

**ACADEMIC REGULATIONS
COURSE STRUCTURE
AND
DETAILED SYLLABUS**

3

**MECHANICAL
ENGINEERING**

For

**B.TECH. FOUR YEAR DEGREE COURSE
(Applicable for the batches admitted from 2013-2014)**



**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
KUKATPALLY, HYDERABAD - 500 085.**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD.

B. TECH. MECHANICAL ENGINEERING

I YEAR

| Code | Subject | L | T/P/D | C |
|--------|--|-----------|-----------|-----------|
| A10001 | English | 2 | - | 4 |
| A10002 | Mathematics - I | 3 | 1 | 6 |
| A10302 | Engineering Mechanics | 3 | - | 6 |
| A10004 | Engineering Physics | 3 | - | 6 |
| A10005 | Engineering Chemistry | 3 | - | 6 |
| A10501 | Computer Programming | 3 | - | 6 |
| A10301 | Engineering Drawing | 2 | 3 | 6 |
| A10581 | Computer Programming Lab. | - | 3 | 4 |
| A10081 | Engineering Physics & Engineering Chemistry Lab. | - | 3 | 4 |
| A10083 | English Language Communication Skills Lab. | - | 3 | 4 |
| A10082 | IT Workshop / Engineering Workshop | - | 3 | 4 |
| | Total | 19 | 16 | 56 |

II YEAR I SEMESTER

| Code | Subject | L | T/P/D | C |
|--------|--|-----------|----------|-----------|
| A30009 | Environmental Studies | 4 | - | 4 |
| A30008 | Probability and Statistics | 4 | - | 4 |
| A30203 | Electrical and Electronics Engineering | 4 | - | 4 |
| A30104 | Mechanics of Solids | 4 | - | 4 |
| A30306 | Thermodynamics | 4 | - | 4 |
| A31803 | Metallurgy and Materials Science | 4 | - | 4 |
| A30281 | Electrical and Electronics Engineering Lab | - | 3 | 2 |
| A30085 | Metallurgy & Mechanics of Solids Lab | - | 3 | 2 |
| | Total | 24 | 6 | 28 |

II YEAR II SEMESTER

| Code | Subject | L | T/P/D | C |
|--------|--|-----------|-----------|-----------|
| A40312 | Production Technology | 4 | - | 4 |
| A40309 | Kinematics of Machinery | 4 | - | 4 |
| A40313 | Thermal Engineering -I | 4 | - | 4 |
| A40112 | Mechanics of Fluids and Hydraulic Machines | 4 | - | 4 |
| A40310 | Machine Drawing | - | 6 | 4 |
| A40006 | Mathematics-II | 4 | - | 4 |
| A40382 | Production Technology Lab | - | 3 | 2 |
| A40188 | Mechanics of Fluids & Hydraulic Machines Lab | - | 3 | 2 |
| | Total | 20 | 12 | 28 |

III YEAR I SEMESTER

| Code | Subject | L | T/P/D | C |
|--------|---|-----------|----------|-----------|
| A50010 | Managerial Economics and Financial Analysis | 4 | - | 4 |
| A50318 | Engineering Metrology | 4 | - | 4 |
| A50317 | Dynamics of Machinery | 4 | - | 4 |
| A50321 | Machine Tools | 4 | - | 4 |
| A50316 | Design of Machine Members - I | 4 | - | 4 |
| A50326 | Thermal Engineering -II | 4 | - | 4 |
| A50384 | Machine Tools & Metrology Lab | - | 3 | 2 |
| A50383 | Thermal Engineering Lab | - | 3 | 2 |
| | Total | 24 | 6 | 28 |

III YEAR II SEMESTER

| Code | Subject | L | T/P/D | C |
|--------|--------------------------------------|-----------|----------|-----------|
| A62405 | Automobile Engineering | 4 | - | 4 |
| A60330 | Finite Element Methods | 4 | - | 4 |
| A60334 | Refrigeration and Air Conditioning | 4 | - | 4 |
| A60329 | Design of Machine Members - II | 4 | - | 4 |
| A60331 | Heat Transfer | 4 | - | 4 |
| | Open Elective | 4 | - | 4 |
| A60117 | Disaster Management | | | |
| A60017 | Intellectual Property Rights | | | |
| A60018 | Human Values and Professional Ethics | | | |
| A60387 | Heat Transfer Lab | - | 3 | 2 |
| A60086 | Advanced Communication Skills Lab | - | 3 | 2 |
| | Total | 24 | 6 | 28 |

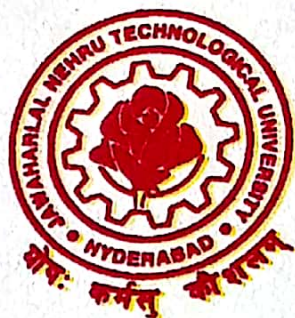
**ACADEMIC REGULATIONS
COURSE STRUCTURE
AND
DETAILED SYLLABUS**

4

**ELECTRONICS AND
COMMUNICATION
ENGINEERING**

For

**B.TECH. FOUR YEAR DEGREE COURSE
(Applicable for the batches admitted from 2013-2014)**



**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
KUKATPALLY, HYDERABAD – 500 085.**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD.

