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**Department of Computer Science and Engineering**

**AY: 2017-18** **Date: 11.04.2018**

**Action Taken Report -Faculty Feedback**

| S.No | Analysis | Action Taken Report |
|---|---|---|
| 1. | Student knowledge can be enriched by making them learn another database like MongoDB | One credit on applications development using U15CSIN09 - Applications using MongoDB was done |
| 2. | Java concepts can be covered in depth | Students got insight into the advanced Java concepts by attending the one credit course U14CSIN07- Object Oriented Programming in Java |
| 3. | Experience in application development using various cloud services can be given to student | Exposure to SAAS and IAAS was given through the additional credit courses: U14CSIN08/ U15CSIN04- Enterprise Application Design and Development on Cloud SAAS Platform and U15CSIN06- Application, Design and Development on IAAS Cloud. |

**Prepared By**

**(Feedback/BoS Coordinator)**

(Dr. D. Chandrakala)

**Approved By**

**(Signature of Bos Chairman)**

(Dr. J. Cynthia)
Professor & Head
Department of
Computer Science and Engineering
Kumaraguru College of Technology
COIMBATORE-641 006, INDIA

Proof for AFR PT. 1.

**U15CSIN09** **APPLICATIONS USING MONGO DB**

| L | T | P | J | C |
|---|---|---|---|---|
| 1 | 0 | 0 | 2 | 1 |

**Course Outcomes:**

**After successful completion of this course, the students should be able to**

**CO1:** Understand Mongo as a data store.

**CO2:** Querying database using Mongo's JSON-based query language.

**Pre-requisites :** U15CST402 Database Management Systems

**CO/PO Mapping**

(S/M/W indicates strength of correlation) S-Strong, M-Medium, W-Weak

| COs | Programme Outcomes(POs) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
| CO1 | S | S | | M | M | | | | W | | | W |
| CO2 | S | S | | M | M | | | | W | | | W |

**Course Assessment Methods:**

| Direct |
|---|
| 1. Objective type Assessment Test (Theory component) |
| 2. Project work (Lab Component) |

**INTRODUCTION TO RDBMS** **5 Hours**

Basic Concepts of RDBMS –Terminologies-Difference b/w RDBMS and MongoDB-JSON Format-Sample Document-Advantages-Environment Setup-Design Considerations

**QUERY OPERATIONS5 Hours**

Data Types-Create and Drop Collection-Document and its Operations-Insert, Update, Delete and Query Documents-Projection

**SORTING AND INDEXING5 Hours**

Sorting and Limiting Records-Indexing-Aggregation-Backupand Restore the database-Replication-Sharding-Concept of Map and Reduce-Searching for the Text-Using Regular Expression

**Theory: 15** **Tutorial: 0** **Practical: 15** **Total: 30 Hours**

References:


1. Kristina Chodorow,"MongoDB: The Definitive Guide", Second Edition,2010
2. Karl Seguin,"The Little MongoDB Book" ,Second Edition,2010


26/03/18

Proof for ATR 2

**U14CSIN07 OBJECT ORIENTED PROGRAMMING IN JAVA**

| L | T | P | C |
|---|---|---|---|
| 1 | 0 | 0 | 1 |

**Course Outcomes**

**After successful completion of this course, the students should be able to**

| | |
|---|---|
| CO1 | Explain the basic concepts of Object oriented programming. |
| CO2 | Explain how Java provides support for principles of object oriented-programming, specifically abstraction, encapsulation, inheritance, and polymorphism. |
| CO3 | Explain the concepts of exception handling, Packages and Inheritance. |
| CO4 | Explain the concept of synchronization and Multithreading. |
| CO5 | Build applications that include GUIs and event driven programming. |

**Pre-requisites :Nil**

**CO/PO Mapping**

(S/M/W indicates strength of correlation) S-Strong, M-Medium, W-Weak

| COs | Programme Outcomes(POs) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
| CO1 | S | S | | | M | | | | M | M | | M |
| CO2 | S | S | | | M | | | | M | M | | M |
| CO3 | S | M | | | M | | | | M | M | | M |
| CO4 | S | M | | | M | | | | M | M | | M |
| CO5 | S | M | | | M | | | | M | M | | M |

**Course Assessment Methods**

| **Direct** |
|---|
| Written test which includes objective type questions and programming questions |

**INTRODUCTION TO OBJECT ORIENTED CONCEPTS** **3 Hours**

Introduction to Object Oriented Concepts: A Review of structures, Procedure–Oriented Programming system, Object Oriented Programming System, Comparison of Object Oriented Language with C, Console I/O, variables and reference variables, Function Prototyping, Function Overloading. Class and Objects: Introduction, member functions and data, objects and functions, objects and arrays, Namespaces, Nested classes, Constructors, Destructors

**INTRODUCTION TO JAVA** **3 Hours**

Introduction to Java: Java's magic: the Byte code; Java Development Kit (JDK); the Java Buzzwords, Data types, variables and arrays, Operators, Control Statements.

**CLASSES, INHERITANCE, EXCEPTIONS, PACKAGES AND INTERFACES 3 Hours**

Classes, Inheritance, Exceptions, Packages and Interfaces: Classes: Classes fundamentals; Declaring objects; Constructors, this keyword, garbage collection. Inheritance: inheritance basics, using super,

creating multi level hierarchy, method overriding. Exception handling: Exception handling in Java. Packages, Access Protection, Importing Packages, Interfaces.

**MULTI THREADED PROGRAMMING** **3 Hours**

Multi Threaded Programming, Multi Threaded Programming: Thread model, How to make the classes threadable, Extending threads, Implementing runnable, Synchronization, Changing state of the thread, Bounded buffer problems, readwrite problem, producer consumer problems.

**THE APPLET CLASS** **3 Hours**

Applet class – Event Handling: Event classes - Event Listener Interfaces - Adapter classes - AWT package: Windows, Graphics and Text – Layout Managers

| Theory: 15 | Tutorial: 0 | Practical: 0 | Total: 15 Hours |
|---|---|---|---|

Proof for ATR-3

| U14CSIN09 / U15CSIN06 | APPLICATION, DESIGN AND DEVELOPMENT ON IAAS CLOUD | L | T | P | C |
|---|---|---|---|---|---|
| | | 0 | 0 | 2 | 1 |

**Course Outcomes**

**After successful completion of this course, the students should be able to**

| | |
|---|---|
| CO1 | Explain the services and Architecture of Openstack Cloud |
| CO2 | Setup a OpenStack Private cloud |

**Pre-requisites :Nil**

**CO/PO Mapping**

(S/M/W indicates strength of correlation) S-Strong, M-Medium, W-Weak

| COs | Programme Outcomes(POs) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
| CO1 | S | S | | M | | | | | M | M | | M |
| CO2 | S | S | | M | | | | | M | M | | M |

**Course Assessment Methods**

**Direct**

1. Objective type Assessment Test (Theory component)
2. Application Development and Deployment (Lab Component)

**INTRODUCTION TO OPENSTACK AND SETTING UP PRIVATE CLOUD** **8 Hours**

Architecture - Controller node - Networking - Compute node - Networking - Virtualbox Hypervisor- Running Vms - Access the controller node and compute node - image service – glance-compute service - nova - Compute core - Networking for Vms - Console interface - Image management - Command-line clients and other interfaces- Networking service - Neutron - masquerade on virtualbox host- Block storage service - Cinder - Orchestration service - Heat -Instance flavour

**LAUNCH A VM INSTANCE AND TESTING** **7 Hours**

Controller node - Generate a key pair - Security group - Create volume - Launch a cirros instance - attach the volume - Connect to the new instance - Provider network gateway - Virtualbox host public interface - IP address on the public internet - Review the instance - Controller node - Configure the volume in the new instance-Cleaning the nodes -Launch new instance - confirm Vm instance

**Theory: 2 Tutorial: 0 Practical: 14 Total: 15 Hours**

Proof for ATR3

| U14CSIN08 / U15CSIN04 | ENTERPRISE APPLICATION DESIGN & DEVELOPMENT ON CLOUD SAAS PLATFORM | L | T | P | C |
|---|---|---|---|---|---|
| | | 0 | 0 | 2 | 1 |

**Course Outcomes**

**After successful completion of this course, the students should be able to**

| | |
|---|---|
| CO1 | Design and manage the data model for an Enterprise Application on SAAS Platform |
| CO2 | Configure the application security |

**Pre-requisites :Nil**

**CO/PO Mapping**

(S/M/W indicates strength of correlation) S-Strong, M-Medium, W-Weak

| COs | Programme Outcomes(POs) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
| CO1 | S | S | | M | | | | | M | M | | M |
| CO2 | S | S | | M | | | | | M | M | | M |

**Course Assessment Methods**

| Direct |
|---|
| 1. Objective type Assessment Test (Theory component)<br>2. Application Development and Deployment (Lab Component) |

**Building Data Model and Crafting User Interface** **9 Hours**

Introduction to Cloud SAAS PAAS IAAS - Trends & Challenges - Opportunities - Sample Application Requirement Gathering -Capabilities of Core Enterprise CRM Objects - Boundaries of Declarative Customizations - Determining an Appropriate Data Model - Relationship Types and Impact on Record Access, User Interface, and Reporting - Considerations for Changing Field Types - Considerations of the Schema Builder - Considerations for Importing and Exporting Data - Use Cases of External Objects-Constructing Business Logic -Maintaining Data Security

**Automating Business Processes and Deploying the Application** **6 Hours**

Lightning Process Builder - Workflows and Approvals - Automating Business Processes- Designing Advanced User Interface Components-Application Lifecycle - Sandboxes - Change Sets - Unmanaged and Managed Packages - Determining an Appropriate Deployment Plan

**Theory: 2** **Tutorial: 0** **Practical: 14** **Total: 15 Hours**

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**Department of Aeronautical Engineering**

**AY: 2017-18** **Date: 11.04.2018**

**Action taken report -Teacher Feedback**

| S.No | Analysis | Action taken report |
|---|---|---|
| 1. | Engineering Clinics should be relevant to Aeronautical Engineering domains | Engineering Clinics is framed relevant to Aeronautical Engineering domains |
| 2. | Rocket Propulsion subject can be introduced as core subject | Rocket Propulsion course is offered as core subject |
| 3. | 'Flight Instrumentation and Control' course can be introduced as core subject | 'Flight Instrumentation and Control' course is offered as core subject in the name of Aircraft Systems and Instruments |
| 4. | 'Mechanics of Solids', 'Aircraft Structures-I', 'Aircraft Structures-II' courses can be combined and to have two courses in aircraft structures. | Will be considered in the next revision of Curriculum & Syllabi as suggested by member |
| 5. | Flight Dynamics can be made as two separate courses (Aircraft Performance, Stability and Control) | |
| 6. | Three credits can be removed from eRIDE courses from total of 5 credits, and instead of that one core course can be added. | |
| 7. | 'Composite Materials and Structures' has to be added as core course. | |
| 8. | Rocket Propulsion course can be studied after High speed Aerodynamics. | Rocket Propulsion course is offered after High speed Aerodynamics |

Prepared By,

BoS Coordinator

Approved By,

BoS Chairman

**Proof for Action Taken: 1 Engineering Clinics is framed relevant to Aeronautical Engineering domains**

| U18INI5600 | ENGINEERING CLINIC 5 | L | T | P | J | C |
|---|---|---|---|---|---|---|
| | | 0 | 0 | 4 | 2 | 3 |

Engineering Clinic 5 offer a systematic and structured process of problem validation and ideation to develop a solution through computational approaches. It is aimed primarily to pursue technology-powered innovation to solve real-time problem. With the motto "TOOL FAMILARIZATION", students gaining the hands-on training / computational software course to experience the technically feasible solutions that are most likely to become permanently deployed by the target customer.

| **Course** | **Engineering Clinic 5** | | |
|---|---|---|---|
| **Learning Modules** | | **Module Heads** | **Module Hours** |
| | I | Numerical Methods in Computational Tools | 15 |
| | II | Incompressible flow analysis | 15 |
| | III | Acoustic analysis | 15 |
| | IV | Advanced Computational analysis | 15 |
| | **Total Hours** | | **60** |
| **Pre-Requisites** | U18AET5003 - Computational Fluid Dynamics | | |

| **Course Outcomes** | Upon the successful completion of the course, the students will be able to: |
|---|---|
| CO1 | Understand the computational methods involved in the numerical tools. |
| CO2 | Use tools to compute the incompressible, acoustic and compressible flow analysis |
| CO3 | Apply numerical tools to solve industrial problems such as roto-dynamic components, advanced coupling approaches. |
| CO4 | Solve real-time challenges of aerospace and non-aerospace applications. |

| **Syllabus** | | |
|---|---|---|
| **Module – I** | **Numerical Methods in Computational Tools** | 15 Hours |
| Grid generation schemes and its formation techniques – Explanation of Reynolds Averaged Navier Stokes Equation – Turbulence Models and its Specification Methods - Numerical Problems of Finite Volume Methods - Flux splitting schemes - Pressure correction solvers - SIMPLE – PISO. | | |
| **Module – II** | **Incompressible flow analysis** | 15 Hours |
| Incompressible flow simulations over a Wing - Incompressible flow simulations over the Propellers - Incompressible flow simulations over a Hydro-Propellers - Incompressible flow simulations over the various Wind Turbines such as Darrieus Vertical Axis Wind Turbine, Savonius Wind Turbine, and H-Darrieus Vertical Axis Wind Turbine | | |
| **Module – III** | **Acoustic analysis** | 15 Hours |

| | | |
|---|---|---|
| Acoustic flow simulations over the rotors – Aerodynamic and Hydrodynamic Environments - Acoustic flow simulations inside the pipe - Acoustic flow simulations over the automotive components - Acoustic flow simulations on drones and its components | | |
| **Module – IV** | **Advanced Computational analysis** | 15 Hours |
| Compressible flow simulations inside the Convergent – Divergent duct – Transient flow simulations on various drone rotors for various peak working RPMs – Advanced simulations using Fluid Structure Interaction coupling approach - Advanced simulations using Fluid Thermal Interaction coupling approach | | |

**Reading Materials**

1. https://www.youtube.com/c/AdvancedEngineeringSolutions/videos
2. https://www.edx.org/course/a-hands-on-introduction-to-engineering-simulations
3. John Matsson, An Introduction to ANSYS Fluent 2020, SDC Publications; 1st edition (26 September 2020), ISBN-10: 1630573965, ISBN-13 : 978-1630573966

| **Evaluation Criteria /Methodology** | | | | |
|---|---|---|---|---|
| Hands – On Test<br>30 marks | Review – I<br>20 marks | Review – II<br>20 marks | Report<br>20 marks | Viva/MCQ<br>10 marks |

| **Learning Outcomes & Assessment Mapping** | | |
|---|---|---|
| Course Outcomes (COs) | | Assessment Mapped |
| CO1 | Understand the computational methods involved in the numerical tools. | Viva/MCQ |
| CO2 | Use tools to compute the incompressible, acoustic and compressible flow analysis | Hands – On Test and Reviews |
| CO3 | Apply numerical tools to solve industrial problems such as roto-dynamic components, advanced coupling approaches. | Hands – On Test and Reviews |
| CO4 | Solve real-time challenges of aerospace and non-aerospace applications. | Report Preparation and Submission |

**List of Projects**

1) Conceptual Design and Analysis of Energy Enhanced Darrieus Vertical Axis Wind Turbine
2) Conceptual Design and Analysis of Energy Enhanced Savonius Wind Turbine
3) Conceptual Design and Analysis of Energy Production based Fuselage for Rotary Wing UAV
4) Conceptual Design of Hybrid Multi-Rotor UAV for Weapon Detection
5) Edge modifications based Thrust enhancement Investigations on Hydro Rotor
6) Conceptual Design and Analysis of Energy Enhanced H-Darrieus Vertical Axis Wind Turbine

7) Dynamic Thrust estimations of Fixed Wing Unmanned Amphibious Vehicle by using CFD-MRF Approach
8) Design and Computational Analysis of Multi-Rotor UAV for Fuel delivery applications
9) Computational heat transfer analysis over the Flight Control Board of UAV
10) Multi-disciplinary investigations on Co-Axial Propeller
11) Conceptual Design and Analysis of Energy Production based Wing for Ornithopter
12) Conceptual Design and Analysis of Fixed Wing UAV adopted with Empennage based Energy Extractor
13) Design and advanced computational analyses of Unmanned Airship proposed for TITAN Planet.
14) Conceptual Design and Analysis of Micro Aerial Vehicle for Detections of Humans
15) Dynamic Thrust estimations of Multi-Rotor UAV by using CFD-MRF Approach

**Proof for Action Taken:**

**2 Rocket Propulsion course is offered as core subject**

**3 'Flight Instrumentation and Control' course is offered as core subject in the name of Aircraft Systems and Instruments**

