
| 1 | Develop strategies and skills to enhance their ability to read and comprehend engineering and technology texts. |
| 2 | Foster their ability to write convincing job applications and effective reports |
| 3 | Develop their speaking skills to make technical presentations, participate in group discussions |
| 4 | Strengthen their listening skill which will help them comprehend lectures and talks in their areas of specialization. |



COURSE OUTCOMES:

| SNO | DESCRIPTION | Level in Bloom's Taxonomy |
|--------|---|---------------------------|
| C109.1 | Read technical texts and write area specific texts effortlessly | K2 |
| C109.2 | Listen and comprehend lectures and talks in their areas of specialization and write effectively for a variety of professional and social settings | K2 |
| C109.3 | Speak and write appropriately and effectively in varied formal and informal contexts | K6 |
| C109.4 | Write effectively and persuasively and produce different types of writing such as letters, minutes, reports and winning job applications | K6 |
| C109.5 | Communicate clearly using technical vocabulary in their professional correspondences | K2 |

CORELATION BETWEEN COURSE OUTCOMES AND PROGRAMME OUTCOMES

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|
| C109.1 | - | - | - | - | - | - | - | - | 3 | 3 | - | 2 |
| C109.2 | - | - | - | - | - | - | - | - | 3 | 3 | - | 2 |
| C109.3 | - | - | - | - | - | - | - | - | 3 | 3 | - | 2 |
| C109.4 | - | - | - | - | - | - | - | - | 3 | 3 | - | 2 |
| C109.5 | - | - | - | - | - | - | - | - | 3 | 3 | - | 2 |
| C109 | - | - | - | - | - | - | - | - | 3 | 3 | - | 2 |

CORELATION BETWEEN COURSE OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

| CO | PSO 1 | PSO 2 | PSO 3 |
|--------|-------|-------|-------|
| C109.1 | 3 | 3 | 2 |
| C109.2 | 3 | 3 | 2 |
| C109.3 | 3 | 3 | 2 |
| C109.4 | 3 | 3 | 2 |
| C109.5 | 3 | 3 | 2 |
| C109 | 3 | 3 | 2 |



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 PO |
|-------|----------------------|---------------|
| 1 | Communication Skills | - |

WEB SOURCE REFERENCES:

| | |
|---|--|
| 1 | www.slideshare.net/ |
| 2 | www.englishgrammar.org |
| 3 | www.englishclub.com |

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 |
|--------|---|
| C109.1 | CHALK & TALK, STUD. ASSIGNMENT, TUTORIAL |
| C109.2 | CHALK & TALK, STUD. ASSIGNMENT, TUTORIAL |
| C109.3 | CHALK & TALK , STUD.ASSIGNMENT, WEB RESOURCES |
| C109.4 | CHALK & TALK, WEB RESOURCES, TUTORIAL,LCD/SMART BORADS |
| C109.5 | CHALK & TALK, STUD. ASSIGNMENT, LCD/SMART BORADS ,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 |
|--------|---|-----------------------------------|
| C109.1 | Assignments, Univ. Examination, Stud. Seminars, Tests/Model Exams | Student Feedback On Faculty |
| C109.2 | Univ. Examination, Tests/Model Exams, | Student Feedback On Faculty |
| C109.3 | Univ. Examination, Tests/Model Exams, Assignments | Student Feedback On Faculty |
| C109.4 | Univ. Examination, Tests/Model Exams | Student Feedback On Faculty |
| C109.5 | Assignments, Univ. Examination, Tests/Model Exams | Student Feedback On Faculty |

Prepared by
(Course Coordinator)


Name and Signature
Ms. R. Sindhu

Approved by
(Programme Coordinator)


Name and Signature
Dr. T. Priya





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.

Phone No: 04544- 246 500, 246501, 246502.

Website : www.nprcolleges.org, www.nprcet.org, Email: nprcetprincipal@nprcolleges.org



DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

COURSE INFORMATION SHEET

| | |
|---|---------------------------------------|
| PROGRAMME: Computer Science & Engineering | DEGREE: B.E |
| COURSE: ENGINEERING MATHEMATICS - II | SEMESTER: 1 CREDITS: 4 |
| COURSE CODE: MA8251 / C110 | COURSE TYPE: ALLIED |
| COURSE AREA/STREAM : Matrices Algebra and Laplace Transforms | CONTACT HOURS: 5+1 hours/Week. |
| CORRESPONDING LAB COURSE CODE (IF ANY): | LAB COURSE NAME : NIL |
| COURSE COORDINATOR NAME : Mr. U. Vijayanarayanan | |

SYLLABUS:

| MODULE | DETAILS | HOURS |
|--------|--|-------|
| I | MATRICES Eigenvalues and Eigenvectors of a real matrix – Characteristic equation – Properties of Eigenvalues and Eigenvectors – Cayley-Hamilton theorem – Diagonalization of matrices – Reduction of a quadratic form to canonical form by orthogonal transformation – Nature of quadratic forms. | 12 |
| II | VECTOR CALCULUS Gradient and directional derivative – Divergence and curl - Vector identities – Irrotational and Solenoidal vector fields – Line integral over a plane curve – Surface integral - Area of a curved surface - Volume integral - Green's, Gauss divergence and Stoke's theorems – Verification and application in evaluating line, surface and volume integrals. | 12 |
| III | ANALYTIC FUNCTIONS Analytic functions – Necessary and sufficient conditions for analyticity in Cartesian and polar coordinates - Properties – Harmonic conjugates – Construction of analytic function - Conformal mapping – Mapping by functions - Bilinear transformation. | 12 |
| IV | COMPLEX INTEGRATION Line integral - Cauchy's integral theorem – Cauchy's integral formula – Taylor's and Laurent's series – Singularities – Residues – Residue theorem – Application of residue theorem for evaluation of real integrals – Use of circular contour and semicircular contour. | 12 |
| V | LAPLACE TRANSFORMS Existence conditions – Transforms of elementary functions – Transform of unit step function and unit impulse function – Basic properties – Shifting theorems - Transforms of derivatives and integrals – Initial and final value theorems – Inverse transforms – Convolution theorem – Transform of periodic functions – Application to solution of linear second order ordinary differential equations | 12 |



| | | |
|--------------------|-----------------------------|-----------|
| | with constant coefficients. | |
| TOTAL HOURS | | 60 |