B. TECH. ELECTRONICS AND COMMUNICATION ENGINEERING

I YEAR

| Code | Subject | L | T/P/D | C |
|--------|--|-----------|-----------|-----------|
| A10001 | English | 2 | - | 4 |
| A10002 | Mathematics - I | 3 | 1 | 6 |
| A10003 | Mathematical Methods | 3 | - | 6 |
| A10004 | Engineering Physics | 3 | - | 6 |
| A10005 | Engineering Chemistry | 3 | - | 6 |
| A10501 | Computer Programming | 3 | - | 6 |
| A10301 | Engineering Drawing | 2 | 3 | 6 |
| A10581 | Computer Programming Lab. | - | 3 | 4 |
| A10081 | Engineering Physics / Engineering Chemistry Lab. | - | 3 | 4 |
| A10083 | English Language Communication Skills Lab. | - | 3 | 4 |
| A10082 | IT Workshop / Engineering Workshop | - | 3 | 4 |
| | Total | 19 | 16 | 56 |

II YEAR I SEMESTER

| Code | Subject | L | T/P/D | C |
|--------|---|-----------|----------|-----------|
| A30007 | Mathematics - III | 4 | - | 4 |
| A30405 | Probability Theory and Stochastic Processes | 4 | - | 4 |
| A30407 | Switching Theory and Logic Design | 4 | - | 4 |
| A30204 | Electrical Circuits | 4 | - | 4 |
| A30404 | Electronic Devices and Circuits | 4 | - | 4 |
| A30406 | Signals and Systems | 4 | - | 4 |
| A30482 | Electronic Devices and Circuits Lab. | - | 3 | 2 |
| A30481 | Basic Simulation Lab. | - | 3 | 2 |
| | Total. | 24 | 6 | 28 |

II YEAR II SEMESTER

| Code | Subject | L | T/P/D | C |
|--------|---|-----------|----------|-----------|
| A40215 | Principles of Electrical Engineering | 4 | - | 4 |
| A40412 | Electronic Circuit Analysis | 4 | - | 4 |
| A40415 | Pulse and Digital Circuits | 4 | - | 4 |
| A40009 | Environmental Studies | 4 | - | 4 |
| A40411 | Electromagnetic Theory and Transmission Lines | 4 | - | 4 |
| A40410 | Digital Design using Verilog HDL | 4 | - | 4 |
| A40288 | Electrical Technology Lab. | - | 3 | 2 |
| A40484 | Electronic Circuits and Pulse Circuits Lab. | - | 3 | 2 |
| | Total | 24 | 6 | 28 |

III YEAR I SEMESTER

| Code | Subject | L | T/P/D | C |
|--------|---|-----------|----------|-----------|
| A50217 | Control Systems Engineering | 4 | - | 4 |
| A50516 | Computer Organization and Operating Systems | 4 | - | 4 |
| A50418 | Antennas and Wave Propagation | 4 | - | 4 |
| A50422 | Electronic Measurements and Instrumentation | 4 | - | 4 |
| A50408 | Analog Communications | 4 | - | 4 |
| A50425 | Linear and Digital IC Applications | 4 | - | 4 |
| A50482 | Analog Communications Lab. | - | 3 | 2 |
| A50488 | IC Applications and HDL Simulation Lab. | - | 3 | 2 |
| | Total | 24 | 6 | 28 |

III YEAR II SEMESTER

| Code | Subject | L | T/P/D | C |
|--------|---|-----------|----------|-----------|
| A60010 | Managerial Economics and Financial Analysis | 4 | - | 4 |
| | Open Elective: | 4 | - | 4 |
| A60018 | Human Values and Professional Ethics | | | |
| A60117 | Disaster Management | | | |
| A60017 | Intellectual Property Rights | | | |
| A60420 | Digital Communications | 4 | - | 4 |
| A60432 | VLSI Design | 4 | - | 4 |
| A60430 | Microprocessors and Microcontrollers | 4 | - | 4 |
| A60421 | Digital Signal Processing | 4 | - | 4 |
| A60494 | Microprocessors and Microcontrollers Lab. | - | 3 | 2 |
| A60493 | Digital Signal Processing Lab. | - | 3 | 2 |
| | Total | 24 | 6 | 28 |

**ACADEMIC REGULATIONS
COURSE STRUCTURE
AND
DETAILED SYLLABUS**

2

***ELECTRICAL AND
ELECTRONICS
ENGINEERING***

For

**B.TECH. FOUR YEAR DEGREE COURSE
(Applicable for the batches admitted from 2013-2014)**



**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
KUKATPALLY, HYDERABAD – 500 085.**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD.

B. TECH. ELECTRICAL AND ELECTRONICS ENGINEERING

I YEAR

| Code | Subject | L | T/P/D | C |
|--------|--|-----------|-----------|-----------|
| A10001 | English | 2 | - | 4 |
| A10002 | Mathematics - I | 3 | 1 | 6 |
| A10003 | Mathematical Methods | 3 | - | 6 |
| A10004 | Engineering Physics | 3 | - | 6 |
| A10005 | Engineering Chemistry | 3 | - | 6 |
| A10501 | Computer Programming | 3 | - | 6 |
| A10301 | Engineering Drawing | 2 | 3 | 6 |
| A10581 | Computer Programming Lab. | - | 3 | 4 |
| A10081 | Engineering Physics / Engineering Chemistry Lab. | - | 3 | 4 |
| A10083 | English Language Communication Skills Lab. | - | 3 | 4 |
| A10082 | IT Workshop / Engineering Workshop | - | 3 | 4 |
| | Total | 19 | 16 | 56 |