**8 Rocket Propulsion course is offered after High speed Aerodynamics**

| Semester V | | | | | | | | | | Pre-requisite |
|---|---|---|---|---|---|---|---|---|---|---|
| **S.No** | **Course code** | **Course Title** | **Course Mode** | **CT** | **L** | **T** | **P** | **J** | **C** | |
| 1 | U17AET5101 | High speed Aerodynamics | Theory | PC | 2 | 1 | 0 | 0 | 3 | U17AEI4201 |
| 2 | U17AEI5202 | Aircraft Structures II | Embedded-Theory & Lab | PC | 2 | 0 | 2 | 0 | 3 | U17AET4003 |
| 3 | U17AET5003 | Computational Fluid Dynamics | Theory | PC | 3 | 0 | 0 | 0 | 3 | U17AEI4201 |
| 4 | U17AEI5204 | Aircraft Systems and Instruments | Embedded-Theory & Lab | PC | 2 | 0 | 2 | 0 | 3 | ------- |
| 5 | U17AEI5205 | Aircraft Propulsion | Embedded-Theory & Lab | PC | 2 | 0 | 2 | 0 | 3 | U17AEI3202 |
| 6 | OE I | Open Elective I | Theory | OE | 3 | 0 | 0 | 0 | 3 | ------- |
| 7 | U17INI5600 | Engineering Clinic 3 | Embedded-Practical & Project | ES | 0 | 0 | 4 | 2 | 3 | ------- |
| | | | | | | | | **Total Credits** | **21** | |
| | | | | | | | | **Total Contact Hours/week** | **27** | |

| Semester VI | | | | | | | | | | Pre-requisite |
|---|---|---|---|---|---|---|---|---|---|---|
| **S.No** | **Course code** | **Course Title** | **Course Mode** | **CT** | **L** | **T** | **P** | **J** | **C** | |
| 1 | U17AET6001 | Flight Dynamics | Theory | PC | 3 | 0 | 0 | 0 | 3 | U17AEI4201 |
| 2 | U17AET6002 | Finite Element Method | Theory | PC | 3 | 0 | 0 | 0 | 3 | U17AET4003 |
| 3 | U17AET6003 | Vibrations and Aeroelasticity | Theory | PC | 3 | 0 | 0 | 0 | 3 | U17AEI5202 |
| 4 | U17AET6104 | Rocket Propulsion | Theory | PC | 2 | 1 | 0 | 0 | 3 | U17AEI5205 |
| 5 | OE II | Open Elective II | Theory | OE | 3 | 0 | 0 | 0 | 3 | ------- |
| 6 | U17AEE00-- | Professional Elective I | Theory | PE | 3 | 0 | 0 | 0 | 3 | ------- |
| 7 | U17AEP6505 | Design and Simulation Laboratory | Lab | PC | 0 | 0 | 2 | 0 | 1 | U17AET5003 |
| 8 | U17INI6600 | Engineering Clinic 4 | Embedded-Practical & Project | ES | 0 | 0 | 4 | 2 | 3 | ------- |
| | | | | | | | | **Total Credits** | **22** | |
| | | | | | | | | **Total Contact Hours/week** | **26** | |

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# DEPARTMENT OF BIOTECHNOLOGY

Action Taken Report -"Faculty Feedback"
Academic Year 2017-2018

Date: 11-Apr 2018

| S.No | Suggestions | Action Taken |
|---|---|---|
| 1. | Students should aim for external funding and other external agencies | Students are encouraged to apply for external funding like TNSCST etc |
| 2. | Students should involve in international internship | Students have undertaken internship in USA, Egypt, Malaysia |

Prepared by
BOS Coordinator

Approved by
Chairman BOS

Proof: Student attending Internship abroad

BINGHAMTON UNIVERSITY | THOMAS J. WATSON SCHOOL OF ENGINEERING AND APPLIED SCIENCE

*presents to*

# Ms. Devadharshini Eswaran

*this*

## *Certificate of Attendance*

for participating in the 2019 Summer Program

Monday, July 15, 2019 to Tuesday, July 23, 2019

Krishnaswami Srihari, Ph.D.
Dean and Distinguished Professor
Thomas J. Watson School of Engineering and Applied Science

BINGHAMTON
UNIVERSITY
STATE UNIVERSITY OF NEW YORK

**Proof: Students attending Internship abroad**

Thomas J. Watson School of Engineering and Applied Science

**Office of the Dean**

PO Box 6000
Binghamton, New York 13902-6000
607-777-2871, Fax: 607-777-6256

May 13, 2019

Consul General
Visa Section
US Consulate
Chennai, India

Dear Consular Officer:

We are delighted to invite a delegation of eleven (11) from Kumaraguru College of Technology (KCT) to visit the Binghamton University campus **Monday, July 15th to Friday, July 26th.** During the visit, we invite the students and faculty to attend seminars and workshops, tour the campus and research facilities, visit local industry, participate in local cultural events and visit area museums. This invitation is extended to the following from KCT.

| | First Name | Last Name | Passport Number | Passport Expiration Date | Date of Birth | Gender |
|---|---|---|---|---|---|---|
| 1 | Janamitra | Arjun | R3509641 | 8/8/2027 | 6/3/1999 | F |
| 2 | Jenifer Gabriella | Bastin | S4989934 | 7/30/2028 | 3/23/1999 | F |
| 3 | Keerthana | Devaraj | R4426793 | 9/20/2027 | 11/25/1998 | F |
| 4 | Devadharshini | Eswaran | S0357809 | 4/16/2028 | 9/15/1999 | F |
| 5 | Ragavendran | Isaiselvan | N7470091 | 3/23/2026 | 4/13/1997 | M |
| 6 | Kavin | Authurampalayam Ravi | R1752212 | 6/14/2027 | 2/24/1999 | M |
| 7 | Nithish | Muthu Gounder Marappan | S7596926 | 10/3/2028 | 2/26/2001 | M |
| 8 | Ruskin Charles Immanuel | Rajan Charles | R0977441 | 5/12/2027 | 1/23/1998 | M |
| 9 | Balaji | Raveendra Pandian | P5810905 | 1/3/2027 | 8/20/1999 | M |
| 10 | Devadharshini | Ravi | T0757158 | 1/13/2029 | 5/23/1999 | F |
| 11 | Siddharth Krishna | Senthilkumar | P2685921 | 11/20/2026 | 3/14/2000 | M |

We look forward to their visit. Please do not hesitate to contact me with any additional questions. Thank you.

Sincerely,

Junghyun Cho
Interim Associate Dean for Research and Graduate Studies
Thomas J. Watson School of Engineering and Applied Science
Binghamton University
4400 Vestal Parkway East, PO Box 6000
Binghamton, NY 13902

**Proof: Students funding from TNSCST**

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Kumaraguru College of Tehnology

| | | | | | | |
|---|---|---|---|---|---|---|
| | Ms.K.Thilagavathi<br>Assistant Professor,Dept. of ECE<br>Kumaraguru College of<br>Tehnology,Coimbatore - 641049 | Detection of diseases in Sugarcane using image processing techniques | R C Sahana<br>S.V.Arockia Joseph<br>Arina | AS-016 | The Principal<br>Kumaraguru College of Technology<br>Coimbatore - 641049 | 7500/- |
| | Dr.R.Baskar<br>Assistant Professor of Biotechnology<br>Kumaraguru College of<br>Tehnology,Coimbatore-641049 | Modulation in the expression of GLUT4 receptor in adipocytes of TYPE II diabetes by tannin principles from Emblica officinalis | K.Nandhakumar<br>P.Subramania Siva<br>V.G.Balaji<br>V.R.Raguram | BS-024 | The Principal<br>Kumaraguru College of Technology<br>Coimbatore-641049 | 7500/- |
| | Dr.N.Saraswathy<br>Professor,Dept. of Biotechnology<br>Kumaraguru College of<br>Tehnology,Chinnavedampatti<br>Coimbatore - 641 049 | Development of diagnostic tool for diabetic induced retinopathy using foldscope | Aswin.S<br>Kerensa Miriam sheen<br>Malhant.T | BS-049 | The Principal<br>Kumaraguru College of Technology<br>Chinnavedampatti<br>Coimbatore - 641 049 | 7500/- |
| | M.Saravanan<br>Associate Professor<br>Dept. of Textile Technology<br>Kumaraguru College of<br>Technology,Coimbatore-641049 | Development of self cleaning finish in home textile material | V.Yariharisudhan<br>S.Kavya<br>P.Muthuvelan | CHE-018 | The Principal<br>Kumaraguru College of Technology<br>Coimbatore-641049 | 7500/- |
| | Mr.A.Vishnu<br>Assistant Professor<br>Dept. of Civil Engineering<br>Kumaraguru College of<br>Tehnology,Coimbatore-641049 | Experimental investigation on fibre reinforced self-curing concrete using polyethylene glycol (PEG) | Manikanda Prasath K. | ECV-004 | The Principal<br>Kumaraguru College of Technology<br>Coimbatore-641049 | 7500/- |
| | Mr.D.Allin Joe<br>Assistant Professor,Dept. of ECE<br>Kumaraguru College of<br>Tehnology,Saravanampatti<br>Coimbatore - 641049 | Smart water can ordering system | U.S.Praveen Raj<br>K.B.Ajithkumar<br>L.Jey Ganesh<br>G.Sushrut | EEE-063 | The Principal<br>Kumaraguru College of Tehnology<br>Saravanampatti<br>Coimbatore - 641049 | 7500/- |
| | Mr.A.Pranharekan<br>Assistant Professor<br>Dept. of Automobile Engineering<br>Kumaraguru College of<br>Tehnology,Chinnavedampatti<br>Coimbatore - 641 049 | Development of Driver safety system to avoid accidents | Mr.Gobinath.M.C<br>Guruprasad.A<br>Prabakaran.P | EME-083 | The Principal<br>Kumaraguru College of Technology<br>Chinnavedampatti<br>Coimbatore - 641 049 | 7500/- |
| | Dr.P.Ramalingam<br>Professor,Kumaraguru College of<br>Tehnology, Coimbatore - 641049 | Removal of synthetic dyes form textile wastewater using chitosan nanoparticle composite | N.Sri Nivetha | EME-099 | The Principal<br>Kumaraguru College of Technology<br>Coimbatore - 641049 | 7500/- |
| | Mr.R.Baskar<br>Associate Professor of Biotechnology<br>Kumaraguru College of Tech.<br>Coimbatore - 641049 | Evaluation of pharmacological activities of Eleocarpustectorius: A promising untapped fruit endemic to western ghats | Aruna M | MS-041 | The Principal<br>Kumaraguru College of Technology<br>Coimbatore - 641049 | 7500/- |
| | Ms.S.Kavitha<br>Assistant Professor,Dept. of Fashion<br>Tech.,Kumaraguru College of<br>Tech.,Coimbatore-641049 | Bio Degradable Packaging Material From Areca Fibre | E.Vidharshana | PS-015 | The Principal<br>Kumaraguru College of Technology<br>Coimbatore-641049 | 7500/- |

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**Department of Electrical and Electronics Engineering**

**AY: 2017-18** **date: 13-04-2018**

**Action taken report -Teachers Feedback**

| S.No | Analysis | Action taken report |
|---|---|---|
| 1. | The course title Power system-I need to be changed into Transmission and Distribution | Revised as Generation Transmission and Distributionin R2017 regulation |
| 2. | Curriculum can be enhanced with Courses on emerging technologies like design of power converter, computer architecture and RTOS. | RTOS is included in Embedded system course in R2017 regulations |
| 3. | Concept of BLDC motor can be incorporated in the DC machines and transformer course. | Included in R2018 regulation - U18EEI3201-DC Machines and Transformer course. |
| 4. | Application oriented experiment could be included in course U17EEI3203 Analog electronic lab. | Included in the course U17EEI3203 Analog Electronics. |
| 5. | In the DC machines and Transformer laboratory, experiment on Scott connection could be included. | Included in U18EEI3201 course- Lab component. |

Prepared By,

Dr,V.Kandasamy

**BoS Coordinator**

Approved By,

13/4/18

Dr.K.Malarvizhi

**BoS Chairman**

**Proof for Action Taken: 1 -** Revised as Generation Transmission and Distribution in R2017 regulation.

**U17EET4002** **GENERATION, TRANSMISSION AND DISTRIBUTION**

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

**COURSE OUTCOMES**

**After successful completion of this course, the students will be able to**

| | | |
|---|---|---|
| **CO1** | Understand the principles of power generation utilizing various conventional energy sources | **K2** |
| **CO2** | Impart the knowledge of generation of electricity based on various Non-conventional energy sources and study the PV module characteristics using modern software tools. | **K2** |
| **CO3** | Analyze the essential components of transmission line modeling and its performance. | **K3** |
| **CO4** | Describe and select the configurations of different line insulators and cables. | **K2** |
| **CO5** | Acquire knowledge on different types of distribution systems. | **K2** |

**PRE-REQUISITE**

1. Network Theory
2. Electro Magnetic Fields

**CO/PO Mapping**

(S/M/W indicates strength of correlation) S-Strong, M-Medium, W-Weak

| COs | Programme Outcomes(POs) | | | | | | | | | | | | PSOs | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PO 1 | PO 2 | PO 3 | PO 4 | PO 5 | PO 6 | PO 7 | PO 8 | PO 9 | PO10 | PO11 | PO12 | PSO 1 | PSO 2 |
| CO 1 | S | | | | | | | | | | | | | |
| CO 2 | S | | | | W | | | | | | | | W | |
| CO 3 | M | M | | | | | | | | | | | | |
| CO 4 | M | M | | | | | | | | | | | | |
| CO 5 | M | M | | | | | | | | | | | | |



Signature of the Chairman BOS EEE

**COURSE ASSESSMENT METHODS**

| **Direct** |
|---|
| 1. Continuous Assessment Test I, II<br>2. Assignment, Open Book Test, Cooperative Learning Report, Group Presentation, Problem based Learning, Project based Learning, Mini Projects, Project Report, Quiz, Role Play, Self-Explanatory Videos, Prototype or Product Demonstration etc. (as applicable)<br>3. End Semester Examination |
| **Indirect** |
| 1. Course End Survey<br>2. Programme Exit Survey<br>3. Placement/Higher Education Record<br>4. Feedback (Students, Employers, Parents, Professional Body members, Alumni) |

**CONVENTIONAL POWER GENERATION** **9 Hours**

Introduction – Basic idea of generation (Changeover from D.C to A.C, A.C generator)- Classification of Power Plants – Working principles of thermal (coal, gas and diesel), Hydro-electric and Nuclear Power plants – Merits and Demerits.

**NON-CONVENTIONAL POWER GENERATION** **9 Hours**

Environmental aspects of electric energy conversion: impacts of renewable energy generation on environment - Qualitative study of different renewable energy resources: Solar, wind (using Modern software tools), Fuel cell, Hydrogen energy systems and hybrid renewable energy systems.

**MODELING AND PERFORMANCE OF TRANSMISSION LINES** **12 Hours**

Structure of electrical power system Calculation of parameters of transmission lines: Resistance, inductance and capacitance- Classification of lines: Short line, medium line and long line - equivalent circuits, attenuation constant, phase constant, surge impedance, transmission efficiency and voltage regulation - Skin and Proximity effects- Ferranti effect, Phenomena of corona and its losses.

**INSULATORS AND CABLES (Qualitative study only)** **7 Hours**

Insulators: Types - voltage distribution in insulator string and grading, improvement of string efficiency - Underground cables: Constructional features of LT and HT cables- capacitance, dielectric stress and grading - thermal characteristics.

**DISTRIBUTION SYSTEM** **8 Hours**

Classification of Distribution systems - AC distribution and DC Distribution - Connection Scheme of Distribution System - Radial system, Ring-main and Interconnected System. AC distribution - AC distributor with concentrated load - three-phase, four-wire distribution system. Sub-mains - Stepped and tapered mains.

**TEXTBOOK**


1. S. N. Singh, “Electric Power Generation, Transmission and Distribution”, 2nd Edition, Prentice Hall of India, New Delhi, 2008.
2. B. R. Gupta, “Power System Analysis and Design”, 5th Edition, S. Chand, New Delhi, 2001.




Signature of the Chairman BOS EEE

**REFERENCES**


1. C.L. Wadhwa, “Electrical Power Systems”, 6th Edition, New Age International (P) Ltd., New Delhi, 2010.
2. D. P Kothari and I J Nagrath, “Modern Power System Analysis”, 4th Edition, Tata McGraw Hill, New Delhi, 2011.
3. El-Wakil M.M., “Power Plant Technology”, 2nd Edition, Tata McGraw Hill, New Delhi, 2010.
4. G.D. Rai, “Introduction to Power Plant Technology”, 3rd Edition, Khanna Publishers, New Delhi, 2013.


**Theory: 45 Tutorial: 0 Practical:0 Project: 0 Total: 45 Hours**



Signature of the Chairman BOS EEE

**Proof for Action Taken: 2 -** RTOS is included in Embedded system course in R2017 regulations

**U17EET6001 EMBEDDED SYSTEM**

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

**COURSE OUTCOMES**

**After successful completion of this course, the students will be able to**

| | | |
|---|---|---|
| **CO1** | Understand the fundamentals of Embedded systems and its communication protocols. | **K2** |
| **CO2** | Understand the architectural features of ARM processor. | **K2** |
| **CO3** | Apply the instructions to program ARM processor using Embedded C. | **K3** |
| **CO4** | Analyze the internal peripherals of ARM processor to design a product. | **K4** |
| **CO5** | Understand the basic concepts of RTOS in accessing shared resources for optimized CPU performance. | **K2** |

**PRE-REQUISITE**

1. Microprocessors and Microcontrollers

**CO/PO Mapping**
(S/M/W indicates strength of correlation) S-Strong, M-Medium, W-Weak

| COs | Programme Outcomes(POs) | | | | | | | | | | | | PSOs | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PO 1 | PO 2 | PO 3 | PO 4 | PO 5 | PO 6 | PO 7 | PO 8 | PO 9 | PO1 0 | PO1 1 | PO1 2 | PSO 1 | PSO 2 |
| CO 1 | S | M | | | | | | | | | | | M | |
| CO 2 | S | M | | | | | | | | | | | M | |
| CO 3 | | S | S | M | M | | | | M | | M | M | M | |
| CO 4 | | | S | S | S | | | | S | | M | M | M | S |
| CO 5 | S | | M | | M | | | | | | M | | M | M |

**COURSE ASSESSMENT METHODS**

| **Direct** |
|---|
| 1. Continuous Assessment Test I, II<br>2. Assignment, Open Book Test, Cooperative Learning Report, Group Presentation, Problem based Learning, Project based Learning, Mini Projects, Project Report, Quiz, Role Play, Self-Explanatory Videos, Prototype or Product Demonstration etc. (as applicable)<br>3. End Semester Examination |
| **Indirect** |
| 1. Course End Survey<br>2. Programme Exit Survey<br>3. Placement/Higher Education Record<br>4. Feedback (Students, Employers, Parents, Professional Body members, Alumni) |

**OVERVIEW OF EMBEDDED SYSTEMS** **8 Hours**

Basics of Embedded Systems – I/O Devices: Types and Examples – Synchronous, Iso-synchronous and Asynchronous Communication – Serial Communication Devices – Serial Communication Protocols: $I^2C$, CAN, USB - Parallel Device Ports– Parallel Bus device Protocols: ISA, PCI, ARM bus.