TEXT/REFERENCE BOOKS:

| T/R | BOOK TITLE/AUTHORS/PUBLICATION |
|-----|---|
| T1 | Grewal B.S., —Higher Engineering MathematicsI, Khanna Publishers, New Delhi, 43rd Edition, 2014. |
| R1 | O'Neil, P.V. —Advanced Engineering MathematicsI, Cengage Learning India Pvt., Ltd, New Delhi, 2007. |
| R2 | Bali N., Goyal M. and Watkins C., —Advanced Engineering MathematicsI, Firewall Media (An imprint of Lakshmi Publications Pvt., Ltd.), New Delhi, 7th Edition, 2009. |
| R3 | 2. Jain R.K. and Iyengar S.R.K., — Advanced Engineering Mathematics I, Narosa Publications, New Delhi , 3rd Edition, 2007. |

COURSE PRE-REQUISITES:

| C.CODE | COURSE NAME | DESCRIPTION | SEM |
|--------|------------------------------|---|-----|
| C110 | ENGINEERING MATHEMATICS - II | The basic concepts analytic functions and complex integration | II |

COURSE OBJECTIVES:

| | |
|---|---|
| 1 | To introduce the basic concepts of matrix algebra. |
| 2 | Evaluate the line, volume and surface integrals. |
| 3 | Determine Analytic functions, Conformal mapping and Bilinear transformation |
| 4 | Evaluate the laplace transform and inverse transform of simple function. |
| 5 | To solve partial Differential equation and Ordinary Differential Equation with given boundary conditions. |

COURSE OUTCOMES:

| SNO | DESCRIPTION | Level in Bloom's Taxonomy |
|--------|---|---------------------------|
| C110.1 | Calculate the Eigen values and eigenvectors, diagonalization of a matrix, Symmetric matrices, Positive definite matrices and similar matrices | K3 |
| C110.2 | Evaluate the line, surface and volume integrals using Gauss, Stokes and Green's theorems and their verification | K5 |
| C110.3 | Determine Analytic functions, Conformal mapping and Bilinear transformation | K3 |



| | | |
|--------|--|----|
| C110.4 | Evaluate the Cauchy's integrals, Taylor's and Laurent's and residue theorem for evaluation for real integrals using circular and semicircular, contour | K5 |
| C110.5 | Evaluate Laplace transform and inverse transform of simple functions, properties, various related theorems and application to differential equations with constant coefficients. | K5 |
| C110.6 | Discuss Laplace Transform methods to solve initial value problems for constant coefficient linear ODEs. | K2 |

CORELATION BETWEEN COURSE OUTCOMES AND PROGRAMME OUTCOMES

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|
| C110.1 | 2 | 1 | - | - | - | - | - | - | - | - | - | - |
| C110.2 | 2 | 1 | - | - | - | - | - | - | - | - | - | - |
| C110.3 | 2 | 1 | - | - | - | - | - | - | - | - | - | - |
| C110.4 | 2 | 1 | - | - | - | - | - | - | - | - | - | - |
| C110.5 | 2 | 1 | - | - | - | - | - | - | - | - | - | - |
| C110 | 2 | 1 | - | - | - | - | - | - | - | - | - | - |

CORELATION BETWEEN COURSE OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

| CO | PSO 1 | PSO 2 | PSO 3 |
|--------|-------|-------|-------|
| C110.1 | 1 | - | - |
| C110.2 | 1 | - | - |
| C110.3 | 1 | - | - |
| C110.4 | 1 | - | - |
| C110.5 | 1 | - | - |
| C110 | 1 | - | - |

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

| SNO | DESCRIPTION | Mapping to PO | PROPOSED ACTIONS |
|-----|---------------------------------------|---------------|------------------|
| 1 | Solving linear equations using matrix | PO3 | Assignment |



| | | | |
|---|------------------------------|----------|-----------------------------|
| 2 | Equations of line and planes | PO1, PO2 | Study material distributed. |
|---|------------------------------|----------|-----------------------------|

TOPICS BEYOND SYLLABUS/ADVANCED TOPICS/DESIGN:

| Sl.No | Topic | Mapping to PO |
|-------|--|----------------|
| 1 | Cauchy's theorem as a version of Green's theorem | PO1, PO2,. PO3 |
| 2 | Casoratti-Weierstrass theorem | PO1, PO2,. PO3 |
| 3 | The argument principle | PO1, PO2,. PO3 |
| 4 | Complex hyperbolic functions. | PO1, PO2,. PO3 |

WEB SOURCE REFERENCES:

| | |
|---|---|
| 1 | https://nptel.ac.in/courses/111/107/111107112/ |
| 2 | https://nptel.ac.in/courses/111/105/111105122/ |
| 3 | https://nptel.ac.in/courses/111/105/111105134/ |
| 4 | https://nptel.ac.in/courses/111/105/111105123/ |
| 5 | https://nptel.ac.in/courses/111/106/111106084/ |

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 |
|--------|---|
| C110.1 | CHALK & TALK, STUD. ASSIGNMENT, TUTORIAL |
| C110.2 | CHALK & TALK, STUD. ASSIGNMENT, TUTORIAL |
| C110.3 | CHALK & TALK , STUD.ASSIGNMENT, WEB RESOURCES |
| C110.4 | CHALK & TALK, WEB RESOURCES, TUTORIAL |
| C110.5 | CHALK & TALK, STUD. ASSIGNMENT, WEB RESOURCES |
| C110 | CHALK & TALK, STUD.SEMINARS |



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 |
|--------|---|-----------------------------------|
| C110.1 | Assignments, Univ. Examination, Stud. Seminars, Tests/Model Exams | Student Feedback On Faculty |
| C110.2 | Univ. Examination, Tests/Model Exams, | Student Feedback On Faculty |
| C110.3 | Univ. Examination, Tests/Model Exams, Assignments | Student Feedback On Faculty |
| C110.4 | Univ. Examination, Tests/Model Exams | Student Feedback On Faculty |
| C110.5 | Assignments, Univ. Examination, Tests/Model Exams | Student Feedback On Faculty |

Prepared by
(Course Coordinator)

U. Vijayanarayanan
Name and Signature
Mr. U. Vijayanarayanan

Approved by
(Programme Coordinator)