II YEAR I SEMESTER

| Code | Subject | L | T/P/D | C |
|--------|---|-----------|----------|-----------|
| A30007 | Mathematics - III | 4 | - | 4 |
| A30102 | Fluid Mechanics and Hydraulic Machinery | 4 | - | 4 |
| A30404 | Electronic Devices & Circuits | 4 | - | 4 |
| A30204 | Electrical Circuits | 4 | - | 4 |
| A30403 | Electromagnetic fields | 4 | - | 4 |
| A30206 | Electrical Machines-I | 4 | - | 4 |
| A30181 | Fluid Mechanics and Hydraulic Machinery Lab | - | 3 | 2 |
| A30482 | Electronic devices & Circuit labs | - | 3 | 2 |
| | Total | 24 | 6 | 28 |

II YEAR II SEMESTER

| Code | Subject | L | T/P/D | C |
|--------|---|-----------|----------|-----------|
| A40010 | Managerial Economics & Financial Analysis | 4 | - | 4 |
| A40214 | Power Systems-I | 4 | - | 4 |
| A40413 | Electronic Circuits | 4 | - | 4 |
| A40407 | Switching Theory and Logic Design | 4 | - | 4 |
| A40213 | Network Theory | 4 | - | 4 |
| A40212 | Electrical Machines-II | 4 | - | 4 |
| A40287 | Electrical Machines lab -I | - | 3 | 2 |
| A40286 | Electrical Circuits and Simulation Lab | - | 3 | 2 |
| | Total | 24 | 6 | 28 |

III YEAR I SEMESTER

| Code | Subject | L | T/P/D | C |
|--------|-----------------------------------|-----------|----------|-----------|
| A50423 | IC Applications | 4 | - | 4 |
| A50014 | Management Science | 4 | - | 4 |
| A50221 | Power Systems-II | 4 | - | 4 |
| A50211 | Control Systems | 4 | - | 4 |
| A50220 | Power Electronics | 4 | - | 4 |
| A50218 | Electrical Machines-III | 4 | - | 4 |
| A50289 | Electrical Machines lab -II | - | 3 | 2 |
| A50086 | Advanced Communication Skills Lab | - | 3 | 2 |
| | Total | 24 | 6 | 28 |

III YEAR II SEMESTER

| Code | Subject | L | T/P/D | C |
|--------|--|-----------|----------|-----------|
| A60223 | Electrical and Electronics Instrumentation | 4 | - | 4 |
| A60225 | Static Drives | 4 | - | 4 |
| A60222 | Computer Methods in Power Systems | 4 | - | 4 |
| A60430 | Microprocessors and Interfacing Devices | 4 | - | 4 |
| A60009 | Environmental Studies | 4 | - | 4 |
| | Open Elective | 4 | - | 4 |
| A60117 | Disaster Management | | | |
| A60017 | Intellectual Property Rights | | | |
| A60018 | Human Values and Professional Ethics | | | |
| A60290 | Control Systems and Simulation Lab | - | 3 | 2 |
| A60291 | Power Electronics and Simulation Lab | - | 3 | 2 |
| | Total | 24 | 6 | 28 |

**ACADEMIC REGULATIONS
COURSE STRUCTURE
AND
DETAILED SYLLABUS**

5

**COMPUTER SCIENCE
AND
ENGINEERING**

For

**B.TECH. FOUR YEAR DEGREE COURSE
(Applicable for the batches admitted from 2013-2014)**



JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

KUKATPALLY, HYDERABAD – 500 085.

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD.

B. TECH. COMPUTER SCIENCE AND ENGINEERING

I YEAR

| Code | Subject | L | T/P/D | C |
|--------|--|-----------|-----------|-----------|
| A10001 | English | 2 | - | 4 |
| A10002 | Mathematics - I | 3 | 1 | 6 |
| A10003 | Mathematical Methods | 3 | - | 6 |
| A10004 | Engineering Physics | 3 | - | 6 |
| A10005 | Engineering Chemistry | 3 | - | 6 |
| A10501 | Computer Programming | 3 | - | 6 |
| A10301 | Engineering Drawing | 2 | 3 | 6 |
| A10581 | Computer Programming Lab. | - | 3 | 4 |
| A10081 | Engineering Physics / Engineering Chemistry Lab. | - | 3 | 4 |
| A10083 | English Language Communication Skills Lab. | - | 3 | 4 |
| A10082 | IT Workshop / Engineering Workshop | - | 3 | 4 |
| | Total | 19 | 16 | 56 |

II YEAR I SEMESTER

| Code | Subject | L | T/P/D | C |
|--------|--|-----------|----------|-----------|
| A30008 | Probability and Statistics | 4 | - | 4 |
| A30504 | Mathematical Foundations of Computer Science | 4 | - | 4 |
| A30502 | Data Structures | 4 | - | 4 |
| A30401 | Digital Logic Design | 4 | - | 4 |
| A30404 | Electronic Devices and Circuits | 4 | - | 4 |
| A30202 | Basic Electrical Engineering | 4 | - | 4 |
| A30282 | Electrical and Electronics Lab | - | 3 | 2 |
| A30582 | Data Structures Lab | - | 3 | 2 |
| | Total | 24 | 6 | 28 |