**ARM ARCHITECTURE** **8 Hours**



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ARM Programmer's model -Registers – Processor modes - Pipeline - Interrupts – ARM organization - ARM processor families –Instruction set – Thumb instruction set – ARM Memory Management Unit.

**ARM LPC2148 PROCESSOR PROGRAMMING** **10 Hours**

Writing and optimizing the embedded C Code – Profiling and Cycle Counting – Instruction Scheduling –Register Allocation – Conditional Execution – Looping Constructs – Bit Manipulation - Timers and counters -Watchdog timer. Programming Tools: KEIL IDE.

**ARM LPC2148 PROCESSOR PERIPHERALS** **12 Hours**

SPI and $I^2C$ – USB - UART– Analog to Digital conversion – temperature sensor – light sensor – accelerometer - Digital to Analog conversion –Digital sensors - PWM – Motor speed control.

**RTOS FOR EMBEDDED SYSTEMS** **7 Hours**

Introduction to RTOS - Task and Task Scheduler - Scheduling policies – Interrupt Service Routines - Interprocess communication mechanisms - Introduction to µC/ OS II.

**TEXT BOOKS**


1. Raj Kamal, "Embedded Systems – Architecture, Programming and Design", 2nd Edition, Tata McGraw Hill, New Delhi, 2013.
2. Andrew N. Sloss, Dominic Symes, Chris Wright, John Ray field 'ARM System Developer's Guide Designing and Optimizing System Software', Morgan Kaufmann Publishers, 2009.


**REFERENCES**


1. Steve Furber, "ARM System-on-Chip Architecture", Pearson Education, 2013.
2. Trevor Martin, 'The Insider's Guide to the Philips ARM7-Based Microcontrollers, An Engineer's Introduction To The LPC2100 Series' Hitex (UK) Ltd.,
3. David E Simon, "An Embedded Software Primer", Pearson Education India, New Delhi, 2013.
4. https://www.nxp.com/docs/en/data-sheet/LPC2141_42_44_46_48.pdf.


**Theory: 45** **Tutorial: 0** **Practical: 0** **Project: 0** **Total: 45 Hours**



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**Proof for Action Taken: 3 -** Included in R2018 regulation - U18EEI3201-DC Machines and Transformer course

**U18EEI3201 DC MACHINES AND TRANSFORMERS**

| L | T | P | J | C |
|---|---|---|---|---|
| 3 | 0 | 2 | 0 | 4 |

**COURSE OUTCOMES**

**After successful completion of this course, the students will be able to**

| | | |
|---|---|---|
| **CO1** | Apply laws of magnetic circuits to understand the performance characteristics of DC machines and its applications. | **K2** |
| **CO2** | Conduct and analyze various testing procedures of DC generators and motors | **K3** |
| **CO3** | Analyze performance characteristics of transformers and its applications | **K2** |
| **CO4** | Conduct and analyze various testing procedures of transformers | **K3** |
| **CO5** | Select DC machines and transformers for various applications | **K1** |

**CO/PO Mapping**

(S/M/W indicates strength of correlation) S-Strong, M-Medium, W-Weak

| COs | Programme Outcomes(POs) | | | | | | | | | | | | PSOs | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
| CO1 | S | S | S | M | W | | | | | | | | | S |
| CO2 | S | S | S | M | W | | | | | | | | M | |
| CO3 | S | S | M | | | | | | | | | | M | S |
| CO4 | W | M | S | | | | | | | | | M | M | |
| CO5 | W | M | S | | | | | | | | | M | | S |

**COURSE ASSESSMENT METHODS**

| **Direct** |
|---|
| 1. Continuous Assessment Test I, II<br>2. Model Examination (For Practical Courses & Embedded Courses)<br>3. Assignment, Open Book Test, Cooperative Learning Report, Group Presentation, Problem based Learning, Project based Learning, Mini Projects, Project Report, Quiz, Role Play, Self-Explanatory Videos, Prototype or Product Demonstration etc. (as applicable)<br>4. End Semester Examination |
| **Indirect** |
| 1. Course End Survey<br>2. Programme Exit Survey<br>3. Placement/Higher Education Record<br>4. Feedback (Students, Employers, Parents, Professional Body members, Alumni) |

**THEORETICAL COMPONENT CONTENTS:**

**DC GENERATORS** **10 Hours**

Review of magnetic circuits- - IEC & IEEE Standards - Constructional features of DC machines- Principle of operation of DC generator-EMF equation-Types of field excitations-separately excited, shunt and series-Voltage build up in a shunt generator, critical field resistance and critical speed, Armature reaction and Commutation.

**DC MOTORS** **9 Hours**

Principle of operation- Back EMF-Torque equation-Types and characteristics-Need for starters and types-Speed control of DC shunt and series motors- Braking of DC Motors- Introduction to BLDC motors.



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**TESTING OF DC MACHINES** **8 Hours**

Losses and efficiency – Testing of DC machines: Brake test - Swinburne's test – Hopkinson's test.

**TRANSFORMERS** **12 Hours**

Single Phase Transformer : Construction and Principle of Operation – EMF Equation - Transformer on No Load and Load - Phasor Diagram - Equivalent Circuit – Voltage Regulation - Losses - Efficiency - All Day Efficiency - Parallel Operation - Three Phase Transformer connections –Auto transformers- Construction and applications

**TESTING OF TRANSFORMERS** **6 Hours**

Polarity test – Open circuit and Short circuit tests – Sumpner's test – Separation of no load losses- Introduction to CAD modelling of transformers using Magnet 7.5

**PRACTICAL COMPONENT CONTENTS:**
**LIST OF EXPERIMENTS**

1. Open Circuit and load characteristics of DC shunt generator.
2. Brake test of DC shunt motor
3. Load characteristics of DC series motor
4. Speed control on DC motor
5. Separation of no load losses of DC shunt motor
6. Hopkinson's test on DC motor generator set
7. Load test on single-phase transformer
8. OC and short circuit test on single-phase transformer
9. Sumpner's test
10. SCOTT connection

**TEXTBOOKS:**


1. D P Kothari, and I J Nagrath, "Electric Machines", McGraw Hill Education (India) Private Limited, New Delhi, 2013.
2. AE Fitzgerald and C Kingsley, "Electric Machinery", New York, McGraw Hill Education 2013


**REFERENCES:**


1. Ashfaq Husain, "Electric Machines", Dhanpat Rai& Co., New Delhi 2011
2. P.S.Bimbhra, "Electrical Machinery", 7th Edition, Khanna Publishers, 2011, New Delhi.


**Theory: 45** **Tutorial: 0** **Practical: 30** **Project: 0** **Total: 75 Hours**



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**Proof for Action Taken: 4 -** Included in the course U17EEI3203 Analog Electronics.

**U17EEI3203 ANALOG ELECTRONICS**

| L | T | P | J | C |
|---|---|---|---|---|
| 3 | 0 | 2 | 0 | 4 |

## COURSE OUTCOMES

**After successful completion of this course, the students will be able to**

| | | |
|---|---|---|
| **CO 1** | Understand the characteristics and applications of various semiconductor devices. | **K1** |
| **CO 2** | Gain knowledge about small signal analysis of BJT and FET amplifiers. | **K2** |
| **CO 3** | Analyze large signal amplifier and oscillator circuits. | **K2** |
| **CO 4** | Analyze the Op-amp based circuits. | **K3** |
| **CO 5** | Familiarize with the concept of IC based voltage regulator and signal conversion circuits | **K2** |
| **CO 6** | Apply the knowledge of semiconductor devices to design analog circuits for various applications. (Mini projects) | **K3** |

**CO/PO Mapping**

(S/M/W indicates strength of correlation) S-Strong, M-Medium, W-Weak

| COs | Programme Outcomes(POs) | | | | | | | | | | | | PSOs | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
| CO1 | M | | M | | | | | | | | | | W | |
| CO2 | M | M | W | | | | | | | | | | W | |
| CO3 | | | S | W | | | | | | | W | | M | M |
| CO4 | | | S | W | | | | | | | W | | M | M |
| CO5 | M | M | | | | | | | | | | | W | W |
| CO6 | W | | M | | | | | | M | | M | | S | W |

**COURSE ASSESSMENT METHODS**

**Direct**

4. Continuous Assessment Test I, II
5. Model Examination (For Practical Courses & Embedded Courses)
6. Assignment, Open Book Test, Cooperative Learning Report, Group Presentation, Problem based Learning, Project based Learning, Mini Projects, Project Report, Quiz, Role Play, Self-Explanatory Videos, Prototype or Product Demonstration etc. (as applicable)
7. End Semester Examination

**Indirect**

5. Course End Survey
6. Programme Exit Survey
7. Placement/Higher Education Record
8. Feedback (Students, Employers, Parents, Professional Body members, Alumni)

**THEORETICAL COMPONENT CONTENTS:**

**SEMICONDUCTOR DEVICES** **9 Hours**

PN junction Diode – Zener Diode – BJT –JFET- MOSFET- Structure, Operation and VI Characteristics - Applications of Diode: Half Wave & Full Wave Rectifier – Zener voltage regulator.



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**SMALL SIGNAL AMPLIFIERS USING BJT AND FET** **9 Hours**

Need for Biasing, Q point, DC and AC Load line, Biasing Circuits – Base bias, Voltage divider bias, emitter bias, CE, CB Amplifiers –Frequency response and hybrid model of CE amplifier,– FET amplifier: CS Amplifier, Multistage Amplifier: RC coupled amplifier, Darlington Amplifier, Differential Amplifier using BJT.

**LARGE SIGNAL, FEEDBACK AMPLIFIERS AND OSCILLATORS** **9 Hours**

Classification of Amplifiers - Push-pull Amplifiers: A, B & AB Amplifiers — Tuned Amplifiers: Single Tuned Amplifiers-Advantages of Negative Feedback – Topologies of Voltage/Current: Series & Shunt Feedback Amplifiers – Positive Feedback – Barkhausen Criteria – Operation of RC phase shift, Wien Bridge, Crystal Oscillators.

**OPERATIONAL AMPLIFIER CIRCUITS** **9 Hours**

Introduction– internal circuit- Basic operations of Op-Amp-Inverting, Non inverting, Differentiator, Integrator- Differential Amplifier: Common mode and Differential mode Analysis - Op-Amp Based Instrumentation Amplifier – Comparator – Multi vibrators – Schmitt trigger

**SPECIAL ICs AND SIGNAL CONVERSION CIRCUITS** **9 Hours**

V/I and I/V conversion – V/F and F/V conversion – IC 555 Timer circuit: Functional block, characteristics & applications, Astable and monostable operation, IC 566 - voltage controlled oscillator, IC565-phase locked loop circuit, IC voltage regulators - LM317, 723

**PRACTICAL COMPONENT CONTENTS:**

**LIST OF EXPERIMENTS**

1. Characteristics of BJT - CE configurations.
2. Characteristics of JFET.
3. Voltage regulator using Zener diode
4. Frequency response of common emitter amplifier.
5. Half wave and full wave rectifiers with filter.
6. Inverting &Non inverting amplifiers using op-amp
7. Integrator and differentiator circuits using op-amp
8. Wien bridge oscillator using op-amp.
9. Astable operation using IC 555.
10. Simulation of op-amp circuits using PSPICE/ MATLAB.

**TEXT BOOKS**


1. S. Salivahanan, N. Suresh Kumar, "Electronic Devices and Circuits", 3rd Edition, McGraw-Hill Education, 2012.
2. Thomas L. Floyd, "Electronic Devices (Conventional Current Version)", 9th Edition, Prentice Hall of India, 2012.
3. D. Roy Choudhary, Sheil B. Jani, "Linear Integrated Circuits", 4th Edition, New Age International, New Delhi, 2010.


**REFERENCES**


1. Jacob Millman, Christos C. Halkias, SatyabrataJit, "Electronic Devices and Circuits",
2. Tata McGraw Hill Publishing Limited, New Delhi, 2010.
3. B.P.Singh, Rekha Singh, "Electronic Devices and Circuits", 2nd Edition, Pearson Education, 2013.
4. David A. Bell, "Electronic Devices and Circuits", 5th Edition, Oxford University Press, 2008.
5. J.B.Gupta, "Electronic Devices and Circuits", 2nd Edition, JPA Publications, 2009.
6. Adel S. *Sedra*, Kenneth C. *Smith*&Arun N. Chandorkar, "Microelectronic Circuits", 6th Edition, Oxford University Press, 2013.
7. Donald A Neamen, "Microelectronics Circuit Analysis and Design", 4th Edition, Tata McGraw IHill Publishing Limited, 2009.




Signature of the Chairman BOS EEE

**Proof for Action Taken: 5 -** Included in U18EEI3201 course- Lab component.

## U18EEI3201 DC MACHINES AND TRANSFORMERS

| L | T | P | J | C |
|---|---|---|---|---|
| 3 | 0 | 2 | 0 | 4 |

**COURSE OUTCOMES**

**After successful completion of this course, the students will be able to**

| | | |
|---|---|---|
| **CO1** | Apply laws of magnetic circuits to understand the performance characteristics of DC machines and its applications. | **K2** |
| **CO2** | Conduct and analyze various testing procedures of DC generators and motors | **K3** |
| **CO3** | Analyze performance characteristics of transformers and its applications | **K2** |
| **CO4** | Conduct and analyze various testing procedures of transformers | **K3** |
| **CO5** | Select DC machines and transformers for various applications | **K1** |

**CO/PO Mapping**
(S/M/W indicates strength of correlation) S-Strong, M-Medium, W-Weak

| COs | Programme Outcomes(POs) | | | | | | | | | | | | PSOs | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
| CO1 | S | S | S | M | W | | | | | | | | | S |
| CO2 | S | S | S | M | W | | | | | | | | M | |
| CO3 | S | S | M | | | | | | | | | | M | S |
| CO4 | W | M | S | | | | | | | | | M | M | |
| CO5 | W | M | S | | | | | | | | | M | | S |

**COURSE ASSESSMENT METHODS**

| |
|---|
| **Direct** |
| 1. Continuous Assessment Test I, II<br>2. Model Examination (For Practical Courses & Embedded Courses)<br>3. Assignment, Open Book Test, Cooperative Learning Report, Group Presentation, Problem based Learning, Project based Learning, Mini Projects, Project Report, Quiz, Role Play, Self-Explanatory Videos, Prototype or Product Demonstration etc. (as applicable)<br>4. End Semester Examination |
| **Indirect** |
| 1. Course End Survey<br>2. Programme Exit Survey<br>3. Placement/Higher Education Record<br>4. Feedback (Students, Employers, Parents, Professional Body members, Alumni) |

**THEORETICAL COMPONENT CONTENTS:**

**DC GENERATORS** **10 Hours**

Review of magnetic circuits- - IEC & IEEE Standards - Constructional features of DC machines- Principle of operation of DC generator-EMF equation-Types of field excitations-separately excited, shunt and series-Voltage build up in a shunt generator, critical field resistance and critical speed, Armature reaction and Commutation.

**DC MOTORS** **9 Hours**

Principle of operation- Back EMF-Torque equation-Types and characteristics-Need for starters and types-Speed control of DC shunt and series motors- Braking of DC Motors- Introduction to BLDC motors.



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**TESTING OF DC MACHINES** **8 Hours**

Losses and efficiency – Testing of DC machines: Brake test - Swinburne's test – Hopkinson's test.

**TRANSFORMERS** **12 Hours**

Single Phase Transformer : Construction and Principle of Operation – EMF Equation - Transformer on No Load and Load - Phasor Diagram - Equivalent Circuit – Voltage Regulation - Losses - Efficiency - All Day Efficiency - Parallel Operation - Three Phase Transformer connections –Auto transformers- Construction and applications

**TESTING OF TRANSFORMERS** **6 Hours**

Polarity test – Open circuit and Short circuit tests – Sumpner's test – Separation of no load losses- Introduction to CAD modelling of transformers using Magnet 7.5

**PRACTICAL COMPONENT CONTENTS:**
**LIST OF EXPERIMENTS**

1. Open Circuit and load characteristics of DC shunt generator.
2. Brake test of DC shunt motor
3. Load characteristics of DC series motor
4. Speed control on DC motor
5. Separation of no load losses of DC shunt motor
6. Hopkinson's test on DC motor generator set
7. Load test on single-phase transformer
8. OC and short circuit test on single-phase transformer
9. Sumpner's test
10. SCOTT connection

**TEXTBOOKS:**


1. D P Kothari, and I J Nagrath, "Electric Machines", McGraw Hill Education (India) Private Limited, New Delhi, 2013.
2. AE Fitzgerald and C Kingsley, "Electric Machinery", New York, McGraw Hill Education 2013


**REFERENCES:**


1. Ashfaq Husain, "Electric Machines", Dhanpat Rai& Co., New Delhi 2011
2. P.S.Bimbhra, "Electrical Machinery", 7th Edition, Khanna Publishers, 2011, New Delhi.


**Theory: 45** **Tutorial: 0** **Practical: 30** **Project: 0** **Total: 75 Hours**



Signature of the Chairman BOS EEE

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**Department of Mechanical Engineering**

**AY: 2017-18** **Date: 11.04.2018**

**Feedback -Teacher**

1. . It is recommended to give credits for the placement training and assessments on core courses under professional elective category. Since the training and assessments are based on the Mechanical Engineering core courses this request may be considered positively.
2. It is suggested to changing the name of the course Good shop floor practices for Manufacturing excellence to Shop floor practices for Manufacturing excellence. It is proposed to retain the course name as it is, it can be taken forward for discussion in the next regulation.

Prepared By,

Dr.M.Balaji

BoS Coordinator

Approved By,

Dr.V. Muthukumaran

BoS Chairman

Professor & Head
Department of Mechanical Engineering
Kumaraguru College of Technology
Coimbatore-641 049.