Dr. T. Priya
Name and Signature
Dr. T. Priya





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.
 Phone No: 04544- 246 500, 246501, 246502.
 Website : www.nprcolleges.org, www.nprcet.org, Email nprcetprincipal@nprcolleges.org



COURSE INFORMATION SHEET

| | |
|---|---|
| PROGRAM: CSE | DEGREE: B.E |
| COURSE: Physics for Information Science | SEMESTER: 02 CREDITS: 03 |
| COURSE CODE: PH8252 REGULATION:2017 | COURSE TYPE: CORE /ELECTIVE / BREADTH/ S&H-S&H |
| COURSE AREA/DOMAIN: | CONTACT HOURS: 5 hours/Week. 5 HOURS/WEEK |
| CORRESPONDING LAB COURSE CODE (IF ANY): NIL | LAB COURSE NAME (IF ANY): NIL |
| COURSE COORDINATOR NAME : Dr. A. Juliet Sheela | |

SYLLABUS:

| UNIT | DETAILS | HOURS |
|------|---|-------|
| I | UNIT I - ELECTRICAL PROPERTIES OF MATERIALS Classical free electron theory - Expression for electrical conductivity – Thermal conductivity, expression - Wiedemann-Franz law – Success and failures - electrons in metals – Particle in a three dimensional box – degenerate states – Fermi- Dirac statistics – Density of energy states – Electron in periodic potential – Energy bands in solids – tight binding approximation - Electron effective mass – concept of hole. | 9 |
| II | UNIT II - SEMICONDUCTOR PHYSICS Intrinsic Semiconductors – Energy band diagram – direct and indirect band gap semiconductors – Carrier concentration in intrinsic semiconductors – extrinsic semiconductors - Carrier concentration in N-type & P-type semiconductors – Variation of carrier concentration with temperature – variation of Fermi level with temperature and impurity concentration – Carrier transport in Semiconductor: random motion, drift, mobility and diffusion – Hall effect and devices – Ohmic contacts – Schottky diode. | 9 |
| III | UNIT III - MAGNETIC PROPERTIES OF MATERIALS Magnetic dipole moment – atomic magnetic moments- magnetic permeability and susceptibility - Magnetic material classification: diamagnetism – paramagnetism – ferromagnetism – antiferromagnetism – ferrimagnetism – Ferromagnetism: origin and exchange interaction- saturation magnetization and Curie temperature – Domain Theory- M versus H behaviour – Hard and soft magnetic materials – examples and uses— Magnetic principle in computer data storage – Magnetic hard disc (GMR sensor). | 9 |
| IV | UNIT IV - OPTICAL PROPERTIES OF MATERIALS Classification of optical materials – carrier generation and recombination processes - Absorption emission and scattering of light in metals, insulators and semiconductors (concepts only) – photo current in a P-N diode – solar cell - LED – Organic LED – Laser diodes – Optical data storage techniques. | 9 |



| | | |
|--------------------|--|-----------|
| V | UNIT V -_NANO DEVICES Electron density in bulk material – Size dependence of Fermi energy – Quantum confinement – Quantum structures – Density of states in quantum well, quantum wire and quantum dot structure - Band gap of nanomaterials – Tunneling: single electron phenomena and single electron transistor – Quantum dot laser. Conductivity of metallic nanowires – Ballistic transport – Quantum resistance and conductance – Carbon nanotubes: Properties and applications . | 9 |
| TOTAL HOURS | | 45 |

TEXT/REFERENCE BOOKS:

| T/R | BOOK TITLE/AUTHORS/PUBLICATION |
|-----|---|
| 1 | Jasprit Singh, -Semiconductor Devices: Basic Principlesl, Wiley 2012. |
| 2 | Kasap, S.O. -Principles of Electronic Materials and Devicesl, McGraw-Hill Education, 2007 |
| 3 | Kittel, C. -Introduction to Solid State Physicsl. Wiley, 2005. |
| 4 | Hanson, G.W. -Fundamentals of Nanoelectronicsl. Pearson Education, 2009. |
| 5 | Serway, R.A. & Jewett, J.W. “Physics for Scientists and Engineers”. Cengage Learning, 2010. |
| 6 | Rogers, B., Adams, J. & Pennathur, S. -Nanotechnology: Understanding Small Systemsl. CRC Press, 2014. |

COURSE PRE-REQUISITES:

| C.CODE | COURSE NAME | DESCRIPTION | SEM |
|--------|---------------------------------|---|-----|
| PH8252 | PHYSICS FOR INFORMATION SCIENCE | To enhance the fundamental knowledge in Physics and its applications relevant to various streams of Engineering and Technology. | 01 |

COURSE OBJECTIVES:

| | |
|---|---|
| 1 | To understand the essential principles of Physics of semiconductor device and Electron transport properties. Become proficient in magnetic and optical properties of materials and Nano-electronic devices. |
|---|---|

COURSE OUTCOMES:

| S.NO | DESCRIPTION(Students will be able to) |
|--------|--|
| C111.1 | Gain knowledge on classical and quantum electron theories and energy band structures. |
| C111.2 | Acquire knowledge on basics of semiconductor physics and its applications in various devices |
| C111.3 | Get knowledge on magnetic properties of materials and their applications in data storage. |



| | |
|--------|--|
| C111.4 | Have the necessary understanding on the functioning of optical properties for optoelectronics. |
| C111.5 | Understand the basics of quantum structures and their applications in carbon electronics |

CORELATION BETWEEN COURSE OUTCOMES AND PROGRAMME OUTCOMES

| CO Vs PO | | | | | | | | | | | | | | | |
|-----------------|------|------|------|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|
| SUBJECT | | | | | | | | | | | | | | | |
| COURSE COUTCOME | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 | PSO3 |
| C111.1 | 2 | 1 | 1 | - | - | - | - | - | - | 2 | - | - | 2 | 2 | - |
| C111.2 | 2 | 1 | 1 | - | - | - | - | - | - | 2 | - | - | 2 | 2 | - |
| C111.3 | 2 | 1 | 1 | - | - | - | - | - | - | 2 | - | - | 2 | 2 | - |
| C111.4 | 2 | 1 | 1 | - | - | - | - | - | - | 2 | - | - | 2 | 2 | - |
| C111.5 | 3 | 2 | 2 | - | - | - | - | - | - | 2 | - | - | 2 | 2 | - |
| C111 | 2.20 | 1.20 | 1.20 | - | - | - | - | - | - | 2.00 | - | - | 2.00 | 2.00 | - |