II YEAR II SEMESTER

| Code | Subject | L | T/P/D | C |
|--------|--------------------------------------|-----------|----------|-----------|
| A40506 | Computer Organization | 4 | - | 4 |
| A40507 | Database Management Systems | 4 | - | 4 |
| A40503 | Java Programming | 4 | - | 4 |
| A40009 | Environmental studies | 4 | - | 4 |
| A40509 | Formal Languages and Automata Theory | 4 | - | 4 |
| A40508 | Design and Analysis of Algorithms | 4 | - | 4 |
| A40585 | Java Programming Lab | - | 3 | 2 |
| A40584 | Database Management Systems Lab | - | 3 | 2 |
| | Total | 24 | 6 | 28 |

III YEAR I SEMESTER

| Code | Subject | L | T/P/D | C |
|--------|--------------------------------------|-----------|----------|-----------|
| A50511 | Principles of Programming Languages | 4 | - | 4 |
| | OPEN ELECTIVE | 4 | - | 4 |
| A50018 | Human Values and Professional Ethics | | | |
| A50017 | Intellectual Property Rights | | | |
| A50117 | Disaster Management | | | |
| A50518 | Software Engineering | 4 | - | 4 |
| A50514 | Compiler Design | 4 | - | 4 |
| A50510 | Operating Systems | 4 | - | 4 |
| A50515 | Computer Networks | 4 | - | 4 |
| A50589 | Operating Systems Lab | - | 3 | 2 |
| A50587 | Compiler Design Lab | - | 3 | 2 |
| | Total | 24 | 6 | 28 |

III YEAR II SEMESTER

| Code | Subject | L | T/P/D | C |
|--------|---|-----------|----------|-----------|
| A60521 | Distributed Systems | 4 | - | 4 |
| A60522 | Information Security | 4 | - | 4 |
| A60524 | Object Oriented Analysis and Design | 4 | - | 4 |
| A60525 | Software Testing Methodologies | 4 | - | 4 |
| A60010 | Managerial Economics and Financial Analysis | 4 | - | 4 |
| A60512 | Web Technologies | 4 | - | 4 |
| A60591 | Case Tools and Web Technologies Lab | - | 3 | 2 |
| A60086 | Advanced Communication Skills Lab | - | 3 | 2 |
| | Total | 24 | 6 | 28 |

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

L T/P/D C

4 - / - / - 4

(A50018) HUMAN VALUES AND PROFESSIONAL ETHICS

(Open Elective)

Objectives: This introductory course input is intended.

- a. To help the students appreciate the essential complementarity between 'VALUES' and 'SKILLS' to ensure sustained happiness and prosperity which are the core aspirations of all human beings.
- b. To facilitate the development of a Holistic perspective among students towards life, profession and happiness, based on a correct understanding of the Human reality and the rest of Existence. Such a holistic perspective forms the basis of Value based living in a natural way.
- c. To highlight plausible implications of such a Holistic understanding in terms of ethical human conduct, trustful and mutually satisfying human behaviour and mutually enriching interaction with Nature.

UNIT - I:

Course Introduction - Need, basic Guidelines, Content and Process for Value Education: Understanding the need, basic guidelines, content and process for Value Education. Self Exploration - what is it? - its content and process; 'Natural Acceptance' and Experiential Validation - as the mechanism for self exploration. Continuous Happiness and Prosperity - A look at basic Human Aspirations. Right understanding, Relationship and Physical Facilities - the basic requirements for fulfillment of aspirations of every human being with their correct priority. Understanding Happiness and Prosperity correctly - A critical appraisal of the current scenario. Method to fulfill the above human aspirations: understanding and living in harmony at various levels.

UNIT - II:

Understanding Harmony in the Human Being - Harmony in Myself! : Understanding human being as a co-existence of the sentient 'I' and the material 'Body'. Understanding the needs of Self ('I') and 'Body' - Sukh and Suvridha. Understanding the Body as an instrument of 'I' (I being the doer, seer and enjoyer). Understanding the harmony of I with the Body: Sanyam and Swasthya; correct appraisal of Physical needs, meaning of Prosperity in detail. Programs to ensure Sanyam and Swasthya.

UNIT - III:

Understanding Harmony in the Family and Society - Harmony in Human - Human Relationship: Understanding harmony in the Family the basic unit of human interaction. Understanding values in human - human relationship; meaning of Nyaya and program for its fulfillment to ensure Ubhay-tripti; **Trust (Vishwas) and Respect (Samman) as the foundational values of relationship.** Understanding the meaning of Vishwas; Difference between intention and competence. Understanding the meaning of Samman, Difference between respect and differentiation; the other salient values in relationship. Understanding the harmony in the society (society being an extension of family): Samadhan, Samridhi, Abhay, Sah-astiva as comprehensive Human Goals. Visualizing a universal harmonious order in society - Undivided Society (Akhand Samaj), Universal Order (Sarvabhaum Vyawastha) - from family to world family!

UNIT - IV:

Understanding Harmony in the nature and Existence - Whole existence as Co-existence: Understanding the harmony in the Nature. Interconnectedness and mutual fulfillment among the four orders of nature - recyclability and self-regulation in nature. Understanding Existence as Co-existence (Sah-astiva) of mutually interacting units in all-pervasive space. Holistic perception of harmony at all levels of existence.

UNIT - V:

Implications of the above Holistic Understanding of Harmony on Professional Ethics: Natural acceptance of human values, Definitiveness of Ethical Human Conduct, Basic for Humanistic Education, Humanistic Constitution and Humanistic Universal Order. Competence in professional ethics:

- a. Ability to utilize the professional competence for augmenting universal human order,
- b. Ability to identify the scope and characteristics of people-friendly and eco-friendly production systems,
- c. Ability to identify and develop appropriate technologies and management patterns for above production systems.