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**Department of Mechanical Engineering**

**AY: 2017-18** **Date: 11.04.2018**

**Teacher Feedback Analysis**

1. It is suggested to changing the name of the course Good shop floor practices for Manufacturing excellence to Shop floor practices for Manufacturing excellence. It is proposed to retain the course name as it is, it can be taken forward for discussion in the next regulation. - The name of the course Good shop floor practices for Manufacturing excellence U15MEI004 was retained as it is.

Prepared By,

Dr.M.Balaji

BoS Coordinator

Approved By,

Dr.V. Muthukumaran

BoS Chairman

Professor & Head
Department of Mechanical Engineering
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Coimbatore-641 049.

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**Department of Mechanical Engineering**

**AY: 2017-18** **Date: 11.04.2018**

**Action taken report -Teacher Feedback**

| S.No | Analysis | Action taken report |
|---|---|---|
| 1. | It is suggested to changing the name of the course Good shop floor practices for Manufacturing excellence to Shop floor practices for Manufacturing excellence. It is proposed to retain the course name as it is, it can be taken forward for discussion in the next regulation. | The name of the course Good shop floor practices for Manufacturing excellence U15MEI004 was retained as it is. |

Prepared by,

Dr.M.Balaji

BoS Coordinator

Approved By

Dr.V.Muthukumaran

BoS Chairperson

Professor & Head
Department of Mechanical Engineering
Kumaraguru College of Technology
Coimbatore-641 049.

**Proof for Action Taken : Point-1 The name of the course Good shop floor practices for Manufacturing excellence U15MEI004 was retained as it is.**



**U15ME/004 GOOD SHOP FLOOR PRACTICES FOR MANUFACTURINGEXCELLENCE**

| L | T | P | C |
|---|---|---|---|
| 0 | 0 | 2 | 1 |

**Course outcomes**
**After successful completion of the course, the students should be able to**
**CO 1:** Understand the concepts of floor practices

**Pre-requisite:**Nil

**CO/PO Mapping**
(S/M/W indicates strength of correlation) S-Strong, M-Medium, W-Weak

| COs | Programme Outcomes(POs) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
| CO1 | | | | M | S | | | | | M | | S |

**Course Assessment methods:**

| Direct | Indirect |
|---|---|
| 1. End semester exam | Course end survey |

## Course Content

1. Good shop floor
2. 5S work place management
3. Waste elimination
4. Problem Solving Tools
5. Measurement System Analysis (MSA)
6. Process Capability /Machine Capability studies
7. Process Audits
8. Engineering metrology
9. Training of new employees on shop floor
10. Kaizen
11. My Model Machine
12. Poke yoke techniques
13. Set up approval techniques
14. Preventive maintenance

**Total: 15 Hrs**

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**Department of Information Technology**

**AY: 2017-18** **Date :11.04.2018**

**Action taken report -Teacher Feedback**

| S.No | Analysis | Action taken report |
|---|---|---|
| 1. | Existing curriculum for R15 and be added with latest elective courses | **New One Credit Courses for R15 regulation:**<br>1. U15ITIN12 - Python Programming<br>2. U15ITIN13 - Progressive Web apps<br>**New Electives for R15 regulation:**<br>1. U15ITE037 - Problem Solving |
| 2. | As per AICTE model recommendations, balancing of courses can be done. | **R18 Curriculum:**<br>1. Basic Engineering Laboratory with 3 credits renamed as Basic Electrical, electronics and Computer Hardware Lab<br>2. Workshop / Manufacturing Practices given 1 credit.<br>3. Semiconductor physics added.<br>**R17 Curriculum:**<br>Introduced Constitution of India and Environmental Science and Engineering as non-credit courses. |

PreparedBy,

BoS Coordinator

Approved By,

BoS Chairman

**Proof for action taken 1:**

| ONE CREDIT COURSES | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1. | U15ITIN01 | Innovation and Entrepreneurship | EEC | 1 | 1 | 0 | 0 | 1 | - |
| 2. | U15ITIN02 | ERP and Business Applications | EEC | 1 | 1 | 0 | 0 | 1 | - |
| 3. | U15ITIN03 | Agile Software Development | EEC | 1 | 1 | 0 | 0 | 1 | ITT501 |
| 4. | U15ITIN04 | UX/UI Design | EEC | 1 | 1 | 0 | 0 | 1 | - |
| 5 | U15ITIN05 | Mobile Application Development | EEC | 1 | 0 | 0 | 2 | 1 | ITT402, ITT502 |
| 6 | U15ITIN06 | Front End Design | EEC | 1 | 1 | 0 | 0 | 1 | - |
| 7 | U15ITIN08 | CCNA- Routing And Switching Configuration | EEC | 1 | 0 | 0 | 2 | 1 | - |
| 8 | U15ITIN09 | Data Analytics | EEC | 1 | 0 | 0 | 2 | 1 | - |
| 9 | U15ITIN10 | Graphics Design using Photoshop | EEC | 1 | 0 | 0 | 2 | 1 | - |
| 10 | U15ITIN11 | Professional Skills | EEC | 1 | 1 | 0 | 0 | 1 | - |
| 11 | U15ITIN12 | Python Programming | EEC | 1 | 0 | 0 | 2 | 1 | - |
| 12 | U15ITIN13 | Progressive Web apps | EEC | 1 | 1 | 0 | 0 | 1 | - |
| 13 | U15ITIN15 | Full Stack Development | EEC | 1 | 0 | 0 | 2 | 1 | - |

| Professional Electives (PE) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Course Code | Course Title | Category | Contact Hours | Hrs/Week & Credits | | | | Pre-requisites |
| | | | | | L | T | P | C | |
| 1 | U15ITE001 | Theory of Computation | PE | 3 | 3 | 0 | 0 | 3 | MAT403 |
| 2 | U15ITE002 | TCP/ IP Socket Programming | PE | 3 | 3 | 0 | 0 | 3 | ITT402 |
| 3 | U15ITE003 | Distributed Systems | PE | 3 | 3 | 0 | 0 | 3 | ITT402 |
| 4 | U15ITE004 | Principles of Compiler Design | PE | 3 | 3 | 0 | 0 | 3 | - |
| 5 | U15ITE005 | User Interface Design | PE | 3 | 3 | 0 | 0 | 3 | - |
| 6 | U15ITE006 | Cloud Computing | PE | 3 | 3 | 0 | 0 | 3 | ITT402 |
| 7 | U15ITE007 | Ad Hoc & Sensor Networks | PE | 3 | 3 | 0 | 0 | 3 | ITT402 |
| 8 | U15ITE008 | High Speed Networks | PE | 3 | 3 | 0 | 0 | 3 | ITT402 |
| 9 | U15ITE009 | Computational Intelligence | PE | 3 | 3 | 0 | 0 | 3 | ITE024, MAT403 |
| 10 | U15ITE010 | Service Oriented Architecture | PE | 3 | 3 | 0 | 0 | 3 | ITT601 |
| 11 | U15ITE011 | Real Time Systems | PE | 3 | 3 | 0 | 0 | 3 | ITT404 |
| 12 | U15ITE012 | Information Coding Techniques | PE | 3 | 3 | 0 | 0 | 3 | - |
| 13 | U15ITE013 | Software Architecture | PE | 3 | 3 | 0 | 0 | 3 | ITT501 |
| 14 | U15ITE014 | Digital Image Processing | PE | 3 | 3 | 0 | 0 | 3 | ECT511 |
| 15 | U15MCE708 | Mobile Robotics | PE | 3 | 3 | 0 | 0 | 3 | - |
| 16 | U15GST002 | Total Quality Management | HS | 3 | 3 | 0 | 0 | 3 | - |
| 17 | U15GST003 | Principles of Management | HS | 3 | 3 | 0 | 0 | 3 | - |
| 18 | U15GST004 | Operation Research | BS | 3 | 3 | 0 | 0 | 3 | - |
| 19 | U15ITE015 | C # and .NET Programming | PE | 3 | 3 | 0 | 0 | 3 | ITT303 |
| 20 | U15ITE016 | Building Enterprise Applications | PE | 3 | 3 | 0 | 0 | 3 | ITT502 |
| 21 | U15ITE017 | Business Intelligence | PE | 3 | 3 | 0 | 0 | 3 | ITT604 |
| 22 | U15ITE018 | Information Retrieval | PE | 3 | 3 | 0 | 0 | 3 | ITT604 |
| 23 | U15ITE019 | Software Quality Assurance & Testing | PE | 3 | 3 | 0 | 0 | 3 | ITT501 |
| 24 | U15ITE020 | Software Project Management | PE | 3 | 3 | 0 | 0 | 3 | ITT501 |
| 25 | U15ITE021 | Management Information System | PE | 3 | 3 | 0 | 0 | 3 | - |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 26 | U15ITE022 | Information Security | PE | 3 | 3 | 0 | 0 | 3 | - |
| 27 | U15ITE023 | Open Source Technologies | PE | 3 | 3 | 0 | 0 | 3 | - |
| 28 | U15ITE024 | Artificial Intelligence | PE | 3 | 3 | 0 | 0 | 3 | MAT403 |
| 29 | U15ITE025 | Coding and Hacking | PE | 6 | 0 | 0 | 6 | 3 | - |
| 30 | U15ITE026 | Front End Web Designing | PE | 6 | 2 | 0 | 4 | 4 | - |
| 31 | U15ITE027 | Introduction to Enterprise ResourcePlanning | PE | 3 | 3 | 0 | 0 | 3 | - |
| 32 | U15ITE028 | Ethical Hacking | PE | 3 | 3 | 0 | 0 | 3 | - |
| 33 | U15ITE029 | Embedded Platforms | PE | 4 | 2 | 1 | 1 | 4 | - |
| 34 | U15ITE030 | Integrated Product Development | PE | 4 | 1 | 1 | 2 | 3 | - |
| 35 | U15ITE031 | Cyber Security | PE | 3 | 3 | 0 | 0 | 3 | - |
| 36 | U15ITE032 | Design Patterns | PE | 3 | 3 | 0 | 0 | 3 | ITT303 |
| 37 | U15ITE033 | Sensors, Actuators &Interfaces | PE | 5 | 2 | 1 | 2 | 4 | - |
| 38 | U15ITE034 | Internship-I | EEC | 2 weeks | 0 | 0 | 2 | 1 | - |
| 39 | U15ITE035 | Internship-II | EEC | 4 weeks | 0 | 0 | 4 | 2 | - |
| 40 | U15ITE036 | Internship-III | EEC | 6 weeks | 0 | 0 | 6 | 3 | - |
| 41 | U15ITE037 | Problem Solving | PE | 8 | 0 | 0 | 8 | 4 | - |
| 42 | U15ITE038 | Machine Learning | PE | 3 | 3 | 0 | 0 | 3 | - |
| 43 | U15ITE039 | Block Chain Technology | PE | 3 | 3 | 0 | 0 | 3 | - |

| U15ITIN12 | Python Programming | L | T | P | C | |
|---|---|---|---|---|---|---|
| | | 0 | 0 | 2 | 1 | |

**COURSE OBJECTIVES**

- To understand the basics and working of python programming
- To learn the concepts of control structures using python
- To reuse the code using functions in python

**Course Outcomes:**

**After successful completion of this course, the students should be able to**

| | | |
|---|---|---|
| CO1 | Working and writing a basic python code | K2 |
| CO2 | Apply the concepts of control structures and functions to solve a problem | K3 |
| CO3 | Analyze the strings, manipulate it and working with data structures | K3 |

**Pre-requisite: Nil**

**CO/PO Mapping**
(S/M/W indicates strength of correlation) S-Strong, M-Medium, W-Weak

| Cos | Programme Outcomes(POs) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
| CO1 | S | S | | | M | | | | | | | M |
| CO2 | S | S | | | M | | | | | | | M |
| CO3 | S | S | S | | M | | | | | | | M |

**Course Assessment methods:**

| Direct | Indirect |
|---|---|
| 1. Quiz<br>2. Assignment | 1. Course Exit Survey |

**List of Experiments:**

1. Installation and setting up path for python
2. Working with Python Basic Syntax
3. Problems based on Conditional Statements such as odd or even, positive or negative etc.
4. Problems based on Control Structures – print the next number in the series, Armstrong number, Fibonacci series, factorial, floyd's triangle, pascal's triangle etc.
5. Problems based on String Manipulation – string tokenizer, count the number of alphabets, whitespaces & digits, reversing a sentence
6. Working with Functions & recursive functions – factorial, sorting, searching
7. Problems based on Data structures – Lists, Tuples, Dictionary, Sets

**Theory:** 0 hours **Practical:** 30 hours **Total Hours:** 30hours

| U15ITIN13 | Progressive Web Apps | L | T | P | C | |
|---|---|---|---|---|---|---|
| | | 0 | 0 | 2 | 1 | |

**COURSE OBJECTIVES**

- To learn about the Progressive Web Apps
- To learn about auditing the web apps

**Course Outcomes:**

**After successful completion of this course, the students should be able to**

| | | |
|---|---|---|
| CO1 | Create web application and to work with service workers | K2 |
| CO2 | Identify and use cached assets in the application | K3 |
| CO3 | Audit and analyze web apps | K4 |

**Pre-requisite: Nil**

**CO/PO Mapping**

(S/M/W indicates strength of correlation) S-Strong, M-Medium, W-Weak

| COs | Programme Outcomes(POs) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
| CO1 | M | M | M | | | | | | | | W | |
| CO2 | M | W | M | | | | | | | | W | |
| CO3 | M | W | M | | M | | | | | | M | |

**Course Assessment methods:**

| Direct | Indirect |
|---|---|
| 3. Assignment<br>4. Written Test | 1. Course Exit Survey |

**Progressive Web Apps:**

| | |
|---|---|
| What is PWA? – Why PWA? – Core technologies – Introduction to Service Workers – Working with Fetch API – Catching Files – Lighthouse PWA Analysis Tool – Working with Promises - IndexDB | 8 hours |
| Live Data in the Service Worker – Using Workbox – Responsive Design – Responsive Images – Introduction to Push Notifications – Payment Request API – Integrating Analytics | 7 hours |

Theory: 0 hours Practical:30 hours Total Hours: 30 hours

**REFERENCES**


1. "Building Progressive Web Apps: Bringing the power of Native to the Browser" by Tal Ater, O'Reilly Publications
2. "Beginning Progressive Web App Development: Creating a Native App Experience on the Web" by Dennis Sheppard, Apress

| U15ITE037 | PROBLEM SOLVING | L | T | P | J | C |
|---|---|---|---|---|---|---|
| | | 0 | 0 | 8 | 0 | 4 |

**Course Outcomes**

After successful completion of this course, the students should be able to

**CO1:** Select appropriate data types and control structures for solving a given problem.

**CO2:** Develop algorithmic solutions to simple computational problems.

**CO3:** Implement various stack,queue,list, sorting and searching algorithms.

**CO4:** Develop simple applications using various data structures.

**CO5:** Construct Java program using concepts of class, methods and objects & exception handling.

**Pre-requisites:**

**C/C++,Data Structures,Object Oriented Programming**

**CO/PO Mapping**

(S/M/W indicates strength of correlation) S-Strong, M-Medium, W-Weak

| COs | Programme Outcomes(POs) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
| CO1 | S | S | S | | S | | | | S | | | |
| CO2 | S | S | S | | S | | | | S | M | | M |
| CO3 | S | S | S | | S | | | | S | M | | M |
| CO4 | S | S | S | | S | | | | S | M | | M |
| CO5 | M | M | M | | S | | | | M | | | |

**Course Assessment methods**

**Direct**

1. Online Test - I
2. Online Test - II
3. Final Assessment

**Indirect**

1. Course-end survey

## LAB COMPONENTS

**LIST OF EXPERIMENTS** **120 Hours**

1. C/C++ Language – Arrays, Strings, Pointers, Structures
2. Memory management, File handling
3. Applications on stack, list, queue
4. Applications on tree, graph
5. Java – Packages, Exception handling, Framework, Error handling, Threads

| Theory: 0 | Tutorial: 0 | Practical: 120 | Project: 0 | Total: 120 Hours |
|---|---|---|---|---|

**Proof for action taken 2:**

| SEMESTER I | | | | | | | | | | Pre-requisite |
|---|---|---|---|---|---|---|---|---|---|---|
| S.No | Course Code | Course Title | Course Mode | CT | L | T | P | J | C | |
| 1 | U18MAI1201 | Linear Algebra and Calculus | Embedded - Theory & Lab | BS | 3 | 0 | 2 | 0 | 4 | - |
| 2 | U18CSI1201 | Structured Programming using C | Embedded - Theory & Lab | ES | 3 | 0 | 2 | 0 | 4 | - |
| 3 | U18EEI1201 | Basic Electrical and Electronics Engineering | Embedded - Theory & Lab | ES | 3 | 0 | 2 | 0 | 4 | - |
| 4 | U18ENI1201 | Fundamentals of Communication I | Embedded - Theory & Lab | HS | 2 | 0 | 2 | 0 | 3 | - |
| 5 | U18INI1600 | Engineering Clinic I | Embedded –Lab & Project | ES | 0 | 0 | 4 | 2 | 3 | - |
| | | | | | | | | Total Credits | 18 | |
| | | | | | | | | Total Periods per week | 25 | |

**U18EEI1201** **BASIC ELECTRICAL AND ELECTRONICS ENGINEERING**

(Common to CSE,IT,ISE)

**COURSE OUTCOMES**

**After successful completion of this course, The students should be able to**

**CO1** Solving basic DC and AC circuits
**CO2** Select suitable DC machine for given application
**CO3** Select suitable AC machine for given application
**CO4** Characterize logic gates, semiconductor devices according to their applications
**CO5** Identify electronic components and use them to design simple circuits.