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

| SNO | DESCRIPTION | PROPOSED ACTIONS |
|-----|-----------------------------|------------------|
| 1 | Theoretical Physics | INTERNAL PERSON |
| 2 | Characterization techniques | INTERNAL PERSON |

TOPICS BEYOND SYLLABUS/ADVANCED TOPICS/DESIGN:

| Sl.No | Topic | Reason for introduction |
|-------|-----------------|-------------------------|
| 1 | Biomolecules | INTERNAL PERSON |
| 2 | Electrodynamics | INTERNAL PERSON |



WEB SOURCE REFERENCES:

| | |
|---|---|
| 1 | https://www.youtube.com/watch?v=YO244P1e9QM |
| 2 | https://en.wikipedia.org/wiki/Category:Electrodynamics |
| 3 | http://physics.weber.edu/thermal/links.html |
| 4 | https://www.youtube.com/watch?v=XzCROUAoZh8 |
| 5 | https://www.youtube.com/watch?v=RjIKTkiQOng |

DELIVERY/INSTRUCTIONAL METHODOLOGIES:

1. Lecture (Chalk & Talk (CT), Deliberation, Black board(BB), White board(WB))
2. Information and Communication Technology(ICT) tools (PPT, Video, OHP)
3. Experience Learning (Demonstration, Visiting the Artifact, Modeling)
4. Social Learning (Project & Problem based learning (PBL), Group Discussion(GD), Panel discussion(PD), Seminar, Collaborative learning(CL), Co-operative learning(CL))
5. Enabling (Quiz, Brainstorming, Debate)

DELIVERY METHODS USED FOR EACH COURSE OUT COME

| SNO | DELIVERY METHODS |
|--------|---|
| C111.1 | CHALK & TALK, WEB RESOURCES,LCD |
| C111.2 | CHALK & TALK, WEB RESOURCES,LCD |
| C111.3 | CHALK &TALK , WEB RESOURCES,LCD, STUD. ASSIGNMENT |
| C111.4 | CHALK & TALK, LCD, WEB RESOURCES, STUD. ASSIGNMEN |
| C111.5 | CHALK & TALK, LCD/SMART BOARDS, WEB RESOURCES |

ASSESSMENT METHODOLOGIES-DIRECT.

| ASSIGNMENTS | STUD. SEMINARS | TESTS/MODEL EXAMS | UNIV. EXAMINATION |
|-------------|----------------|-------------------|-------------------|
|-------------|----------------|-------------------|-------------------|

ASSESSMENT METHODOLOGIES-INDIRECT.

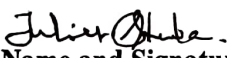
| | |
|------------------------------------|--|
| STUDENT FEEDBACK ON FACULTY (ONCE) | |
|------------------------------------|--|




ASSESSMENT METHODOLOGIES USED FOR EACH COURSE OUT COME

| SNO | ASSESSMENT METHODOLOGIES-DIRECT | ASSESSMENT METHODOLOGIES-INDIRECT |
|---------|---|-----------------------------------|
| C111.1 | ASSIGNMENTS, UNIV. EXAMINATION, STUD. SEMINARS, TESTS/MODEL EXAMS | STUDENT FEEDBACK ON FACULTY |
| C111..2 | UNIV. EXAMINATION, TESTS/MODEL EXAMS, | STUDENT FEEDBACK ON FACULTY |
| C111..3 | UNIV. EXAMINATION, TESTS/MODEL EXAMS, ASSIGNMENTS | STUDENT FEEDBACK ON FACULTY |
| C111.4 | UNIV. EXAMINATION, TESTS/MODEL EXAMS | STUDENT FEEDBACK ON FACULTY |
| C111..5 | ASSIGNMENTS, UNIV. EXAMINATION, TESTS/MODEL EXAMS | STUDENT FEEDBACK ON FACULTY |

Prepared by
(Course Coordinator)


Name and Signature
Dr. A. Juliet Sheela

Approved by
(Programme Coordinator)


Name and Signature
Dr. T. Priya





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.

Phone No: 04544- 246 500, 246501, 246502.

Website : www.nprcolleges.org, www.nprcet.org, Email nprcetprincipal@nprcolleges.org



DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

COURSE INFORMATION SHEET

| | |
|---|--------------------------------------|
| PROGRAMME: Computer Science & Engineering | DEGREE: B.E |
| COURSE: Basic Electrical Electronics and Measurement Engineering | SEMESTER: 2 CREDITS: 3 |
| COURSE CODE: BE8255 / C112 | COURSE TYPE: CORE |
| COURSE AREA/STREAM : Theory | CONTACT HOURS: 6 hours/Week. |
| CORRESPONDING LAB COURSE CODE (IF ANY): | LAB COURSE NAME : NIL |
| COURSE COORDINATOR NAME : Ms.K.Tamilselvi | |

SYLLABUS:

| MODULE | DETAILS | HOURS |
|--------------------|--|-----------|
| I | UNIT I ELECTRICAL CIRCUITS ANALYSIS Ohms Law, Kirchoff's Law-Instantaneous power- series and parallel circuit analysis with resistive, capacitive and inductive network - nodal analysis, mesh analysis- network theorems - Thevenins theorem, Norton theorem, maximum power transfer theorem and superposition theorem, three phase supply- Instantaneous, Reactive and apparent power-star delta conversion. | 9 |
| II | UNIT II ELECTRICAL MACHINES DC and AC ROTATING MACHINES:Types, Construction, principle, Emf and torque equation, application Speed Control- Basics of Stepper Motor – Brushless DC motors- Transformers- Introduction- types and construction, working principle of Ideal transformer-Emf equation- All day efficiency calculation. | 9 |
| III | UNIT III UTILIZATION OF ELECTRICAL POWER Renewable energy sources-wind and solar panels. Illumination by lamps- Sodium Vapour, Mercury vapour, Fluorescent tube. Domestic refrigerator and air conditioner-Electric circuit, construction and working principle. Batteries-NiCd, Pb Acid and Li ion-Charge and Discharge Characteristics. Protection-need for earthing, fuses and circuit breakers.Energy Tariff calculation for domestic loads. | 9 |
| IV | UNIT IV ELECTRONIC CIRCUITS PN Junction-VI Characteristics of Diode, zener diode, Transistors configurations - amplifiers. Op amps- Amplifiers, oscillator, rectifiers, differentiator, integrator, ADC, DAC. Multi vibrator using 555 Timer IC . Voltage regulator IC using LM 723, LM 317. | 9 |
| V | UNIT V ELECTRICAL MEASUREMENT Characteristic of measurement-errors in measurement, torque in indicating instruments- moving coil and moving iron meters, Energy meter and watt meter. Transducers- classification-thermo electric, RTD, Strain gauge, LVDT, LDR and piezoelectric. Oscilloscope-CRO. | 9 |
| TOTAL HOURS | | 45 |