Case studies of typical holistic technologies, management models and production systems. Strategy for transition from the present state to Universal Human Order.

- a. At the level of individual: as socially and ecologically responsible engineers, technologists and managers
- b. At the level of society: as mutually enriching institutions and organizations.

TEXT BOOKS:

1. R. R. Gaur, R Sangal, G P Bagaria, 2009, A Foundation Course in Human Values and Professional Ethics.
2. Prof. K. V. Subba Raju, 2013, Success Secrets for Engineering Students, Smart Student Publications, 3rd Edition.

REFERENCE BOOKS:

1. Ivan Illich, 1974, Energy & Equity, The Trinity Press, Worcester, and HarperCollins, USA
2. E. F. Schumaner, 1973, Small is Beautiful: a study of economics as if people mattered. Blond & Briggs, Britain.
3. A Nagraj, 1998 Jeevan Vidya ek Parichay, Divya Path Sansthan, Amarkantak.
4. Sussan George, 1976, How the Other Half Dies, Penguin Press, Reprinted 1986, 1991.
5. P. L. Dhar, R. R. Gaur, 1990, Science and Humanism, Commonwealth Publishers.
6. A. N. Tripathy, 2003, Human Values, New Age International Publishers.
7. Subhas Palekar, 2000, How to practice Natural Farming, Pracheen(Vaidik) Krishi Tantra Shodh, Amravati.
8. Donella H. Meadows, Dennis L. Meadows, Jorgen Randers, William W. Behrens III, 1972, Limits to Growth - Club of Rome's report, Universe Books.
9. E G Seebauer & Robert L. Berry, 2000, Fundamentals of Ethics for Scientists & Engineers, Oxford University Press.
10. M Govindrajan, S Natrajan & V. S Senthil kumar, Engineering Ethics (including Humna Values), Eastern Economy Edition, Prentice Hall of India Ltd.

Relevant CDs, Movies, Documentaries & Other Literature:

1. value Education website, <http://www.uptu.ac.in>
2. Story of Stuff, <http://www.storyofstuff.com>
3. Al Gore, An Inconvenient Truth, Paramount Classics, USA
4. Charle Chaplin, Modern Times, United Artists, USA
5. IIT Delhi, Modern Technology - the Untold Story

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**B.TECH. CIVIL ENGINEERING
III YEAR COURSE STRUCTURE & SYLLABUS (R16)****Admitted From 2016-17 Admitted Batch****III YEAR I SEMESTER**

| S. No | Course Code | Course Title | L | T | P | Credits |
|-------|-------------|--|-----------|----------|----------|-----------|
| 1 | CE501PC | Concrete Technology | 4 | 0 | 0 | 4 |
| 2 | CE502PC | Design of Reinforced Concrete Structures | 4 | 1 | 0 | 4 |
| 3 | CE503PC | Water Resources Engineering | 4 | 0 | 0 | 4 |
| 4 | SM504MS | Fundamentals of Management | 3 | 0 | 0 | 3 |
| 5 | | Open Elective –I | 3 | 0 | 0 | 3 |
| 6 | CE505PC | Concrete Technology Lab | 0 | 0 | 3 | 2 |
| 7 | CE506PC | Geographical Information Systems Lab | 0 | 0 | 3 | 2 |
| 8 | CE507PC | Hydraulics and Hydraulic Machinery Lab | 0 | 0 | 3 | 2 |
| 9 | *MC500HS | Professional Ethics | 3 | 0 | 0 | 0 |
| | | Total Credits | 21 | 1 | 9 | 24 |

III YEAR II SEMESTER

| S. No | Course Code | Course Title | L | T | P | Credits |
|-------|-------------|---|-----------|----------|----------|-----------|
| 1 | CE601PC | Design of Steel Structures | 4 | 1 | 0 | 4 |
| 2 | CE602PC | Environmental Engineering | 4 | 0 | 0 | 4 |
| 3 | CE603PC | Soil Mechanics | 4 | 0 | 0 | 4 |
| 4 | | Open Elective-II | 3 | 0 | 0 | 3 |
| 5 | | Professional Elective-I | 3 | 0 | 0 | 3 |
| 6 | CE604PC | Soil Mechanics Lab | 0 | 0 | 3 | 2 |
| 7 | CE605PC | Computer Aided Design - II Lab | 0 | 0 | 3 | 2 |
| 8 | EN606HS | Advanced English Communication Skills Lab | 0 | 0 | 3 | 2 |
| | | Total Credits | 18 | 1 | 9 | 24 |

During Sumer Vacation between III and IV Years: Industry Oriented Mini Project*Professional Elective - I**

| | |
|---------|---|
| CE611PE | Air Pollution and Control. |
| CE612PE | Advanced Structural Analysis. |
| CE613PE | Ground Water Development and Management. |
| CE614PE | Earth and Rock fill Dams and Slope Stability. |