**Pre-requisites :Nil**

**CO/PO Mapping**
(S/M/W indicates strength of correlation) S-Strong, M-Medium, W-Weak

| COs | Programme Outcomes(POs) | | | | | | | | | | | | PSOs | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PO 1 | PO 2 | PO 3 | PO 4 | PO 5 | PO 6 | PO 7 | PO 8 | PO 9 | PO 10 | PO 11 | PO 12 | PSO 1 | PSO 2 |
| CO1 | M | M | | | | | | | | | | W | | |
| CO2 | M | M | | | | | | | | | | W | | |
| CO3 | M | M | | | | | | | | | | W | | |
| CO4 | M | M | | | | | | | | | | W | | |
| CO5 | M | M | | | | | | | | | | W | | |

**COURSE ASSESSMENT METHODS**

**DIRECT**

1. Continuous Assessment Test I, II (Theory Component)
2. Assignment (Theory Component)
3. Group Presentation (Theory Component)
4. Pre/Post - experiment Test/Viva; Experimental Report for each experiment (lab component)
5. Model examination (lab component)
6. End Semester Examination (Theory and lab component)

**INDIRECT**

1. Course-end survey

**DC circuits:**

**9hrs**

Basic circuit elements and sources, Ohms law, Kirchhoff's laws, series and parallel connection of circuit elements, Node voltage analysis, Mesh current analysis.

**AC circuits:**

Alternating voltages and currents - SinglePhase Series RL, RC, RLC **9hrs**
Circuits, Power in AC circuits –PowerFactor.

**Electrical Machines:** **9hrs**

Construction, Working Principle andapplications of DC generators, DC Motors, single phase Transformers, three phase and single phase induction motors.

**Semiconductor devices and Circuits:** **9hrs**

PN junction diode -- Zener Diode – Half wave and Full wave rectifier-voltage regulators – Bipolar Junction transistors,JFET, MOSFET – characteristics

**Digital Systems:** **9hrs**

Binary Number System – Logic Gates – Boolean algebra – Half and Full Adders -sbutractor– Multiplexer – Demultiplexer-decoder-flip flops.

**Theory:45 Tutorial: 0 Practical: 0 Project: 0 Total: 45 Hours**

**TEXT BOOKS:**

1. Mittle N., "Basic Electrical Engineering", Tata McGraw Hill Edition, New Delhi, 1990.
2. Sedha R.S., "Applied Electronics", S. Chand & Co., 2006.

**REFERENCES**

1. Muthusubramanian R, Salivahanan S and Muraleedharan K A, "Basic Electrical, Electronics and Computer Engineering", Tata McGraw Hill, Second Edition, 2017.
2. Nagsarkar T K and Sukhija M S, "Basics of Electrical Engineering", Oxford press 2005.
3. Mehta V K, "Principles of Electronics", Third Edition, S.Chand& Company Ltd, 1994.
4. Mahmood Nahvi and Joseph A. Edminister, "Electric Circuits", Schaum' Outline Series, McGraw Hill, 2002.
5. Premkumar N, "Basic Electrical Engineering", Anuradha Publishers, 2003.

**LABORATORY EXPERIMENTS**

1. Measurementofelectricalquantities–voltage,current,power&power factor in RL, RC and RLC circuits.
2. Verification of Kirchoff's Voltage and Current Laws.
3. Verification of Mesh and Nodal analysis.
4. Load test on DC shunt motor.
5. Load test on single phase transformer.
6. Load test on single phase induction motor.
7. Verification of truth tables of OR, AND, NOT, NAND, NOR, EX-OR, EXNOR gates.
8. Full wave rectifier with and without filter.
9. Input and output Characteristics of BJT – CE configuration.
10. Characteristics of PN junction diode and Zener diode.

**Theory: 0 Tutorial: 0 Practical: 30 Project: 0 Total: 30Hours**

| LIST OF MANDATORY COURSES | | | | | |
|---|---|---|---|---|---|
| **S.No** | **Course Code** | **Course Title** | **Course Mode** | **CT** | **Semester** |
| 1. | U17VEP3503 | Human Excellence-Family Values | Lab | HS | 3 |
| 2. | U17VEP4504 | Human Excellence-Professional Values | Lab | HS | 4 |
| 3. | U17INT5000 | Constitution of India | Theory | MC | 5 |
| 4. | U17VEP5505 | Human Excellence-Social Values | Lab | HS | 5 |
| 5. | U17VEP6506 | Human Excellence-National Values | Lab | HS | 6 |
| 6. | U17VEP7507 | Human Excellence-Global Values | Lab | HS | 7 |

**U17INT5000**

**CONSTITUTION OF INDIA**
**(Mandatory course)**

| L | T | P | J | C |
|---|---|---|---|---|
| 2 | 0 | 0 | 0 | 0 |

**Course Outcomes:**
**After successful completion of this course, the students will be able to:**

**CO 1:** Gain Knowledge about the Constitutional Law of India
**CO 2:** Understand the Fundamental Rights and Duties of a citizen
**CO 3:** Apply the concept of Federal structure of Indian Government
**CO 4:** Analyze the Amendments and Emergency provisions in the Constitution
**CO 5:** Develop a holistic approach in their life as a Citizen of India

**Pre-requisites :NIL**

**CO/PO Mapping**
(S/M/W indicates strength of correlation) S-Strong, M-Medium, W-Weak

| COs | ProgrammeOutcomes(POs) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
| CO1 | | | | | | M | | | W | | | S |
| CO2 | | | | | | S | | S | | | | M |
| CO3 | | | | | | | | | M | S | | W |
| CO4 | | | | | | | | W | M | | | M |
| CO5 | | | | | | M | | M | | | | S |
| CO6 | | | | | | | | | | | | |

**Course Assessment methods**

| **Direct** |
|---|
| 1. Group Activity / Quiz/ Debate / Case studies<br>2. Class test / Assignment |
| **Indirect** |
| Surveys |

**THEORY COMPONENT:**

**Module.1: Introduction to Indian Constitution** **4 hours**

Meaning of the constitution law and constitutionalism - Historical perspective of the Constitutic and characteristics of the Constitution of India

**Module.2:Fundamental Rights** **8 hours**

Scheme of the fundamental rights - Right to Equality - Fundamen al Right under Article-19 - Scope of the Right to Life and Liberty - Fundamental Duties and its legal status - Directive Principles of State Policy – Its importance and implementation

**Module.3:Federal Structure** **8 hours**

Federal structure and distribution of legislative and financial powers between the Union and the States - Parliamentary Form of Government in India - The constitutional powers and status of the President of India

**Module.4:Amendment to Constitution** **6 hours**

Amendment of the Constitutional Powers and Procedure - The historical perspectives of the constitutional amendments in India

**Module.5:Emergency Provisions** **4 hours**

National Emergency, President Rule, Financial Emergency Local Self Government – Constitutional Scheme in India

**Theory: 30** **Tutorial: 0** **Practical: 0** **Project: 0** **Total: 30 hours**

**REFERENCES**


1.**Constitution of India - Ministry of Law & Justice** – PDF format
awmin.nic.in/coi/coiason29july08.pdf

**2. Introduction to the Constitution of India by DurgadasBasu**

3. The Constitution of India - Google free material -
www.constitution.org/cons/india/const.html

4. **Parliament of India** – PDF format
*download.nos.org/srsec317newE/317EL11.pdf*

5. The Role of the President of India – By Prof.Balkrishna

6. Local Government in India – E Book - **Pradeep Sachdeva**
https://books.google.com/books/.../Local_Government_in_In...

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**Department of Textile Technology**

**AY: 2017-18** **Date: 11.04.2018**

**Action taken report -Teacher Feedback**

| S.No | Analysis | Action taken report |
|---|---|---|
| 1. | Entrepreneur development related course can be introduced in elective | Introduced in syllabus:<br>Course code; U17TXE0012<br>Course Name: Entrepreneurship Development in Textiles |
| 2. | Nano material related course can be introduced elective | Introduced in syllabus:<br>Course code: U17TXE0008<br>Course Name: Nano and smart materials in Textiles |

Approved By,

Dr.Bharadhi Dhurai

BoS Chair person

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**Department of Textile Technology**

**AY: 2017-18** **Date: 11.04.2018**

## Action taken report -Teacher Feedback

| S.No | Analysis | Action taken report |
|---|---|---|
| 1. | Entrepreneur development related course can be introduced in elective | Introduced in syllabus:<br>Course code; U17TXE0012<br>Course Name: Entrepreneurship Development in Textiles |
| 2. | Nano material related course can be introduced elective | Introduced in syllabus:<br>Course code: U17TXE0008<br>Course Name: Nano and smart materials in Textiles |

Proof
Introduced in syllabus:
Course code; U17TXE0012
Course Name: Entrepreneurship Development in Textiles



**U17TXE0012 ENTREPRENEURSHIP DEVELOPMENT IN TEXTILES**

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

**Course Outcomes (COs)**

After successful completion of this course, the students should be able to

**CO1:** Develop knowledge on Entrepreneurship development skills.
**CO2:** Develop skills on production management.
**CO3:** Equip with the knowledge of marketing skills placement in both
**CO4:** Develop knowledge to setting up a garment unit.
**CO5:** Have knowledge of contemporary issues and modern practices.
**CO6:** Understand the export scenario in textile sector.

**CO-POs & PSOs Mapping**
(S/M/W indicates strength of correlation) S-Strong, M-Medium, W-Weak

| COs | Programme Outcomes (POs) & Programme Specific Outcomes (PSOs) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PO 1 | PO 2 | PO 3 | PO 4 | PO 5 | PO 6 | PO 7 | PO 8 | PO 9 | PO 10 | PO 11 | PO 12 | PSO1 | PSO2 |
| CO1 | M | S | S | | | | | | | M | | | | |
| CO2 | M | S | S | | M | | | | | M | | | M | |
| CO3 | M | S | S | | | | | | | | | | | |
| CO4 | | S | | S | | | | | | | | | | M |
| CO5 | M | M | M | | | | | | | | | | | |

**Course Assessment methods**

| Direct | Indirect |
|---|---|
| 1. Internal test I<br>2. Internal test II<br>3. Assignment/ Seminar/ Tutorial<br>4. End Semester Examination | 1. Course end survey |

**Entrepreneurship** **9 Hours**

Entrepreneurship development skills – concept of small scale industry – advantages of SSI units. Classification of Garment Units: Woven – knitted – lingerie – Leather garment – sports wear – outer wear –under garments – hospital wear. Costing: Garment cost elements – cost calculations (numerical problems).

**Setting up a Garment unit** **9 Hours**

Study of land – Norms of SA-8000 – capital – labour – market demand – preparing a project – large scale industry – advantages over SSI – Bank assistance.

**Production Management** **9 Hours**

Production planning and control – production systems – material flow control – optimization of work place arrangement for higher productivity

**Labour Laws** Labour – Study of labour laws – factory act – labour laws – welfare measures – safety act.

Dr.J.Srinivasan
Signature of BOS chairman, TXT

**Marketing** **9 Hours**

Market – study of markets for raw materials and markets for finishing products – local markets – international markets. Spring /summer – Autumn /winter seasons.

**Export Scenario** **9 Hours**

Exports policy – trade documentation and quota policy – AEPC and its role in the garments industry. Advertising – different media – trade fare – display – exhibition – buyer – seller meet.

| **Theory: 45 Hours** | **Total: 45 Hours** |
|---|---|

**REFERENCES**


1. R. K. Sharma, *Development Banks and Entrepreneurship Promotion in India*, Mittal Publications, New Delhi, 2001.
2. O. P. Khanna, *Industrial Engineering and Management*, Dhanpat Rai Publications (p) Ltd., New Delhi, 1999.
3. Ruth E Glock, Grace I Kunz, *Apparel Manufacturing – Sewn Product Analysis – 3rd Edition*, Prentice Hall Inc., 2000.
4. Jacob Solinger, *Apparel Manufacturing Handbook – Analysis Principles and Practice*, Bobbin Blenheim Media Corp; 2nd edition (December 1988).


Dr.J.Srinivasan

Signature of BOS chairman, TXT

Introduced in syllabus:
Course code: U17TXE0008
Course Name: Nano and smart materials in Textiles



**U17TXE0008 NANO AND SMART MATERIALS IN TEXTILES**

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

**Course outcomes (COs)**

After successful completion of this course, the students should be able to

**CO1:** Understand the principle of electro spinning.
**CO2:** Understand the Nano particle preparation and characterization.
**CO3:** Understand the Smart technology for textiles and clothing.
**CO4:** Understand the applications of intelligent polymers in biomedical
**CO5:** Understand the Current and future trends for wearable technology.
**CO6:** Develop Nano and smart materials in Textiles.

**CO-POs & PSOs Mapping**
(S/M/W indicates strength of correlation)S-Strong, M-Medium, W-Weak

| COs | Programme Outcomes (POs) & Programme Specific Outcomes (PSOs) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PO 1 | PO 2 | PO 3 | PO 4 | PO 5 | PO 6 | PO 7 | PO 8 | PO 9 | PO 10 | PO 11 | PO 12 | PSO 1 | PSO 2 |
| CO1 | M | M | | | | | | | | | | | | |
| CO2 | | M | | | | | | | | | | | | |
| CO3 | | | M | | W | | | | | | | | M | |
| CO4 | M | | | | | | W | | | | | | | |
| CO5 | | M | | | | | | | | | | | | |
| CO6 | | | | | | | | | | | W | | | |

**Course assessment Methods**

| Direct | Indirect |
|---|---|
| 1. Internal test I<br>2. Internal test II<br>3. Assignment/ Seminar/ Tutorial<br>4. End Semester Examination | 1. Course end survey |

**NANOFIBRE PRODUCTION:** **9 Hours**

Principle of electrospinning. Electrospinning of nano fibres – conditions, structure formation, properties, effect of process parameters upon fibre formation. Methods to produce continuous filaments. Electrospinning of polyamides and polyesters.

**NANOPARTICLES**: **9 Hours**

Preparation, characterization, and application of silver nanoparticles, Fe nanoparticles ZnO, TiO2, MgO, SiO2 & Al2O3 with PP or PE coating, Indium-tin oxide Nanoparticles, Ceramic Nano-Particles, Carbon black Nanoparticles, Clay nanoparticles, Cellulose Nanowhiskers and Nanoparticles. Self- assembled nanolayer films, Nano structuring of polymers with cyclo dextrins

**BASIC CONCEPTS OF SMART TEXTILES** **9 Hours**

Smart technology for textiles and clothing, Development of smart technology for textiles and clothing. Electrically active polymer materials-Polymer materials as actuators or artificial muscle, Peculiarity of polymer gel actuator, Triggers for actuating polymer gels, Electro-active polymer gels as artificial muscles.

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**INTELLIGENT TEXTILES** **9 Hours**

Tailor-made intelligent polymers for biomedical applications –Introduction, Fundamental aspects of shape memory materials, Concept of biodegradable SMP , Degradable thermoplastic elastomers having SM properties , Degradable polymer networks having SM properties.

**WEARABLE TECHNOLOGY** **9 Hours**

Current and future trends for wearable technology; Applications of wearable electronics and photonics; Implications of wearable technology; Electro active fabrics-Sensing fabrics, Actuating fabrics, Smart fabrics for health care, Smart fabrics for motion capture, Smart textiles as kinesthetic interfaces.

| **Theory 45 Hours** | **Total 45 Hours** |
|---|---|

**REFERENCES:**

1.Brown P J and Stevens K, "Nanofibres and Nanotechnology in Textiles", Woodhead Pub. Ltd., Cambridge, 2007.
2.Yury Gogotsi, "Nanotubes and Nanofibres", CRC Taylor & Francis, Boca Raton, 2006.
3.Guazhong Cao, "Nanostructure and Nanomaterials", Imperial College Press, USA, 2006.
4. Mick Wilson, Kamali Kannangara, Geoff Smith, Michelle Simons and Burkhard Raguse, "Nanotechnology- Basic Science and Emerging Technologies", Overseas Press, New Delhi, 2005.
5. X.M.Tao, —Smart Fibres, Fabrics and Clothing: Fundamentals and Applications‖, Woodhead Publishing Ltd., England, 2001.
6. Jinlian Hu, —Shape Memory Polymers and Textiles‖, 1st edition, CRC, USA, 2007.

Dr.J.Srinivasan

Signature of BOS chairman, TXT

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**Department of Automobile Engineering**

AY: 2017-18

Date: 11.04.2018

## Action taken report - Teachers Feedback

| S.No | Analysis | Action taken report |
|---|---|---|
| 1 | Automotive Engines and Systems (U17AUI4201):<br>Include Clutch and gearbox. | The topic is included in the syllabus. |
| 2 | Fluid Mechanics and Machinery (U17AUI4202):<br>Include fluid machinery module. | The topic is included in the syllabus. |

Prepared by,

BoS Coordinator

Approved by,

BoS Chairman

[illegible] Buckingham π theorem. Model analysis – Advantages and applications of model testing. Similitude, derivations of important dimensionless numbers, model laws.

**FLOW THROUGH PIPES** L: 9 Hrs

Laminar and turbulent flow characteristics, laminar flow through circular pipes – Hagen Poiseuille law, Turbulent flow – development of Darcy – Weisbach equation, major and minor losses in pipes. Flow through pipes in series and parallel.

**HYDRAULIC MACHINES** L: 6 Hrs

Hydraulic turbine: Classification, difference between impulse and reaction turbine. Construction and working of Pelton turbine, Francis turbine and Kaplan turbine.

Pumps: classification, difference between positive and non-positive displacement pumps. Construction and working of reciprocating pump and Centrifugal pump.