TEXT/REFERENCE BOOKS:

| T/R | BOOK TITLE/AUTHORS/PUBLICATION |
|-----|--|
| T1 | D.P. Kotharti and I.J Nagarath, Basic Electrical and Electronics Engineering, Mc Graw Hill, 2016, Third Edition. |
| T2 | M.S. Sukhija and T.K. Nagsarkar, Basic Electrical and Electronic Engineering, Oxford, 2016. |
| R1 | S.B. Lal Seksena and Kaustuv Dasgupta, Fundaments of Electrical Engineering, Cambridge, 2016 |
| R2 | B.L Theraja, Fundamentals of Electrical Engineering and Electronics. Chand& Co, 2008. |
| R3 | John Bird, —Electrical and Electronic Principles and TechnologyI, Fourth Edition, Elsevier, 2010. |

COURSE PRE-REQUISITES:

| C.CODE | COURSE NAME | DESCRIPTION | SEM |
|--------|-------------|---|-----|
| Nil | Nil | Knowledge regarding basics of electrical,electronics,measurement and instruments. | Nil |

COURSE OBJECTIVES:

| | |
|---|---|
| 1 | To understand the fundamentals of electronic circuit constructions. |
| 2 | To learn the fundamental laws, theorems of electrical circuits and also to analyze them |
| 3 | To study the basic principles of electrical machines and their performance |
| 4 | To study the different energy sources, protective devices and their field applications |
| 5 | To understand the principles and operation of measuring instruments and transducers |

COURSE OUTCOMES:

| SNO | DESCRIPTION | Level in Bloom's Taxonomy |
|--------|--|---------------------------|
| C112.1 | Illustrate the behavior of electric circuits using fundamental laws and techniques | K2 |
| C112.2 | Understand the operation of DC, AC and Special machines | K2 |
| C112.3 | Summarize different energy sources, protective devices and its applications | K2 |
| C112.4 | Outline the characteristics and applications of semiconductor diodes | K2 |
| C112.5 | Summarize the characteristics and errors of the instruments | K2 |



| | | |
|--------|---|----|
| C112.6 | Understand the working of different types of Analog Instruments and transducers | K2 |
|--------|---|----|

CORELATION BETWEEN COURSE OUTCOMES AND PROGRAMME OUTCOMES

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|
| C112.1 | 2 | 2 | 1 | - | - | - | - | - | - | - | - | - |
| C112.2 | 2 | 2 | 1 | - | 2 | - | - | - | - | - | - | - |
| C112.3 | 2 | 2 | 1 | - | 2 | - | - | - | - | - | - | - |
| C112.4 | 2 | 2 | 1 | 1 | 1 | - | - | - | - | - | - | - |
| C112.5 | 2 | 2 | 1 | 1 | 1 | - | - | - | - | - | - | - |
| C112 | 2 | 2 | 1 | - | - | - | - | - | - | - | - | - |

CORELATION BETWEEN COURSE OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

| CO | PSO 1 | PSO 2 | PSO 3 |
|--------|-------|-------|-------|
| C112.1 | 2 | - | 1 |
| C112.2 | 2 | 1 | - |
| C112.3 | 1 | - | - |
| C112.4 | 1 | 1 | 1 |
| C112 | 1 | 1 | 1 |

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

| SNO | DESCRIPTION | PROPOSED ACTIONS |
|-----|-------------|------------------|
| | Nil | |

TOPICS BEYOND SYLLABUS/ADVANCED TOPICS/DESIGN:

| Sl.No | Topic | Mapping to PO |
|-------|-------------|---------------|
| 1 | Electronics | - |

WEB SOURCE REFERENCES:

| | |
|---|---|
| 1 | https://nptel.ac.in/courses/108/108/108108076/ |
| 2 | www.youtube.com |



| | |
|---|---|
| 3 | https://engineeringvidelectures.com/course/758 |
|---|---|

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 |
|--------|---|
| C112.1 | CHALK & TALK, STUD. ASSIGNMENT, TUTORIAL |
| C112.2 | CHALK & TALK, STUD. ASSIGNMENT, TUTORIAL |
| C112.3 | CHALK & TALK , STUD.ASSIGNMENT, WEB RESOURCES |
| C112.4 | CHALK & TALK, WEB RESOURCES, TUTORIAL,LCD/SMART BORADS |
| C112.5 | CHALK & TALK, STUD. ASSIGNMENT, LCD/SMART BORADS ,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 |
|--------|---|-----------------------------------|
| C112.1 | Assignments, Univ. Examination, Stud. Seminars, Tests/Model Exams | Student Feedback On Faculty |
| C112.2 | Univ. Examination, Tests/Model Exams, | Student Feedback On Faculty |
| C112.3 | Univ. Examination, Tests/Model Exams, Assignments | Student Feedback On Faculty |
| C112.4 | Univ. Examination, Tests/Model Exams | Student Feedback On Faculty |
| C112.5 | Assignments, Univ. Examination, Tests/Model Exams | Student Feedback On Faculty |

Prepared by
(Course Coordinator)

K. Tamilselvi

Name and Signature
Ms.K.Tamilselvi

Approved by
(Programme Coordinator)

[Signature]

Name andSignature
Dr. T. Priya





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.

Phone No: 04544- 246 500, 246501, 246502.