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**B.TECH. COMPUTER SCIENCE AND ENGINEERING
III YEAR COURSE STRUCTURE & SYLLABUS (R16)****Applicable From 2016-17 Admitted Batch****III YEAR I SEMESTER**

| S. No | Course Code | Course Title | L | T | P | Credits |
|-------|-------------|--|-----------|----------|----------|-----------|
| 1 | CS501PC | Design and Analysis of Algorithms | 4 | 0 | 0 | 4 |
| 2 | CS502PC | Data Communication and Computer Networks | 4 | 0 | 0 | 4 |
| 3 | CS503PC | Software Engineering | 4 | 0 | 0 | 4 |
| 4 | SM504MS | Fundamentals of Management | 3 | 0 | 0 | 3 |
| 5 | | Open Elective –I | 3 | 0 | 0 | 3 |
| 6 | CS505PC | Design and Analysis of Algorithms Lab | 0 | 0 | 3 | 2 |
| 7 | CS506PC | Computer Networks Lab | 0 | 0 | 3 | 2 |
| 8 | CS507PC | Software Engineering Lab | 0 | 0 | 3 | 2 |
| 9 | *MC500HS | Professional Ethics | 3 | 0 | 0 | 0 |
| | | Total Credits | 21 | 0 | 9 | 24 |

III YEAR II SEMESTER

| S. No | Course Code | Course Title | L | T | P | Credits |
|-------|-------------|---|-----------|----------|----------|-----------|
| 1 | CS601PC | Compiler Design | 4 | 0 | 0 | 4 |
| 2 | CS602PC | Web Technologies | 4 | 0 | 0 | 4 |
| 3 | CS603PC | Cryptography and Network Security | 4 | 0 | 0 | 4 |
| 4 | | Open Elective-II | 3 | 0 | 0 | 3 |
| 5 | | Professional Elective-I | 3 | 0 | 0 | 3 |
| 6 | CS604PC | Cryptography and Network Security Lab | 0 | 0 | 3 | 2 |
| 7 | CS605PC | Web Technologies Lab | 0 | 0 | 3 | 2 |
| 8 | EN606HS | Advanced English Communication Skills Lab | 0 | 0 | 3 | 2 |
| | | Total Credits | 18 | 0 | 9 | 24 |

During Summer Vacation between III and IV Years: Industry Oriented Mini Project

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**B.TECH. ELECTRONICS AND COMMUNICATION ENGINEERING
III YEAR COURSE STRUCTURE & SYLLABUS (R16)****Applicable From 2016-17 Admitted Batch****III YEAR I SEMESTER**

| S. No | Course Code | Course Title | L | T | P | Credits |
|-------|-------------|---|-----------|----------|----------|-----------|
| 1 | EC501PC | Electromagnetic Theory and Transmission Lines | 4 | 1 | 0 | 4 |
| 2 | EC502PC | Linear and Digital IC Applications | 4 | 0 | 0 | 4 |
| 3 | EC503PC | Digital Communications | 4 | 1 | 0 | 4 |
| 4 | SM504MS | Fundamentals of Management | 3 | 0 | 0 | 3 |
| 5 | | Open Elective – I | 3 | 0 | 0 | 3 |
| 6 | EC505PC | Linear IC Applications Lab | 0 | 0 | 3 | 2 |
| 7 | EC506PC | Digital IC Applications Lab | 0 | 0 | 3 | 2 |
| 8 | EC507PC | Digital Communications Lab | 0 | 0 | 3 | 2 |
| 9 | *MC500HS | Professional Ethics | 3 | 0 | 0 | 0 |
| | | Total Credits | 21 | 2 | 9 | 24 |

III YEAR II SEMESTER

| S. No | Course Code | Course Title | L | T | P | Credits |
|-------|-------------|---|-----------|----------|----------|-----------|
| 1 | | Open Elective-II | 3 | 0 | 0 | 3 |
| 2 | | Professional Elective-I | 3 | 0 | 0 | 3 |
| 3 | EC601PC | Antennas and Wave Propagation | 4 | 0 | 0 | 4 |
| 4 | EC602PC | Microprocessors and Microcontrollers | 4 | 0 | 0 | 4 |
| 5 | EC603PC | Digital Signal Processing | 4 | 0 | 0 | 4 |
| 6 | EC604PC | Digital Signal Processing Lab | 0 | 0 | 3 | 2 |
| 7 | EC605PC | Microprocessors and Microcontrollers Lab | 0 | 0 | 3 | 2 |
| 8 | EN606HS | Advanced English Communication Skills Lab | 0 | 0 | 3 | 2 |
| | | Total Credits | 18 | 0 | 9 | 24 |

During Summer Vacation between III and IV Years: Industry Oriented Mini Project

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

**B.TECH. INFORMATION TECHNOLOGY
III YEAR COURSE STRUCTURE & SYLLABUS (R16)**

Applicable From 2016-17 Admitted Batch

III YEAR I SEMESTER

| S. No | Course Code | Course Title | L | T | P | Credits |
|--------------|--------------------|--|-----------|----------|----------|----------------|
| 1 | CS501PC | Design and Analysis of Algorithms | 4 | 0 | 0 | 4 |
| 2 | CS502PC | Data Communication and Computer Networks | 4 | 0 | 0 | 4 |
| 3 | CS503PC | Software Engineering | 4 | 0 | 0 | 4 |
| 4 | SM504MS | Fundamentals of Management | 3 | 0 | 0 | 3 |
| 5 | | Open Elective –I | 3 | 0 | 0 | 3 |
| 6 | CS505PC | Design and Analysis of Algorithms Lab | 0 | 0 | 3 | 2 |
| 7 | CS506PC | Computer Networks Lab | 0 | 0 | 3 | 2 |
| 8 | CS507PC | Software Engineering Lab | 0 | 0 | 3 | 2 |
| 9 | *MC500HS | Professional Ethics | 3 | 0 | 0 | 0 |
| | | Total Credits | 21 | 0 | 9 | 24 |