**Practical**

**List of Exercises :** P: 30 Hrs

1. Verification of Bernoulli's theorem
2. Determination of Darcy's friction factor
3. Determination of coefficient of discharge of Venturimeter
4. Determination of coefficient of discharge of Orificemeter
5. Determination of coefficient of discharge of notches
6. Determination of coefficient of discharge of mouthpiece Orifice
7. Performance study on centrifugal pump
8. Performance study on gear oil pump/Reciprocating Pump
9. Load test on Pelton wheel turbine
10. Load test on Francis turbine
11. Load test on Kaplan turbine

| Theory : 45 Hrs | Practical: 30 Hrs | Total Hours: 75 |
|---|---|---|

**References:**


1. "Fluid mechanics and hydraulic machines", R.K. Bansal, Laxmi Publications (P) Ltd. Tenth edition, 2018.
2. 'Hydraulics and Fluid Mechanics', Modi P.N. and Seth S.M., Standard Book House, New Delhi, 21 edition, 2018.
3. Robert W. Fox, Alan T. McDonald, Philip J. Pritchard, "Introduction to Fluid Mechanics", [illegible] 8th Edition, 2013

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**Department of Civil Engineering**

**AY: 2017-18** **11.04.2018**

**Action taken report -Faculty Feedback**

| S.No | Analysis | Action taken report |
|---|---|---|
| 1. | Online Teaching-Learning aids like Google Classroom/Moodle can be encouraged among faculty. | Google Classroom has been encouraged for course file maintenance and further deployed for Teaching-Learning process |
| 2. | Online MOOC courses can be given credit equivalence to promote self-learning. | Recommended for implementation in next regulation as per the approval from Academic Council. |
| 3. | Student publications must be encouraged. | Expenses for student publications are funded by the institute to encourage the research. |

Prepared by,

BoS Coordinator

Approved by,

BoS Chairman

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**KUMARAGURU COLLEGE OF TECHNOLOGY, COIMBATORE-641049**

**(An Autonomous Institution affiliated to Anna University, Chennai)**

**Action Taken Report - Faculty Feedback**

**Department of Electronics and Communication Engineering**

**Academic Year: 2017 – 2018**

**Date: 11.04.2018**

| S.No | Feedback | Action Taken |
|---|---|---|
| 1. | Courses in Communication domain to be increased | Revised and included all essential communication courses in the curriculum from Semester V onwards |
| 2. | Total number of credits may be reduced from 185. | Total number of credits has been reduced from 185 to 175 and approved by the 14th BoS panel members |
| 3. | Mandatory non-credit courses may be introduced to manage the reduction of credits. | Mandatory non-credit courses are introduced in R17 curriculum based on the approval of the 14th BoS panel members |
| 4. | New course structure to incorporate practical exposure has to be introduced. | New course structure is introduced as "Embedded/Integrated" course with a combination of Theory and Laboratory components to enhance the learning of students. |

Prepared By,

BoS Coordinator

Approved By,

BoS Chairman

Proof for Action Taken 1,2 & 4: Revised and included all essential communication courses in the curriculum from Semester V onwards
Total number of credits has been reduced from 185 to 175 and approved by the 14th BoS panel members
New course structure is introduced as "Embedded/Integrated" course with a combination of Theory and Laboratory components to enhance the learning of students.

**Name of the UG Programme: B.E. Electronics and Communication Engineering**

**Semester - 3**

| | Course Code | Course Title | Category | Contact Hours | Hrs/Week & Credits | | | | Pre-requisites |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | L | T | P | C | |
| **Theory** | | | | | | | | | |
| 1. | U15MAT302 | Linear Algebra and Numerical Methods | BS | 5 | 3 | 2 | 0 | 4 | |
| 2. | U15ECT301 | Analog Electronics | PC | 5 | 3 | 2 | 0 | 4 | U15ECT101 U15ECT202 |
| 3. | U15ECT302 | Digital System Design | PC | 5 | 3 | 2 | 0 | 4 | |
| 4. | U15EET312 | Electrical Machines and Measurements | ES | 3 | 3 | 0 | 0 | 3 | |
| 5. | U15EST001 | Environmental Science for Circuit Engineering | HS | 3 | 3 | 0 | 0 | 3 | |
| 6. | U15ECIN10 | Object Oriented Programming | ES | 2 | 1 | 0 | 1 | 1 | |
| **Practicals** | | | | | | | | | |
| 7. | U15ECP301 | Analog Electronics Laboratory | PC | 2 | 0 | 0 | 2 | 1 | U15ECT101 U15ECT202 |
| 8. | U15EEP312 | Electrical Machines Laboratory | ES | 2 | 0 | 0 | 2 | 1 | |
| 9. | U15GHP301 | Family Values | HS | 1 | 1 | 0 | 0 | 1 | |
| 10. | U15ECP302 | Project Lab | EEC | 2 | 0 | 0 | 2 | - | |
| **Total credits** | | | | | | | | **22** | |

**Semester – 4**

| | Course Code | Course Title | Category | Contact Hours | Hrs/Week & Credits | | | | Pre-requisites |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | L | T | P | C | |
| **Theory** | | | | | | | | | |
| 1. | U15ECT401 | Linear Integrated Circuits and Applications | PC | 3 | 3 | 0 | 0 | 3 | U15ECT301 |
| 2. | U15ECT402 | Microprocessors and Microcontrollers | PC | 3 | 3 | 0 | 0 | 3 | U15ECT302 |
| 3. | U15ECT403 | Signals and Systems | PC | 5 | 3 | 2 | 0 | 4 | |
| 4. | U15ECT404 | Electromagnetic Fields | PC | 3 | 3 | 0 | 0 | 3 | U15PHT101 U15MAT101 U15MAT201 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 5. | U15ITT410 | Data Structures using C | ES | 4 | 2 | 0 | 2 | 3 | |
| 6. | ET1* | PE | PE | 3 | 3 | 0 | 0 | 3 | |
| **. Practicals** | | | | | | | | | |
| 7. | U15ECP401 | Linear and Digital Integrated Circuits Laboratory | PC | 4 | 0 | 0 | 4 | 2 | U15ECT301 U15ECT302 |
| 8. | U15ECP402 | Microprocessors and Microcontrollers Laboratory | PC | 2 | 0 | 0 | 2 | 1 | |
| 9. | U15GHP 401 | Professional Values | HS | 1 | 1 | 0 | 0 | 1 | |
| **Total credits** | | | | | | | | **23** | |

## Semester – 5

| | Course Code | Course Title | Category | Contact Hours | Hrs/Week & Credits | | | | Pre-requisites |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | L | T | P | C | |
| **Theory** | | | | | | | | | |
| 1. | U15ECT501 | Control Systems | PC | 4 | 2 | 2 | 0 | 3 | |
| 2. | U15ECT502 | Digital Signal Processing | PC | 5 | 3 | 2 | 0 | 4 | U15ECT403 |
| 3. | U15ECT503 | Transmission Lines and Waveguides | PC | 5 | 3 | 2 | 0 | 4 | U15ECT404 |
| 4. | U15ECT504 | Communication Engineering | PC | 4 | 2 | 2 | 0 | 3 | U15ECT403 |
| 5. | U15GST006 | Product Design and Development | EEC | 3 | 3 | 0 | 0 | 3 | |
| 6. | ET2* | OE | OE | 3 | 3 | 0 | 0 | 3 | |
| **. Practicals** | | | | | | | | | |
| 7. | U15ECP501 | Analog Communication Laboratory | PC | 2 | 0 | 0 | 2 | 1 | U15ECP301 |
| 8. | U15ECP502 | Digital Signal Processing Laboratory | PC | 2 | 0 | 0 | 2 | 1 | U15ECT403 |
| 9. | U15ENP501 | Communication skills Laboratory | EEC | 2 | 0 | 0 | 2 | 1 | U15ENT101 U15ENP201 |
| 10. | U15GHP501 | Social Values | HS | 1 | 1 | 0 | 0 | 1 | |
| **Total credits** | | | | | | | | **24** | |

| Semester – 6 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Course Code | Course Title | Category | Contact Hours | Hrs/Week & Credits | | | | Pre-requisites |
| | | | | | L | T | P | C | |
| **Theory** | | | | | | | | | |
| 1. | U15ECT601 | Digital Communication | PC | 5 | 3 | 2 | 0 | 4 | U15ECT502 U15ECT504 |
| 2. | U15ECT602 | Embedded systems | PC | 3 | 3 | 0 | 0 | 3 | U15ECT402 |
| 3. | U15ECT603 | VLSI design | PC | 3 | 3 | 0 | 0 | 3 | U15ECT101 U15ECT302 |
| 4. | U15ECT604 | Antennas and Wave Propagation | PC | 3 | 3 | 0 | 0 | 3 | U15ECT404 |
| 5. | U15ECT605 | Computer Networks | PC | 3 | 3 | 0 | 0 | 3 | |
| 6. | ET3* | OE | OE | 3 | 3 | 0 | 0 | 3 | |
| **Practicals** | | | | | | | | | |
| 7. | U15ECP601 | Digital Communication and Networks Laboratory | PC | 4 | 0 | 0 | 4 | 2 | U15ECP501 |
| 8. | U15ECP602 | Embedded systems Laboratory | PC | 2 | 0 | 0 | 2 | 1 | U15ECP402 |
| 9. | UI5ECP603 | Industrial Training (Minimum 2 weeks)# | EEC | - | 0 | 0 | 0 | 1 | |
| 10. | U15GHP601 | National Values | HS | 1 | 1 | 0 | 0 | 1 | |
| **Total credits** | | | | | | | | **24** | |

# The students should undergo Industrial training (after due approval from the Department Committee / HoD) for a period as specified in the curriculum during winter vacation at the end of 5th semester and assessment will be done during the 6th semester. In this case the training has to be undergone continuously for the entire period in one organization only. The students may undergo training at a Research Organization for the period prescribed in the curriculum in lieu of Industrial training. However, the number of credits earned will be as prescribed in the curriculum. The Industrial / Practical Training shall carry 100 marks and shall be evaluated through continuous assessment only. At the end of Industrial training, the student shall submit a brief report on the training undergone and a certificate from the organization concerned. The evaluation will be made based on this report and a Viva-Voce Examination, conducted internally by a three member Departmental Committee constituted by the Head of the Department. Certificates (issued by the Organization) submitted by the student shall be attached to the mark list and sent to Controller of Examinations by the Head of the Department.

| Semester – 7 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Course Code | Course Title | Category | Contact Hours | Hrs/Week & Credits | | | | Pre-requisites |
| | | | | | L | T | P | C | |
| **Theory** | | | | | | | | | |
| 1. | U15ECT701 | Microwave Engineering | PC | 3 | 3 | 0 | 0 | 3 | U15ECT604 |
| 2. | U15ECT702 | Optical Communuication | PC | 3 | 3 | 0 | 0 | 3 | |
| 3. | U15ECT703 | Wireless Communication | PC | 3 | 3 | 0 | 0 | 3 | U15ECT601 |
| 4. | U15GST005 | Engineering Economics and Financial Management | HS | 3 | 3 | 0 | 0 | 3 | |
| 5. | ET4* | OE | OE | 3 | 3 | 0 | 0 | 3 | |
| **Practicals** | | | | | | | | | |
| 6. | U15ECP701 | VLSI Laboratory | PC | 2 | 0 | 0 | 2 | 1 | U15ECT302 U15ECT603 |
| 7. | U15ECP702 | Microwave and optical Laboratory | PC | 2 | 0 | 0 | 2 | 1 | |
| 8. | U15ECP703 | Project work Phase I | EEC | 2 | 0 | 0 | 4 | 2 | |
| 10. | U15GHP701 | Global Values | HS | 2 | 1 | 0 | 0 | 1 | |
| **Total credits** | | | | | | | | **20** | |

## The student has to undergo a comprehensive assessment based on the courses of study he has undergone up to the 7th semester. The assessment will be based on an online examination for 100 marks with negative marks for wrong answers.

| Semester – 8 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Course Code | Course Title | Category | Contact Hours | Hrs/Week & Credits | | | | Pre-requisites |
| | | | | | L | T | P | C | |
| **Theory** | | | | | | | | | |
| 1. | ET5* | PE | PE | 3 | 3 | 0 | 0 | 3 | |
| 2. | ET6* | PE | PE | 3 | 3 | 0 | 0 | 3 | |
| 3. | ET7* | PE | PE | 3 | 3 | 0 | 0 | 3 | |
| **Practicals** | | | | | | | | | |
| 3. | U15ECP801 | Project work Phase II | EEC | 20 | 0 | 0 | 20 | 10 | |
| **Total credits** | | | | | | | | **19** | |

* Elective

Proof for Action Taken 3: Mandatory non-credit courses are introduced in R17 curriculum based on the approval of the 14th BoS panel members



| List of mandatory courses | | | | | |
|---|---|---|---|---|---|
| **S.No** | **Course Code** | **Course Title** | **Course Mode** | **CT** | **Sem** |
| 1 | U17VEP3503 | Human Excellence-Family Values | Lab | HS | 3 |
| 2 | U17CHT3000 | Environmental Science and Engineering | Theory | MC | 3 |
| 3 | U17VEP4504 | Human Excellence-Professional Values | Lab | HS | 4 |
| 4 | U17INT4000 | Constitution of India | Theory | MC | 4 |
| 5 | U17VEP5505 | Human Excellence-Social Values | Lab | HS | 5 |
| 6 | U17VEP6506 | Human Excellence-National Values | Lab | HS | 6 |
| 7 | U17VEP7507 | Human Excellence-Global Values | Lab | HS | 7 |

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# KUMARAGURU COLLEGE OF TECHNOLOGY

## COIMBATORE – 641 049

## REGULATIONS 2017

## B.E. ELECTRONICS AND COMMUNICAITON ENGINEERING

## CURRICULUM

| Semester III | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| S.No | Course code | Course Title | Course Mode | CT | L | T | P | J | C | Pre-requisite |
| 1 | U17ECT3101 | Signals and Systems | Theory | BS | 3 | 1 | 0 | 0 | 4 | - |
| 2 | U17ECI3202 | Analog Electronic Circuits | Embedded - Theory & Lab | PC | 3 | 0 | 2 | 0 | 4 | U17ECT2002 |
| 3 | U17ECI3203 | Digital System Design | Embedded - Theory & Lab | PC | 3 | 0 | 2 | 0 | 4 | - |
| 4 | U17ECT3004 | Electro Magnetic Fields | Theory | PC | 3 | 0 | 0 | 0 | 3 | - |
| 5 | U17ECT3005 | Linear Integrated Circuits | Theory | PC | 3 | 0 | 0 | 0 | 3 | - |
| 6 | U17INI3600 | Engineering Clinic 1 | Practical & Project | ES | 0 | 0 | 4 | 2 | 3 | - |
| | | | | | | | | Total Credits | 21 | |
| | | | | | | | | Total Contact Hours/week | 26 | |

| Semester IV | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| S.No | Course code | Course Title | Course Mode | CT | L | T | P | J | C | Pre-requisite |
| 1 | U17ECI4201 | Digital Signal Processing | Embedded - Theory & Lab | PC | 3 | 0 | 2 | 0 | 4 | U17ECT3101 |
| 2 | U17ECI4202 | Microprocessors and Microcontrollers | Embedded - Theory & Lab | PC | 3 | 0 | 2 | 0 | 4 | U17ECI3203 |
| 3 | U17MAT4103 | Probability and Random Processes | Theory | BS | 3 | 1 | 0 | 0 | 4 | - |
| 4 | U17ECT4104 | Transmission Lines and Waveguides | Theory | PC | 3 | 1 | 0 | 0 | 4 | U17ECT3004 |
| 5 | U17INI4600 | Engineering Clinic 2 | Practical & Project | ES | 0 | 0 | 4 | 2 | 3 | U17INI3600 |
| 6 | U17..... | Open Elective I | Theory | OE | 3 | 0 | 0 | 0 | 3 | - |
| | | | | | | | | Total Credits | 22 | |
| | | | | | | | | Total Contact Hours/week | 27 | |

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| Semester V | | | | | | | | | | Pre-requisite |
|---|---|---|---|---|---|---|---|---|---|---|
| S.No | Course code | Course Title | Course Mode | CT | L | T | P | J | C | |
| 1 | U17ECI5201 | Communication Engineering- I | Embedded - Theory & Lab | PC | 3 | 0 | 2 | 0 | 4 | U17ECT3101 |
| 2 | U17ECI5202 | VLSI and HDL Programming | Embedded - Theory & Lab | PC | 3 | 0 | 2 | 0 | 4 | U17ECI3203 |
| 3 | U17ECI5203 | Communication Networks | Embedded - Theory & Lab | PC | 3 | 0 | 2 | 0 | 4 | - |
| 4 | U17ECT5004 | Control Systems | Theory | PC | 3 | 0 | 0 | 0 | 3 | - |
| 5 | U17ECT5005 | Antenna and wave propagation | Theory | PC | 3 | 0 | 0 | 0 | 3 | U17ECT4104 |
| 6 | U17INI5600 | Engineering Clinic 3 | Practical & Project | ES | 0 | 0 | 4 | 2 | 3 | U17INI4600 |
| | | | | | | | | **Total Credits** | 21 | |
| | | | | | | | | **Total Contact Hours/week** | 27 | |

| Semester VI | | | | | | | | | | Pre-requisite |
|---|---|---|---|---|---|---|---|---|---|---|
| S.No | Course code | Course Title | Course Mode | CT | L | T | P | J | C | |
| 1 | U17ECI6201 | Communication Engineering- II | Embedded - Theory & Lab | PC | 3 | 0 | 2 | 0 | 4 | U17ECI5201 |
| 2 | U17ECI6202 | RF and Microwave Engineering | Embedded - Theory & Lab | PC | 3 | 0 | 2 | 0 | 4 | U17ECT4103 |
| 3 | U17INI6600 | Engineering Clinic 4 | Practical & Project | ES | 0 | 0 | 4 | 2 | 3 | U17INI5600 |
| 4 | U17..... | Open Elective II | Theory | OE | 3 | 0 | 0 | 0 | 3 | - |
| 5 | U17ECE.... | Professional Elective I | Theory | PE | 3 | 0 | 0 | 0 | 3 | - |
| 6 | U17ECE.... | Professional Elective II | Theory | PE | 3 | 0 | 0 | 0 | 3 | - |
| | | | | | | | | **Total Credits** | 20 | |
| | | | | | | | | **Total Contact Hours/week** | 25 | |