Website : www.nprcolleges.org, www.nprcet.org, Email: nprcetprincipal@nprcolleges.org



DEPARTMENT OF SCIENCE AND HUMANITIES

COURSE INFORMATION SHEET

| | |
|--|--|
| PROGRAMME: Computer Science & Engineering | DEGREE: B.E |
| COURSE: Environmental Science And Engineering | SEMESTER: 2 CREDITS: 3 |
| COURSE CODE: GE8291/C113 | COURSE TYPE: CORE |
| COURSE AREA/STREAM : Chemistry | CONTACT HOURS: 3+1 hours/Week. |
| CORRESPONDING LAB COURSE CODE (IF ANY): Nil | LAB COURSE NAME: Nil |
| COURSE COORDINATOR NAME : | Dr.C.Balamurugan |

SYLLABUS:

| MODULE | DETAILS | HOURS |
|--------|--|-------|
| I | UNIT I ENVIRONMENT, ECOSYSTEMS AND BIODIVERSITY Definition, scope and importance of environment – need for public awareness - concept of an ecosystem – structure and function of an ecosystem – producers, consumers and decomposers – energy flow in the ecosystem – ecological succession – food chains, food webs and ecological pyramids – Introduction, types, characteristic features, structure and function of the (a) forest ecosystem (b) grassland ecosystem (c) desert ecosystem (d) aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries) – Introduction to biodiversity definition: genetic, species and ecosystem diversity – biogeographical classification of India – value of biodiversity: consumptive use, productive use, social, ethical, aesthetic and option values – Biodiversity at global, national and local levels – India as a mega- wildlife, man-wildlife conflicts – endangered and endemic species of India – diversity nation – hot-spots of biodiversity – threats to biodiversity: habitat loss, poaching of conservation of biodiversity: In-situ and ex-situ conservation of biodiversity. Field study of common plants, insects, birds; Field study of simple ecosystems – pond, river, hill slopes, etc. | 14 |
| II | UNIT II ENVIRONMENTAL POLLUTION Definition – causes, effects and control measures of: (a) Air pollution (b) Water pollution (c) Soil pollution (d) Marine pollution (e) Noise pollution (f) Thermal pollution (g) Nuclear hazards – solid waste management: causes, effects and control measures of municipal solid wastes – role of an individual in prevention of pollution – pollution case studies – disaster management: floods, earthquake, cyclone and landslides. Field study of local polluted site – Urban / Rural / Industrial / Agricultural. | 8 |



| | | |
|--------------------|--|-----------|
| III | UNIT III NATURAL RESOURCES Forest resources: Use and over-exploitation, deforestation, case studies- timber extraction, mining, dams and their effects on forests and tribal people – Water resources: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems – Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources, case studies – Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies – Energy resources: Growing energy needs, renewable and non renewable energy sources, use of alternate energy sources. case studies – Land resources: Land as a resource, land degradation, man induced landslides, soil erosion and desertification – role of an individual in conservation of natural resources – Equitable use of resources for sustainable lifestyles. Field study of local area to document environmental assets – river / forest / grassland / hill / mountain. | 10 |
| IV | UNIT IV SOCIAL ISSUES AND THE ENVIRONMENT From unsustainable to sustainable development – urban problems related to energy – water conservation, rain water harvesting, watershed management – resettlement and rehabilitation of people; its problems and concerns, case studies – role of non-governmental organization- environmental ethics: Issues and possible solutions – climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust, case studies. – wasteland reclamation – consumerism and waste products – environment production act – Air (Prevention and Control of Pollution) act – Water (Prevention and control of Pollution) act – Wildlife protection act – Forest conservation act – enforcement machinery involved in environmental legislation- central and state pollution control boards- Public awareness. | 7 |
| V | UNIT V HUMAN POPULATION AND THE ENVIRONMENT Population growth, variation among nations – population explosion – family welfare programme – environment and human health – human rights – value education – HIV / AIDS – women and child welfare – role of information technology in environment and human health – Case studies. | 6 |
| TOTAL HOURS | | 45 |

TEXT/REFERENCE BOOKS:

| T/R | BOOK TITLE/AUTHORS/PUBLICATION |
|-----|---|
| T1 | Benny Joseph, 'Environmental Science and Engineering', Tata McGraw-Hill, New Delhi, 2006. |
| T2 | Gilbert M.Masters, 'Introduction to Environmental Engineering and Science', 2nd edition, Pearson Education, 2004. |
| R1 | Dharmendra S. Sengar, 'Environmental law', Prentice hall of India Pvt Ltd, New Delhi, 2007. |
| R2 | Erach Bharucha, "Textbook of Environmental Studies", Universities Press(I) Pvt, Ltd, Hyderabad, 2015. |
| R3 | G. Tyler Miller and Scott E. Spoolman, "Environmental Science", Cengage Learning India PVT, LTD, Delhi, 2014. |



COURSE PRE-REQUISITES:

| C.CODE | COURSE NAME | DESCRIPTION | SEM |
|--------|---------------------------------------|---|-----|
| C113 | Environmental Science And Engineering | The study of the physical, chemical and biological processes that take place on the Earth, as well as the social, political and cultural processes which impact the planet. | I |

COURSE OBJECTIVES:

| | |
|---|--|
| 1 | To study the nature and facts about environment. |
| 2 | To study the interrelationship between living organism and environment. |
| 3 | To appreciate the importance of environment by assessing its impact on the human world; envision the surrounding environment, its functions and its value. |
| 4 | To study the dynamic processes and understand the features of the earth's interior and surface. |
| 5 | To study the integrated themes and biodiversity, natural resources, pollution control and waste management. |

COURSE OUTCOMES:

| SNO | DESCRIPTION | Level in Bloom's Taxonomy |
|--------|---|---------------------------|
| C113.1 | Summarize the values, threats, conservation of biodiversity and ecosystems. | K2 |
| C113.2 | Discuss the sources, effects, control measures of different types of pollution, and solid waste management. | K1 |
| C113.3 | Associate the effects of exploitation of Natural resources on environment | K3 |
| C113.4 | Summarize the water conservation methods and various environmental acts for environmental sustainability | K2 |
| C113.5 | Discuss scientific, technological, economic and social solutions to environmental problems | K1 |



CORELATION BETWEEN COURSE OUTCOMES AND PROGRAMME OUTCOMES

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|--------|------|-----|------|-----|-----|------|------|------|-----|------|------|------|
| C113.1 | 3 | - | 1 | - | - | 3 | 3 | 2 | - | - | - | 2 |
| C113.2 | 2 | - | 1 | - | - | 3 | 3 | 2 | - | - | - | 2 |
| C113.3 | 1 | - | 1 | - | - | 3 | 3 | 2 | - | - | - | 2 |
| C113.4 | 3 | - | 1 | - | - | 3 | 3 | 1 | - | - | - | 2 |
| C113.5 | 1 | - | 1 | - | - | 3 | 3 | 2 | - | - | - | 2 |
| C113 | 2.00 | - | 1.00 | - | - | 3.00 | 3.00 | 1.80 | - | - | - | 2.00 |