III YEAR II SEMESTER

| S. No | Course Code | Course Title | L | T | P | Credits |
|--------------|--------------------|---|-----------|----------|----------|----------------|
| 1 | CS601PC | Compiler Design | 4 | 0 | 0 | 4 |
| 2 | CS602PC | Web Technologies | 4 | 0 | 0 | 4 |
| 3 | CS603PC | Cryptography and Network Security | 4 | 0 | 0 | 4 |
| 4 | | Open Elective-II | 3 | 0 | 0 | 3 |
| 5 | | Professional Elective-I | 3 | 0 | 0 | 3 |
| 6 | CS604PC | Cryptography and Network Security Lab | 0 | 0 | 3 | 2 |
| 7 | CS605PC | Web Technologies Lab | 0 | 0 | 3 | 2 |
| 8 | EN606HS | Advanced English Communication Skills Lab | 0 | 0 | 3 | 2 |
| | | Total Credits | 18 | 0 | 9 | 24 |

During Summer Vacation between III and IV Years: Industry Oriented Mini Project

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**B.TECH. MECHANICAL ENGINEERING
III YEAR COURSE STRUCTURE & SYLLABUS (R16)****Applicable From 2016-17 Admitted Batch****III YEAR I SEMESTER**

| S. No. | Course Code | Course Title | L | T | P | Credits |
|--------|-------------|-------------------------------|-----------|----------|----------|-----------|
| 1 | ME501PC | Design of Machine Members - I | 4 | 1 | 0 | 4 |
| 2 | ME502PC | Thermal Engineering-I | 4 | 1 | 0 | 4 |
| 3 | ME503PC | Metrology and Machine Tools | 4 | 1 | 0 | 4 |
| 4 | SM504MS | Fundamentals of Management | 3 | 0 | 0 | 3 |
| 5 | | Open Elective – I | 3 | 0 | 0 | 3 |
| 6 | ME505PC | Thermal Engineering Lab | 0 | 0 | 3 | 2 |
| 7 | ME506PC | Machine Tools Lab | 0 | 0 | 3 | 2 |
| 8 | ME507PC | Engineering Metrology Lab | 0 | 0 | 3 | 2 |
| 9 | *MC500HS | Professional Ethics | 3 | 0 | 0 | 0 |
| | | Total Credits | 21 | 3 | 9 | 24 |

III YEAR II SEMESTER

| S. No. | Course Code | Course Title | L | T | P | Credits |
|--------|-------------|---|-----------|----------|----------|-----------|
| 1 | ME601PC | Thermal Engineering –II | 4 | 1 | 0 | 4 |
| 2 | ME602PC | Design of Machine Members-II | 4 | 1 | 0 | 4 |
| 3 | ME603PC | Heat Transfer | 4 | 1 | 0 | 4 |
| 4 | | Open Elective - II | 3 | 0 | 0 | 3 |
| 5 | | Professional Elective - I | 3 | 0 | 0 | 3 |
| 6 | ME604PC | Heat Transfer Lab | 0 | 0 | 3 | 2 |
| 7 | ME605PC | CADD and MATLAB | 0 | 0 | 3 | 2 |
| 8 | EN606HS | Advanced English Communication Skills Lab | 0 | 0 | 3 | 2 |
| | | Total Credits | 18 | 3 | 9 | 24 |

During Summer Vacation between III and IV Years: Industry Oriented Mini Project

PROFESSIONAL ETHICS

B.Tech. III Year I Sem.
Course Code: MC500HS

| | | | |
|----------|----------|----------|----------|
| L | T | P | C |
| 3 | 0 | 0 | 0 |

Course Objective: To enable the students to imbibe and internalize the Values and Ethical Behaviour in the personal and Professional lives.

Course Outcome: The students will understand the importance of Values and Ethics in their personal lives and professional careers. The students will learn the rights and responsibilities as an employee, team member and a global citizen.

UNIT - I

Introduction to Professional Ethics: Basic Concepts, Governing Ethics, Personal & Professional Ethics, Ethical Dilemmas, Life Skills, Emotional Intelligence, Thoughts of Ethics, Value Education, Dimensions of Ethics, Profession and professionalism, Professional Associations, Professional Risks, Professional Accountabilities, Professional Success, Ethics and Profession.

UNIT - II

Basic Theories: Basic Ethical Principles, Moral Developments, Deontology, Utilitarianism, Virtue Theory, Rights Theory, Casuist Theory, Moral Absolution, Moral Rationalism, Moral Pluralism, Ethical Egoism, Feminist Consequentialism, Moral Issues, Moral Dilemmas, Moral Autonomy.

UNIT - III

Professional Practices in Engineering: Professions and Norms of Professional Conduct, Norms of Professional Conduct vs. Profession; Responsibilities, Obligations and Moral Values in Professional Ethics, Professional codes of ethics, the limits of predictability and responsibilities of the engineering profession.

Central Responsibilities of Engineers - The Centrality of Responsibilities of Professional Ethics; lessons from 1979 American Airlines DC-10 Crash and Kansas City Hyatt Regency Walk away Collapse.

UNIT - IV

Work Place Rights & Responsibilities, Ethics in changing domains of Research, Engineers and Managers; Organizational Complaint Procedure, difference of Professional Judgment within the Nuclear Regulatory Commission (NRC), the Hanford Nuclear Reservation.