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| Semester VII | | | | | | | | | | Pre-requisite |
|---|---|---|---|---|---|---|---|---|---|---|
| S.No | Course code | Course Title | Course Mode | CT | L | T | P | J | C | |
| 1 | U17ECP7701 | Project Phase I | Project only Course | PW | 0 | 0 | 0 | 6 | 3 | - |
| 2 | U17ECT7002 | Wireless Communication | Theory | PC | 3 | 0 | 0 | 0 | 3 | U17ECI6201 |
| 3 | U17ECI7203 | Optical Communication | Embedded - Theory & Lab | PC | 3 | 0 | 2 | 0 | 4 | - |
| 4 | U17ECE... | Professional Elective III | Theory | PE | 3 | 0 | 0 | 0 | 3 | - |
| 5 | U17ECE... | Professional Elective IV | Theory | PE | 3 | 0 | 0 | 0 | 3 | - |
| 6 | U17INT7000 | Professional Communication & Analytical Reasoning | Theory | HS | 3 | 0 | 0 | 0 | 3 | - |
| | | | | | | | | Total Credits | 19 | |
| | | | | | | | | Total Contact Hours/week | 23 | |

| Semester VIII | | | | | | | | | | Pre-requisite |
|---|---|---|---|---|---|---|---|---|---|---|
| S.No | Course code | Course Title | Course Mode | CT | L | T | P | J | C | |
| 1 | U17ECP8701 | Project Phase II | Project only Course | PW | 0 | 0 | 0 | 24 | 12 | - |
| | | | | | | | | Total Credits | 12 | |
| | | | | | | | | Total Contact Hours/week | 24 | |

| | |
|---|---|
| Total Credits | 160 |

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**Department of Electronics & Instrumentation Engineering**

**AY: 2017-18** 11.04.2018

## Action taken report - Teachers Feedback

| S.No | Analysis | Action taken report |
|---|---|---|
| 1. | Course plan format needs to be updated. | Course plan Format is prepared and discussed to all faculty. |
| 2. | To improve the Quality of Question paper for all courses. | Internal Question paper should contain Higher order thinking Questions (HOTS) |
| 3. | To include the word 'Modern Andragogical approach' in the mission statement | Included the word in the mission statement |

Prepared by

V. Mani

V. Mainekalai

BoS Coordinator

Approved by

BoS Chairman

# KUMARAGURU COLLEGE OF TECHNOLOGY

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## COURSE PLAN

| COURSE PLAN | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PROGERAMME | B.E. | UG | ☐ | Semester: | VIII | Batch | 2014-2016 | Academic Year | 2017-2018 | | |
| | | PG | ☐ | Specialization | | | | | | | |
| Faculty Name | V.Manimekalai | | | Designation | Assistant Professor | Department | E&I | | | | |
| Course Code | U14EITE11 | Course Name | | Power Electronics | | Office Hours: | | | | | |
| Office Hours | Slot -1 | 8.30-4.30 | | | Slot -2 | | | | | | |
| Office Hours exclusively allotted to the students for query, clear doubts ….Fix the time and during this time make yourself available | | | | | | | | | | | |
| Course Credits | | L | 3 | T | 0 | P | 0 | J | 0 | C | 3 |
| L – Lecture, T – Tutorials, P- Practical, J-Project, C –Credits ( Total Credits) | | | | | | | | | | | |
| Pre-requisites | | | | | | | | | | | |
| Contribution of Course to Meeting the Professional Component | | | | | | | | | | | |
| College-level mathematics and basic science | | | | | | | | | | | |
| Engineering topics | 3 credits | | | | | | | | | | |
| General education | | | | | | | | | | | |
| Resources | | | | | | | | | | | |
| Other resources used (e.g. e-Learning, field visits, periodicals, software, etc.) | — | | | | | | | | | | |
| Course description (from the catalog) | Discuss the various types of power electronic systems used, various semiconductor devices and applications | | | | | | | | | | |

Proof for ATR Point No 1

# KUMARAGURU COLLEGE OF TECHNOLOGY

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## COURSE PLAN

| | |
|---|---|
| **Project Description(if any*)** | ---. |
| **Text Book(s)& Reference Book(s)** | **1. Muhammad H. Rashid, 'Power Electronics: Circuits, Devices and Applications', Prentice Hall of India/Pearson Education, Third edition, 2004.**<br>**2. Bimbhra. P.S. 'Power Electronics', Khanna Publishers, 2004.**<br>**3. Ned Mohan, Tore.M.Undeland, William.P.Robbins, 'Power Electronics: Converters, applications and design', John Wiley and sons, third edition, 2003.**<br>**4. Cyril.W.Lander, 'Power Electronics', McGraw Hill International, Third edition, 2001.**<br>**5. Bimal K. Bose, 'Modern Power Electronics and AC Drives', Pearson Education, 2003.** |

**CO Mapping**

| Course Outcome (CO) | | Program Outcome(PO) and Program Specific Outcome(PSO) (S/M/W indicates strength of correlation) 3-Strong, 2-Medium, 1-Weak | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | *Mapping to POs* | | | | | | | | | | | | *Mapping to PSOs* | | |
| S. No. | *COs* | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 | PSO3 |
| 1 | Design and simulate converters and inverters according to the | | S | | | S | | | | | | | | | | |
| 2 | Describe the behavior of semiconductor devices. | S | | | | | | | | | | | | | | |
| 3 | Explain the working of AC to DC, DC to DC, DC to AC | | | | S | | | | | | | | | | | |

# KUMARAGURU COLLEGE OF TECHNOLOGY

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## COURSE PLAN

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | Discuss the applications of power electronic systems. | | | | | | | M | | | | | | | | |
| 5 | Identify the type of power electronic converters to be used | | | | M | | | | | | | | | | | |
| **Limit PSOs maximum of 3** | | | | | | | | | | | | | | | | |

**Course Outcomes (COs) Assessment Table**

| COs | Knowledge Level | Assessment tools | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Internal test | | End Semester Exam | Assignments | | Quizzes | | | | Any other Components |
| | | 1 | 2 | | 1 | 2 | 1 | 2 | 3 | 4 | |
| CO1 | **K2** | 7 | | 10 | 10 | | | | | | |
| CO2 | **K3** | 8 | | 10 | | | | | | | |
| CO3 | **K3** | | 8 | 10 | | | | | | | |
| CO4 | **K4** | | 2 | 10 | | | | | | | |
| CO5 | **K1** | | 5 | 10 | | 10 | | | | | |
| **Total (100)** | | **15** | **15** | **50** | **20** | | | | | | |
| **NOTE : *any combination of these marks should not exceed 20** | | | | | | | | | | | |

| *Unit/topi* | *Week* | *Date* | *Topics Covered (e.g. chapter/section title)* | *COs* | *Methodology* | *Readings (Book/ Articles/Videos)* | *Assessment* |
|---|---|---|---|---|---|---|---|
| | 1 | 03/01/2018 | Structure, operation and characteristics of SCR | CO1 | *Board and Chalk* | *BOOK* | *Internal test* |

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## COURSE PLAN

| Unit/topi | Week | Date | Topics Covered (e.g. chapter/section title) | COs | Methodology | Readings (Book/ Articles/Videos) | Assessment |
|---|---|---|---|---|---|---|---|
| | 2 | 04/01/2018 | Structure, operation and characteristics of SCR | CO1 | *Board and Chalk* | *BOOK* | *Internal test* |
| | 3 | 05/01/2018 | TRIAC, power BJT | CO1 | *Board and Chalk* | *BOOK* | *Internal test* |
| | 4 | 08/01/2018 | MOSFET and IGBT | CO1 | *Board and Chalk* | *BOOK* | *Internal test* |
| | 5 | 09/01/2018 | Driver and snubber circuits for MOSFET | CO1 | *Board and Chalk* | *BOOK* | *Internal test* |
| | 6 | 10/01/2018 | Turn-on and turn-off characteristics and switching | CO1 | *Board and Chalk* | *BOOK* | *Internal test* |
| | 7 | 11/01/2018 | 2-pulse; 3-pulse; | CO2 | *Board and Chalk* | *BOOK* | *Internal test* |
| | 8 | 17/01/2018 | 6-pulse converters | CO2 | *Board and Chalk* | *BOOK* | *Internal test* |
| | 9 | 20/01/2018 | Inverter operation of fully controlled converter - Effect of source inductance on | CO2 | *Board and Chalk* | *BOOK* | *Internal test* |
| | 10 | 22/01/2018 | Distortion and displacement | CO2 | *Board and Chalk* | *BOOK* | *Internal test* |
| | 11 | 23/01/2018 | Step-down and step-up choppers | CO3 | *Board and Chalk* | *BOOK* | *Internal test* |
| | 12 | 24/01/2018 | Time ratio control and current | CO3 | *Board and Chalk* | *BOOK* | *Internal test* |
| | 15 | 25/01/2018 | Switching mode regulators - Buck, boost, | CO3 | *Board and Chalk* | *BOOK* | *Internal test* |
| | 16 | 29/01/2018 | buck-boost and Cuk converter | CO3 | *Board and Chalk* | *BOOK* | *Internal test* |
| | 17 | 30/01/2018 | Resonant switching based SMPS | CO3 | *Board and Chalk* | *BOOK* | *Internal test* |

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## COURSE PLAN

| Unit/topi | Week | Date | Topics Covered (e.g. chapter/section title) | COs | Methodology | Readings (Book/ Articles/Videos) | Assessment |
|---|---|---|---|---|---|---|---|
| | 18 | 31/01/2018 | Single phase and three phase (both 1200 mode and 1800 mode) inverters | CO4 | *Board and Chalk* | *BOOK* | *Internal test* |
| | 19 | 01/01/2018 | PWM techniques: Sinusoidal PWM, modified sinusoidal | CO4 | *Board and Chalk* | *BOOK* | *Internal test* |
| | 20 | 02/01/2018 | Voltage and harmonic control. Series resonant inverters and current source inverters. | CO4 | *Board and Chalk* | *BOOK* | *Internal test* |
| | 21 | 05/01/2018 | UPS, FACTS and HVDC | CO5 | *Board and Chalk* | *BOOK* | *Internal test* |
| | 22 | 06/01/2018 | Shunt and series static VAR | CO5 | *Board and Chalk* | *BOOK* | *Internal test* |
| ***End Semester Examination*** | | | | | | | |
| ***Methodology*** - Discussion, Lecture, Self-learning, Peer Learning etc... | | | | | | | |

**Prepared by V.Manimekalai**
**(Name & Signature)**
**Date: 6.4.2018**

Proof for ATR point No. 2

Roll No: _____

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B

GENERAL INSTRUCTIONS TO THE CANDIDATES

# INTERNAL TEST - II

1. Candidates are instructed to answer the questions as per Bloom's Taxonomy knowledge level ($K_1$ to $K_6$)
2. Candidates are strictly instructed not to write anything in the question paper other than their roll number.
3. Candidates should search their pockets, desks and benches and handover to the Hall Superintendent/ Invigilator if any paper, book or note which they may find therein as soon as they enter the examination hall.
4. Candidates are not permitted to bring electronic watches with memory, laptop computers, personal systems, walkie-talkie sets, paging devices, mobile phones, cameras, recording systems or any other gadget / device /object that would be of unfair assistance to him / her.
5. Corrective measures as per KCT examination policies will be imposed for malpractice in the hall like copying from any papers, books or notes and attempting to elicit the answer from neighbours.

The course outcomes that this test will assess are:

CO1: Design and simulate converters and inverters according to the specifications.
CO2: Describe the behavior of semiconductor devices.
CO3: Explain the working of AC to DC, DC to DC, DC to AC converters.
CO4: Discuss the applications of power electronic systems.
CO5: Identify the type of power electronic converters to be used in various applications.

| **Subject Code &Title :** | **U14EITE11- Power Electronics** | | |
|---|---|---|---|
| **Branch :** | **EIE** | **Semester :** | **VIII** |
| **Time :** | **2 hrs** | **Max Mark :** | **50** |

**Answer all the Questions**

**PART A (10 x 1 = 10 Marks)**

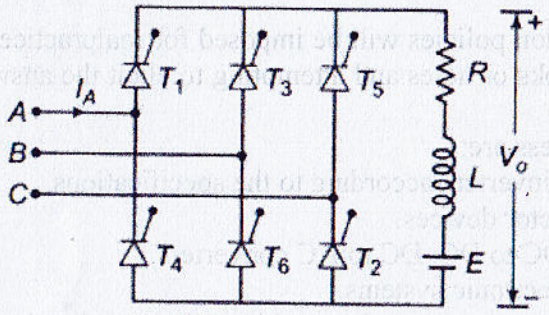
1. A chopper has Vs as the source voltage, R as the load resistance and α as the duty cycle. For this chopper, rms value of output voltage is (CO3-K2)

| | | | | |
|---|---|---|---|---|
| a) | αVs | b) | Vs/ |
| c) | $\sqrt{\alpha}$Vs | d) | $\sqrt{(1-\alpha)}$ Vs |

2. Match based on the (CO1-K2)

| LIST I | LIST II |
|---|---|
| A. Thyristor | 1. AC input to fixed DC output |

| | | | | |
|---|---|---|---|---|
| | B. BJT and MOSFET | | 2. Controlled turn on and uncontrolled turn off | |
| | C. Rectifiers | | 3. Controlled turn on and uncontrolled turn | |
| | D. Inverters | | 4. DC input to fixed AC output | |
| | a) | A-2,B-3,C-4,D-1 | b) | **A-2,B-3,C-1,D-4** |
| | c) | A-3,B-2,C-4,D-1 | d) | A-3,B-2,C-1,D-4 |
| 3. | In DC choppers, if T is chopping period, then output voltage can be controlled by PWM by (CO3-K2) (hots) | | | |
| | a) | Varying T,keeping Ton constant | b) | **Varying Ton, keeping T constant** |
| | c) | Varying T alone | d) | None |
| 4. | Give the direction of flow of current when T3 and T4 are triggered at 30° for the below circuit. (CO3-K3) (hots) | | | |



3-ϕ full wave converter

1. RLE
2. T3
3.T4
4. A
5.A

| | | | | |
|---|---|---|---|---|
| | a) | B-T3-RLE-T4-A | b) | **A-T3-RLE-T4-B** |
| | c) | B- RLE - T3-T4-A | d) | B- RLE –T4-T3-A |
| 5. | A Buck converter is switched at a frequency of 1Kz with a duty ratio of 0.5 and L= 200mH, calculate the peak to peak ripple of the load which is fed from 100V d.c voltage source. (CO4-K1) (hots) | | | |
| | a) | 0.25A | b) | **0.125A** |
| | c) | 1.25A | d) | 0.025A |
| 6. | The range of firing angle for a 3 phase, 3 pulse converter feeding a resistive load is (CO3-K2) (hots) | | | |

| | | | | |
|---|---|---|---|---|
| | a) | 30 to 180 | b) | 0 to 150 |
| | c) | **30 to 150** | d) | 0 to 180 |
| 7. | A 3 phase half wave converter has an average output voltage of 200V for 0° firing angle with resistive load. What is the load voltage for firing angle of 45° (CO3-K2)(hots) | | | |
| | a) | **145.3V** | b) | 136.5V |
| | c) | 150.2V | d) | 189.01V |
| 8. | Bulk power transmission over long HVDC lines are preferred on account of (CO4-K2) | | | |
| | a) | Low cost of HVDC terminals | b) | **Minimum line power losses** |
| | c) | No harmonic problems | d) | Simple protection |
| 9. | Assertion(A) : half controlled converter uses a mixture of diodes and thyristors<br>Reason (R): Semi converters have limited control over the level of dc output voltage. (CO2-K2) | | | |
| | a) | **A and B are true and B is the correct explanation for A** | b) | A is true B is false |
| | c) | A and B are true and B is not the correct explanation for A | d) | A and B are false |
| 10. | The stand by batteries in the UPS system is made up of (CO5-K3) | | | |
| | a | **Nickel cadmium and lead acid** | b | Hydrogen mixture |
| | c | Lead-cadmium and nickel acid | d | Lead- cadmium |

**PART B - [Not more than 40 words] (5 x 2 = 10 Marks)**

| | |
|---|---|
| 11. | Give some applications of step up and step down chopper. (CO3-K3) |
| 12. | What is the effect of source inductance over 3 phase full wave converter (CO2-K2) |
| 13. | Draw the block diagram of UPS system.(CO5-K2) |
| 14. | Mention the performance indices of single phase full wave converter.(CO2-K3) |
| 15. | What are the advantages of HVDC transmission over AC transmission? (CO5-K2) |

**PART C [Not more than 300 words] (3 x 10 = 30 Marks)**

**Answer any three Questions**

**(Question No. 16 is compulsory)**

| | |
|---|---|
| 16. | With necessary diagrams show how buck converter is used to regulate DC voltage supplied to RL load (CO3-K2) |
| 17. | Draw the circuit diagram of 3 phase half wave converter with R load and explain the ouput waveform for triggering angle $\alpha > 30°$ and $\alpha < 30°$.Derive the average and r.m.s load voltage value. |

| | |
|---|---|
| | (CO2-K2) (hots) |
| 18. | Explain the effect of source inductance over single phase full converter with a neat diagram. (CO2-K2) |
| 19. | Draw the circuit for step up and step down chopper and justify how it is used in battery powered systems.(CO3-K2) |

Proof for ATR point No.3

# Department of Electronics and Instrumentation Engineering

## VISION

The Department of Electronics and Instrumentation Engineering (EIE) envisions a holistic education that transforms the learners into responsible engineers which shall enable them to identify significant problems both in industry and society to arrive at creative and sustainable solutions through collaborative team efforts.

## MISSION

The Department of Electronics and Instrumentation Engineering (EIE) aims to

- Implement modern andragogical approach in academics, innovative research initiatives and collaborative projects that shall ethically address the societal needs.
- Develop knowledge and skills required to excel in manufacturing, automation and allied industries on a global platform.
- Expand the knowledge for higher studies and get inspired for lifelong learning.