CORELATION BETWEEN COURSE OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

| CO | PSO 1 | PSO 2 | PSO 3 |
|--------|-------|-------|-------|
| C113.1 | - | - | - |
| C113.2 | - | - | - |
| C113.3 | - | - | - |
| C113.4 | - | - | - |
| C113.5 | - | - | - |
| C113 | - | - | - |

TOPICS BEYOND SYLLABUS/ADVANCED TOPICS/DESIGN:

| Sl.No | Topic | Mapping to PO |
|-------|---|----------------|
| 1 | Biodiversity in kodaikanal | PO1, PO2,. PO3 |
| 2 | Disaster management: Current senerio | PO1, PO2,. PO3 |
| 3 | Endangered and endemic species of India Examples | PO1, PO2,. PO3 |
| 4 | Wildlife protection society of india | PO1, PO2,. PO3 |
| 5 | Unesco environmental education | PO1, PO2,. PO3 |



WEB SOURCE REFERENCES:

| | | |
|---|---|--|
| 1 | http://biodiversity-mohanpai.blogspot.com/2008/10/high-ranges.html | |
| 2 | https://www.ripublication.com/ijhss16/ijhssv6n1_01.pdf | |
| 3 | https://byjus.com/biology/endemic-species/ | |
| 4 | http://www.wpsi-india.org/ | |
| 5 | http://www.unesco.org/new/en/natural-sciences/special-themes/science-education/environment/ | |

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 |
|--------|---|
| C113.1 | CHALK & TALK, STUD. ASSIGNMENT, TUTORIAL |
| C113.2 | CHALK & TALK, STUD. ASSIGNMENT, TUTORIAL |
| C113.3 | CHALK & TALK , STUD.ASSIGNMENT, WEB RESOURCES |
| C113.4 | CHALK & TALK, LCD/SMART BOARDS, WEB RESOURCES, TUTORIAL |
| C113.5 | CHALK & TALK, STUD. ASSIGNMENT, LCD/SMART BOARDS, WEB RESOURCES |

ASSESSMENT METHODOLOGIES-DIRECT.

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

ASSESSMENT METHODOLOGIES-INDIRECT.

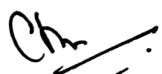
| | |
|------------------------------------|--|
| STUDENT FEEDBACK ON FACULTY (ONCE) | |
|------------------------------------|--|




ASSESSMENT METHODOLOGIES USED FOR EACH COURSE OUT COME

| SNO | ASSESSMENT METHODOLOGIES-DIRECT | ASSESSMENT METHODOLOGIES-INDIRECT |
|--------|---|-----------------------------------|
| C113.1 | Assignments, Univ. Examination, Stud. Seminars, Tests/Model Exams | Student Feedback On Faculty |
| C113.2 | Univ. Examination, Tests/Model Exams, | Student Feedback On Faculty |
| C113.3 | Univ. Examination, Tests/Model Exams, Assignments | Student Feedback On Faculty |
| C113.4 | Univ. Examination, Tests/Model Exams | Student Feedback On Faculty |
| C113.5 | Assignments, Univ. Examination, Tests/Model Exams | Student Feedback On Faculty |

Prepared by
(Course Coordinator)


Dr.C.Balamurugan
Name and Signature

Approved by
(Programme Coordinator)


Dr.T.Priya
Name and Signature





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.

Phone No: 04544- 246 500, 246501, 246502.

Website : www.nprcolleges.org, www.nprcet.org, Email nprcetprincipal@nprcolleges.org



DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

COURSE INFORMATION SHEET

| | |
|--|--|
| PROGRAMME: Computer Science & Engineering | DEGREE: B.E |
| COURSE: Programming in C | SEMESTER: 2 CREDITS: 3 |
| COURSE CODE: CS8251 / C114 | COURSE TYPE: CORE |
| COURSE AREA/STREAM : Programming | CONTACT HOURS: 6+1 hours/Week. |
| CORRESPONDING LAB COURSE CODE (IF ANY): CS8261 | LAB COURSE NAME : C Programming Lab |
| COURSE COORDINATOR NAME : Mr. J. Viswanath | |

SYLLABUS:

| MODULE | DETAILS | HOURS |
|--------|---|-------|
| I | Introduction to programming paradigms - Structure of C program - C programming: Data Types – Storage classes - Constants – Enumeration Constants - Keywords – Operators: Precedence and Associativity - Expressions - Input/Output statements, Assignment statements – Decision making statements - Switch statement - Looping statements – Pre-processor directives - Compilation process | 9 |
| II | Introduction to Arrays: Declaration, Initialization – One dimensional array – Example Program: Computing Mean, Median and Mode - Two dimensional arrays – Example Program: Matrix Operations (Addition, Scaling, Determinant and Transpose) - String operations: length, compare, concatenate, copy – Selection sort, linear and binary search | 9 |
| III | Introduction to functions: Function prototype, function definition, function call, Built-in functions (string functions, math functions) – Recursion – Example Program: Computation of Sine series, Scientific calculator using built-in functions, Binary Search using recursive functions – Pointers – Pointer operators – Pointer arithmetic – Arrays and pointers – Array of pointers – Example Program: Sorting of names – Parameter passing: Pass by value, Pass by reference – Example Program: Swapping of two numbers and changing the value of a variable using pass by reference | 9 |



| | |
|---|---|
| 4 | To do input/output and file handling in C |
|---|---|

COURSE OUTCOMES:

| SNO | DESCRIPTION | Level in Bloom's Taxonomy |
|--------|--|---------------------------|
| C114.1 | Understand the syntax for C programming | K2 |
| C114.2 | Associate the programs in 'C' for real world situation | K2 |
| C114.3 | Apply the concepts of Arrays, Strings in 'C' language for user defined problems. | K3 |
| C114.4 | Apply the concept of functions and pointers. | K3 |
| C114.5 | Associate the programs with structure using 'C' language. | K2 |
| C114.6 | Discuss to read and write data from/to files in 'C' Programs. | K2 |