Ethics in changing domains of research - The US government wide definition of research misconduct, research misconduct distinguished from mistakes and errors, recent history of attention to research misconduct, the emerging emphasis on understanding and fostering responsible conduct, responsible authorship, reviewing & editing.

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
MASTER OF BUSINESS ADMINISTRATION (MBA) R17
Effective from Academic Year 2017- 18 admitted batch

COURSE STRUCTURE AND SYLLABUS

I Semester

| Course Code | Course Title | Int. marks | Ext. marks | L | T | P | C |
|----------------------------|---|------------|------------|-----------|---|----------|-----------|
| 17MBA01 | Management and Organisational Behaviour | 25 | 75 | 3 | 1 | 0 | 4 |
| 17MBA02 | Business Economics | 25 | 75 | 3 | 1 | 0 | 4 |
| 17MBA03 | Financial Accounting & Analysis | 25 | 75 | 3 | 1 | 0 | 4 |
| 17MBA04 | Business Statistics | 25 | 75 | 3 | 1 | 0 | 4 |
| 17MBA05 | Business Law and Ethics | 25 | 75 | 3 | 1 | 0 | 4 |
| OPEN ELECTIVE-I 17MBA06 | 6A Business Research Methodology 6B Project Management 6C Technology Management 6D Rural Marketing | 25 | 75 | 3 | 0 | 0 | 3 |
| 17MBA07 | Business Communication - Lab | 100 | - | 0 | 0 | 3 | 2 |
| TOTAL | | 250 | 450 | 18 | | 5 | 25 |

II Semester

| Course Code | Course Title | Intl marks | Ext marks | L | T | P | C |
|-----------------------------|---|------------|------------|-----------|----------|----------|-----------|
| 17MBA08 | Human Resource Management | 25 | 75 | 3 | 1 | 0 | 4 |
| 17MBA09 | Marketing Management | 25 | 75 | 3 | 1 | 0 | 4 |
| 17MBA10 | Financial Management | 25 | 75 | 3 | 1 | 0 | 4 |
| 17MBA11 | Quantitative Analysis for Business Decisions | 25 | 75 | 3 | 1 | 0 | 4 |
| 17MBA12 | Entrepreneurship | 25 | 75 | 3 | 1 | 0 | 4 |
| OPEN ELECTIVE-II 17MBA13 | 13A Total Quality Management 13B Corporate Governance 13C International Business 13D Supply Chain Management | 25 | 75 | 3 | 0 | 0 | 3 |
| 17MBA14 | Summer Internship | 100 | - | 0 | 0 | 3 | 2 |
| TOTAL | | 250 | 450 | 15 | 7 | 3 | 25 |

III Semester

| Course Code | Course Title | Intl marks | Ext marks | L | T | P | C |
|-------------|------------------------------------|------------|-----------|---|---|---|---|
| 17MBA15 | Production & Operations Management | 25 | 75 | 3 | 1 | 0 | 4 |
| 17MBA16 | Management Information Systems | 25 | 75 | 3 | 1 | 0 | 4 |
| 17MBA17 | Data Analytics | 25 | 75 | 3 | 1 | 0 | 4 |

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
MBA SEMESTER - I**

17MBA05: BUSINESS LAW AND ETHICS

Course Objective: To understand the Legal and Regulatory Framework for doing business in India.

Course Outcome: Students will be able to understand a) Business Laws related to incorporating a company b) Importance of Ethics in Business c) Cyber Crime and Legal Aspects.

UNIT – I:

Companies Act, 2013: Steps and procedure for incorporation of the company, Appointment of Directors, Powers, duties, & liabilities of Directors, Company Meetings, Resolutions, Winding-up of a Company.

UNIT – II:

Law of Contract: Nature of Contract and Essential elements of valid contract, Offer and Acceptance, Consideration, Capacity to contract and Free Consent, Legality of Object. Unlawful and illegal agreements, Contingent Contracts, Performance and discharge of Contracts, Remedies for breach of contract. Contracts-II: Indemnity and guarantee, Contract of Agency, Sale of goods Act -1930: General Principles, Conditions & Warranties, Performance of Contract of Sale.

UNIT – III:

Negotiable Instruments Act - 1881: Negotiable Instruments- Promissory Note, Bills of Exchange, & Cheque, and their definitions and characteristics, Types of endorsements, Holder- Holder in due course, Discharge of Parties. Introduction to Goods and Services Tax (GST).

UNIT – IV:

Business Ethics: The Changing Environment: Business Ethics-why does it matter? ; Levels of Business Ethics-Five Myths about Business Ethics-can Business Ethics be taught and trained? stages of Moral development Kohlberg's study-carol Gilligan's Theory-Principles of Ethics.

UNIT – V:

Cyber Crime: The Legal Landscape - Need for cyber laws in the Indian context - The Indian IT Act- challenges to Indian Law and cyber crime scenario in Indian – issues and Challenges in Cyber Crime.

TEXTBOOKS:

1. Ravinder Kumar, Legal Aspects of Business, 4e, Cengage Learning, 2016.
2. P.P.S.Gogna, Company Law, S.Chand, 2016.
3. RSN Pillai, Bagavathi, Legal Aspects of Business, S.Chand, 2016.
4. Akhileshwar Pathak, Legal Aspects of Business, Tata McGraw Hill, 3e, 2011.
5. Nina Godbole & Sunit Belapure, Cyber Security, Wiley India, 2012.