CORELATION BETWEEN COURSE OUTCOMES AND PROGRAMME OUTCOMES

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|
| C114.1 | 2 | 2 | 2 | 1 | - | - | - | - | - | 1 | - | 2 |
| C114.2 | 2 | 2 | 2 | 1 | 2 | - | - | - | - | 1 | - | 2 |
| C114.3 | 3 | 3 | 3 | 2 | 3 | - | - | - | - | 1 | 1 | 2 |
| C114.4 | 3 | 2 | - | - | 2 | - | - | - | - | 1 | - | 2 |
| C114.5 | 3 | 3 | - | - | 3 | - | - | - | - | 3 | - | 3 |
| C114.6 | 3 | 3 | - | - | 3 | - | - | - | - | 2 | - | 1 |
| C114 | 3 | 2 | 2 | 1 | 3 | - | - | - | - | 1 | 1 | 2 |

CORELATION BETWEEN COURSE OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

| CO | PSO 1 | PSO 2 | PSO 3 |
|--------|-------|-------|-------|
| C114.1 | 2 | 3 | 2 |
| C114.2 | 2 | 3 | 2 |
| C114.3 | 2 | 3 | 2 |
| C114.4 | 3 | 3 | 2 |
| C114.5 | 3 | 3 | 3 |
| C114.6 | 3 | 3 | 3 |
| C114 | 2 | 3 | 2 |



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

| SNO | DESCRIPTION | Mapping to PO | PROPOSED ACTIONS |
|-----|-------------------------|---------------|------------------|
| 1 | Effective C Programming | PO3, PO5 | Special Lecture |

TOPICS BEYOND SYLLABUS/ADVANCED TOPICS/DESIGN:

| Sl.No | Topic | Mapping to P O |
|-------|---------------------------|----------------|
| 1 | Dynamic Memory Allocation | PO6 |
| 2 | Command Line Arguments | PO10 ,PO12 |

WEB SOURCE REFERENCES:

| | |
|---|---|
| 1 | http://www.tutorialspoint.com/computer_fundamentals/ |
| 2 | http://www.indiabix.com/computer-science/computer-fundamentals/ |
| 3 | http://www.placementquestion.com/category/computer_fundamentals/ |
| 4 | http://www.proprofs.com/quiz-school/story.php?title=fundamentals-computer-part-1 |
| 5 | http://www.tutorialspoint.com/computer_fundamentals/ |

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 |
|--------|---|
| C114.1 | CHALK & TALK, STUD. ASSIGNMENT, TUTORIAL |
| C114.2 | CHALK & TALK, STUD. ASSIGNMENT, TUTORIAL |
| C114.3 | CHALK & TALK , STUD.ASSIGNMENT, WEB RESOURCES |
| C114.4 | CHALK & TALK, LCD/SMART BOARDS, WEB RESOURCES, TUTORIAL |
| C114.5 | CHALK & TALK, STUD. ASSIGNMENT, LCD/SMART BOARDS, WEB RESOURCES |
| C114.6 | CHALK & TALK, LCD/SMART BOARDS, STUD.SEMINARS |

| | | |
|--------------------|--|-----------|
| IV | Structure - Nested structures – Pointer and Structures – Array of structures – Example Program using structures and pointers – Self referential structures – Dynamic memory allocation - Singly linked list - typedef | 9 |
| V | Files – Types of file processing: Sequential access, Random access – Sequential access file - Example Program: Finding average of numbers stored in sequential access file - Random access file - Example Program: Transaction processing using random access files – Command line arguments | 9 |
| TOTAL HOURS | | 45 |

TEXT/REFERENCE BOOKS:

| T/R | BOOK TITLE/AUTHORS/PUBLICATION |
|-----|---|
| T1 | Reema Thareja, —Programming in C, Oxford University Press, Second Edition, 2016 |
| T2 | Kernighan, B.W and Ritchie,D.M, —The C Programming language, Second Edition, Pearson Education, 2006 |
| R1 | Paul Deitel and Harvey Deitel, —C How to Program, Seventh edition, Pearson Publication |
| R2 | Juneja, B. L and Anita Seth, —Programming in C, CENGAGE Learning India Pvt. Ltd., 2011 |
| R3 | Pradip Dey, Manas Ghosh, —Fundamentals of Computing and Programming in C, First Edition, Oxford University Press, 2009. |
| R4 | Anita Goel and Ajay Mittal, —Computer Fundamentals and Programming in C, Dorling Kindersley (India) Pvt. Ltd., Pearson Education in South Asia, 2011. |
| R5 | Byron S. Gottfried, "Schaum's Outline of Theory and Problems of Programming with C", McGraw-Hill Education, 1996. |

COURSE PRE-REQUISITES:

| C.CODE | COURSE NAME | DESCRIPTION | SEM |
|--------|-------------|-------------|-----|
| NIL | | | |

COURSE OBJECTIVES:

| | |
|---|--|
| 1 | To develop C Programs using basic programming constructs |
| 2 | To develop C programs using arrays and strings |
| 3 | To develop applications in C using functions , pointers and structures |



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 |
|--------|---|-----------------------------------|
| C114.1 | ASSIGNMENTS, UNIV. EXAMINATION, STUD. SEMINARS, TESTS/MODEL EXAMS | STUDENT FEEDBACK ON FACULTY |
| C114.2 | UNIV. EXAMINATION, TESTS/MODEL EXAMS, | STUDENT FEEDBACK ON FACULTY |
| C114.3 | UNIV. EXAMINATION, TESTS/MODEL EXAMS, ASSIGNMENTS | STUDENT FEEDBACK ON FACULTY |
| C114.4 | UNIV. EXAMINATION, TESTS/MODEL EXAMS | STUDENT FEEDBACK ON FACULTY |
| C114.5 | ASSIGNMENTS, UNIV. EXAMINATION, TESTS/MODEL EXAMS | STUDENT FEEDBACK ON FACULTY |
| C114.6 | UNIV. EXAMINATION, TESTS/MODEL EXAMS, STUD SEMINARS | STUDENT FEEDBACK ON FACULTY |

**Prepared by
(Course Coordinator)**

J. Viswanath
**Mr. J. Viswanath
Name and Signature**

**Approved by
(Programme Coordinator)**

J. Viswanath
**Mr. J. Viswanath
Name and Signature**