## Program Educational Objectives (PEOs)

Graduates of B.E (Electronics and Instrumentation Engineering) will

| | |
|---|---|
| **PEO 1** | Excel in technical and professional career with core competence in automation. |
| **PEO 2** | Possess the passion for professional development by continuous learning in allied Engineering and Management fields. |
| **PEO 3** | Engage in resolving industrial and social issues using contemporary tools. |
| **PEO 4** | Exhibit professionalism and ethical attitude towards resolving automation issues to society at large. |

## Program Outcomes (POs)

| Graduates of B.E (Electronics and Instrumentation Engineering) will be able to: | | |
|---|---|---|
| **PO 1** | ***Engineering Knowledge*** | Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to solve complex engineering problems. |
| **PO 2** | ***Problem Analysis*** | Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences. |
| **PO 3** | ***Design / Development of Solutions*** | Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations. |
| **PO 4** | ***Conduct Investigations of Complex Problems*** | Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions. |
| **PO 5** | ***Modern Tool Usage*** | Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations. |
| **PO 6** | ***The Engineer and Society*** | Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice. |



BOS Chairman

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**Department of Fashion Technology**

**AY: 2017-18**

**Action taken report –Faculty Feedback**

Date : 11.04.2018

| S.No | Analysis | Action taken report |
|---|---|---|
| 1. | Knitting technology and weaving should be offered as separate courses to understand the concept better. | The courses U17FTT5003 knitting technology and U17FTT3001 weaving technology are offered as two different courses to know more about fabric properties. |
| 2. | The content related to garment fit should be introduced in the course clothing science. | Garment fit is added in the course U17FTE0005 clothing science for apparel engineering. |
| 3. | The combined courses pattern making and basic garment making should be separated | These courses are given as two separate courses such as U17FTT3003 pattern making and adaptation & U17FTI3204 Garment components fabrication |
| 4. | The nomenclature of the course advanced finishing technology should be changed to technology of apparel finishing. | The course name is changed as P18ATI2003 Technology of Apparel Finishing |

PreparedBy,

BoS Coordinator

Approved By,

BoS Chairman

Sl.No 1: Weaving technology and knitting technology is offered as separate courses.

| Semester III | | | | | | | | | | Pre-requisite |
|---|---|---|---|---|---|---|---|---|---|---|
| S.No | Course code | Course Title | Course Mode | CT | L | T | P | J | C | |
| 1 | U17EEI3206 | Basic Electrical and Electronics Engineering | Embedded-Theory& Lab | ES | 3 | 0 | 2 | 0 | 4 | Nil |
| 2 | U17FTT3001 | Weaving Technology | Theory | PC | 3 | 0 | 0 | 0 | 3 | Nil |
| 3 | U17FTI3202 | Concepts of Fashion and Design | Embedded - Theory & Lab | PC | 3 | 0 | 2 | 0 | 4 | Nil |
| 4 | U17FTT3003 | Pattern Making and Adaptation | Theory | PC | 3 | 0 | 0 | 0 | 3 | Nil |
| 5 | U17FTI3204 | Garment Components Fabrication | Embedded - Theory & Lab | PC | 3 | 0 | 2 | 0 | 4 | Nil |
| 6 | U17INI3600 | Engineering Clinic I | Project based course | ES | 0 | 0 | 4 | 2 | 3 | Nil |
| | | | | | | | | **Total Credits** | **21** | |
| | | | | | | | | **Total Contact Hours/week** | **27** | |

| Semester V | | | | | | | | | | Pre-requisite |
|---|---|---|---|---|---|---|---|---|---|---|
| S.No | Course code | Course Title | Course Mode | CT | L | T | P | J | C | |
| 1 | U17MAT5102 | Discrete Mathematics | Theory and Tutorial | BS | 3 | 1 | 0 | 0 | 4 | Nil |
| 2 | U17FTI5201 | Textile Chemical Processing | Embedded - Theory & Lab | PC | 3 | 0 | 2 | 0 | 4 | Nil |
| 3 | U17FTI5202 | Textile and Apparel Quality Evaluation | Embedded - Theory & Lab | PC | 3 | 0 | 2 | 0 | 4 | Nil |
| 4 | U17FTT5003 | Knitting Technology | Theory | PC | 3 | 0 | 0 | 0 | 3 | U17FTT1001 |
| 5 | U17FTP5504 | Apparel Production Lab | Lab | PC | 0 | 0 | 2 | 0 | 1 | U17FTI4202 |
| 6 | U17OE..... | Open Elective I | Theory | OE | 3 | 0 | 0 | 0 | 3 | Nil |
| 7 | U17INI5600 | Engineering Clinic III | Project based course | ES | 0 | 0 | 4 | 2 | 3 | Nil |
| 8 | U17FTP5505 | Industrial Training* | Industry | PC | 0 | 0 | 2 | 0 | 1 | NIL |
| | | | | | | | | **Total Credits** | **23** | |
| | | | | | | | | **Total Contact Hours/week** | **30** | |

*Industrial training to be undertaken during the 4th Semester summer vacation –Internal evaluation

## U17FTT3001 WEAVING TECHNOLOGY

**COURSE OUTCOMES**

**After successful completion of this course, the students should be able to:**

| | | |
|---|---|---|
| **CO1** | Acquaint with the objectives and acquire knowledge of working principles of machinery used for preparation of yarn for weaving | K2 |
| **CO2** | Describe the working principle of beam preparatory machines for weaving. | K2 |
| **CO3** | Acquire knowledge in the selection of sizing ingredients for different fibres. | K4 |
| **CO4** | Understand the objectives and working principles of shuttle and shuttleless looms | K2 |
| **CO5** | Develop knowledge in the selection of suitable preparatory processes for weaving | K4 |
| **CO6** | Acquire knowledge on parameters for quality control in the preparatory processes and weaving. | K2 |

**Pre Requisite:**

1. U17FTT1001 Fibre Science
2. U17FTT2001 Yarn Technology
3. U17FTP1501 Fibre Analytical Laboratory

**CO/PO Mapping**

(S/M/W indicates strength of correlation) S-Strong, M-Medium, W-Weak

| COs | Programme Outcomes(POs) | | | | | | | | | | | | PSOs | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
| CO1 | S | S | | | | | | | | | | | | |
| CO2 | S | S | | | | | | | | | | | | |
| CO3 | | S | | | | | | | | | | | M | W |
| CO4 | | S | | | | | | | | | | | W | M |
| CO5 | | S | S | | S | | | | | | | | M | M |

**Course Assessment methods**

| Direct | Indirect |
|---|---|
| 1. Internal tests<br>2. Assignment<br>3. Group Presentation<br>4. End Semester Exam | 1.Course Exit Survey |

**YARN PREPARATION FOR WEAVING** **9 Hours**

ProcessFlow–objectives of winding; principles of cheese and cone winding Machines; concepts in yarn clearing – mechanical, optical and electronic clearers; knotters and splicers; Yarn quality requirements for weaving.

**BEAM PREPARATION FOR WEAVING** **9 Hours**

Objectives of warping, material flow in beam warping and creels used in warping machines; sectional warping machines.

objectives of sizing; sizing materials and recipes used for different types of fibers; sizing machines; control systems used in sizing machine; sizing filament yarns; concept of single end sizing

**SHUTTLE WEAVING** **9 Hours**

Objectivesandworkingprinciples– primary, secondary and auxiliary motions; Types of looms – Handloom, Non-automatic, Semi-automatic and Automatic looms; Drop box looms; Terry loom, mechanisms of Tappet, Dobby and Jacquard weaving.

**SHUTTLELESS WEAVING** **9 Hours**

Basic principles of various shuttleless weaving machines – Projectile, Rapier, Air-jet, Water-jet, Multi-phase; productivity and techno-economics of these machines.

**PROCESS CONTROL IN WEAVING** **9 Hours**

Process and quality control measures in pirn winding, cone winding, beam warping, sectional warping, sizing, and weaving. Computerised fabric inspection, Loom data system.

**TOTAL: 45 Hours**

**REFERENCES**


1. AllanOrmerod,WalterS.Sondhelm,Weaving-TechnologyandOperations, TextileInstituteP ub., 1995.
2. LordP.R.andMohammed,Weaving:Conversionofyarntofabric, M.H. MerrowPub.CoLtd.,U.K.,1998.
3. Talukdar,Introductiontowindingandwarping,MahajanPub. (P)Ltd., 1998.
4. Talukdar, Wadekar and Ajgaonkar, Sizing–Materials, methods and machines, 2nd edition,Mahajan P ub. ( P)Ltd.,1998.
5. Gokarneshan N., Weaving Preparation Technology, Abhishek Pub., 2009
6. Talukdar, SriramuluandAjgaonkar, Weaving–Machines, Mechanisms,Management, MahajanPub. (P) Ltd.,1998


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

## U17FTT5003 KNITTING TECHNOLOGY

**Course Outcomes**

**After successful completion of this course, the students should be able to**

| | | |
|---|---|---|
| **CO1** | Recognize the weft knitted fabric production processes | K2 |
| **CO2** | Outline the structure and properties of various weft knitted fabrics | K3 |

| | | |
|---|---|---|
| **CO3** | Acquire know ledge on the structure and properties of various advanced weft knitted fabrics | K3 |
| **CO4** | Recognize the structure and properties and in warp knitting | K3 |
| **CO5** | Recognize the Latest developments in warp knitting | K3 |
| **CO6** | Acquire knowledge on the application of knitted structures for Technical Textiles | K3 |

**Pre Requisite:**

U17FTT2001 Yarn Technology

**CO/PO Mapping**

(S/M/W indicates strength of correlation) S-Strong, M-Medium, W-Weak

| COs | Programme Outcomes(POs) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PS01 | PS01 |
| CO1 | S | M | | | | | | | | | | | M | M |
| CO2 | S | M | | | | | | | | | | | M | M |
| CO3 | S | M | W | | | | | | | | | | M | M |
| CO4 | S | M | W | | | | | | | | | | M | M |
| CO5 | S | M | | | | | | | | | | | M | M |
| CO6 | S | M | | | | | | | | | | | | |

**Course Assessment methods:**

| Direct | Indirect |
|---|---|
| 1. Internal tests<br>2. Assignment<br>3. Group Presentation<br>4. End Semester Exam | 1.Course Exit Survey |

**PRINCIPLE OF WEFT KNITTING: 9 Hours**

Comparison of Weaving and Knitting and nonwoven-Terms anddefinitionsinweft knitting –Knitting elements-Needle sand its types,sinker, camKnitting action of latch, bearded and compound needles. –Working principle andpassage of Yarn in circular and Flat knitting machine -Classifications of knitting machines.- Comparison of Plain, circular rib,andinterlock fabrics and machines. - Yarn quality for knitting.-selection of weft knitted fabrics

**WEFT KNIT STRUCTURES: 9Hours**

Classificationof weft knit structures,-Symbolic and diagrammatic representation of weft knit structures.- Comparison of single jersey, rib and interlock and purl structures-comparison knit, tuck, float Stitches–unconventional stitches –Single jersey derivatives,

accordion, check and stripe effect.- Rib derivativesderbyribandSwiss rib, royal rib, polka rib- Rib gated structures Milano Rib,Doublepiqueand Pique poplin.- Knitted fabric Geometry Kc, Kw, Ks, R-knitted fabric defects-quality control

**ADVANCED WEFT KNIT STRUCTURES: 9 Hours**

Eight lockstructure, Interlock gated structures Singlepique, Ponte-di-Roma and Ottoman rib. - Derivatives of purl structure cross purl and basket purl - Blister fabrics – Introduction to Jacquard structures- socks knitting- flat bed knitting- weft knitting calculations for GSM and production- Latest developments in Weft knitting machines and fabrics, -Principles of seamless garment manufacture in circular and flat knitting- Application of weft knitted structures in technical textiles

**WARP KNITTING BASICS : 9 Hours**

Comparison of warp and weft knitting-basic warp knitting elements, knitting cycle-tricot, Rachel machines Comparison of tricot and Rachel Warp knitting –Basic stitches-pillar, blindlap,tricot, inlay, satin and atlas stitches.

**WARP KNIT STRUCTURES 9 Hours**

Fulltricot, lock knit and loop raised fabrics. Basic RaschelWarpKnit structures-power nets, curtains and laces. – Latest developments in warp knitting machines. Warp knitting calculations for GSM, production- Application of warp knitted structures in technical textiles

**Theory: 45 Tutorial: 0 Practical: 0 Project: 0 Total: 45 Hours**

**REFERENCES**

1. DavidSpencer.,"KnittingTechnology",PergamonPress,Oxford2005
ISBN**(13):** 9781855733336

2.AnbumaniN, "Knitting – Fundamentals, Machines, Structures and Developments",NewAgeInternationalPublishers,2 0 1 0 .**ISBN(13):**978-81-224-1954-2

3AjgaonkarDB, "Principles ofKnitting", Universal Publishing Corporation, Mumbai, 1998, **ISBN**: 81-85027-34-X.

4. Chandrasekhar Iyer, Bernd Mammel and Wolfgang Schach., "Circular knitting", Meisenbach GmbH, Bamberg, 1995, **ISBN**: 3-87525-066-4.

SL.No 2: Garment fit is added in the course U17FTE0005 clothing science for apparel engineering.

**U17FTE0005 CLOTHING SCIENCE FOR APPAREL ENGINEERING**

**Course Outcomes**

**After successful completion of this course, the students should be able to**

| | | |
|---|---|---|
| **CO1** | Acquire Knowledge on the basic requirements in the design of apparel engineering | K2 |
| **CO2** | Recognize and associate the objective and subjective evaluation of clothing fit | K4 |
| **CO3** | Recognize and associate the Effect of fiber properties, yarn structure and fabric construction on the fabric aesthetic & appearance | K4 |
| **CO4** | Recognize and associate the Effect of fiber properties, yarn structure and fabric construction on the fabric dimensional stability. | K4 |
| **CO5** | Acquire Knowledge and associate the Effect of fiber properties, yarn structure and fabric construction on the fabric Serviceability. | K4 |
| **CO6** | Enhance knowledge and associate the effect of fiber properties, yarn structure and fabric construction on the fabric handle & clothing comfort | K4 |

**Pre Requisite:**

U17FTT1001 Fibre science
U17FTT2001 Yarn technology
U17FTT 3001 Weaving Technology
U17FTT5003 Knitting Technology
U17FTI 5202TextileandApparel Quality Evaluation

**CO/PO Mapping**

(S/M/W indicates strength of correlation) S-Strong, M-Medium, W-Weak

| COs | Programme Outcomes(POs) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
| CO1 | S | S | | | | | | | | | | | | |
| CO2 | S | S | | | | | | | | | | | | |
| CO3 | S | S | | | | | | | | | | | S | |
| CO4 | S | S | | | | | | | | | | | S | |
| CO5 | S | S | | | | | | | | | | | S | |
| CO6 | S | M | | | | | | | | | | | S | |

**Course Assessment methods**

| Direct | Indirect |
|---|---|
| 1. Internal tests<br>2. Assignment<br>3. Group Presentation<br>4. End Semester Exam | 1.Course Exit Survey |

**Course content**

**REQUIREMENTS FOR APPAREL ENGINEERING** **5 Hours**

Introduction to apparel design & its types – aesthetic, functional, exploratory, incremental. Requirements for clothing design - physiological, biomechanical, ergonomic, psychological requirements. Process, steps involved in clothing design.

**SIZING SYSTEMS AND EVALUATION OF CLOTHING FIT** **10 Hours**

Development of sizing system. Principles of sizing system. Definition, Importance, Standards, influence of clothing fit. Testing methods - objective and subjective evaluation of fit.

**AESTHETICS AND APPEARANCE** **9 Hours**

Selection of fibre, yarn structure and fabric construction; their effect on pilling, fastness, lusture and Shade variation. Fabric properties related to appearance.

**DIMENSIONAL STABILITY:** Study of factors that affect hygral expansion, relaxation shrinkage, swelling shrinkage, felting shrinkage. Dimensional stability to dry cleaning and dry heat with respect to fibre properties.

**SERVICEABILITY** **9 Hours**

Study of Factors affecting properties such as snagging, abrasion resistance, tearing strength, tensile strength, bursting strength, fusing, Seam strength and slippage with respect to fiber properties, yarn structure and fabric design.

**FABRIC HANDLE** **3 Hours**

Objective evaluation of fabric hand by KES and FAST.

**CLOTHING COMFORT** **9 Hours**

Effect of fibre properties, yarn structure, fabric design, fabric construction and treatments on the fabric properties such as air permeability, breathability, moisture transport – wetting and wicking; clothing comfort – thermal comfort, heat and moisture transfer, moisture sensations; tactile comfort – pressure sensations.

**Theory: 45 Hours** **Total: 45 Hours**

**REFERENCES**


1. Engineering Apparel Fabrics and Garments, Woodhead Publishing Textiles, by J Fan, L. Hunter, 2009
2. Saville B.P, “Physical Testing of Textiles”, The Textile Institute, Wood head Publishing Ltd, Cambridge, 1999
3. Fan J., Yu. W and Hunter L., Clothing Appearance and fit, Textile Institute, Woodhead Publishing Limited, England, 2004
4. Ed.Postle R., Kawabata.S and Niwa M., “Objective Evaluation of Fabrics”, Textile Machinery Society, Japan, Osaka, 1983.
5. Sandra Betzina, Fast Fit-Easy Pattern Alterations for Every Figure, The Taunton press inc., Singapore, 2003
6. Biomechanical engineering of textile and clothing,editedbyY. Li and X-Q. Dai, Woodhead Publishing Limited, England, 2006
7. Design of apparel fabrics: role of fibre, yarn and fabric parameters on its functional attributes, Journal of Textile Engineering, Vol.54, No.6, 179-190, 2008

8. Design and engineering of functional clothing, Indian Journal of fiber & Textile Journal, Vol.36, pp. 327-335, December 2011

SL.No:3 These courses are given as two separate courses such as U17FTT3003 pattern making and adaptation & U17FTI3204 Garment components fabrication

| Semester III | | | | | | | | | | Pre-requisite |
|---|---|---|---|---|---|---|---|---|---|---|
| S.No | Course code | Course Title | Course Mode | CT | L | T | P | J | C | |
| 1 | U17EEI3206 | Basic Electrical and Electronics Engineering | Embedded-Theory& Lab | ES | 3 | 0 | 2 | 0 | 4 | Nil |
| 2 | U17FTT3001 | Weaving Technology | Theory | PC | 3 | 0 | 0 | 0 | 3 | Nil |
| 3 | U17FTI3202 | Concepts of Fashion and Design | Embedded - Theory & Lab | PC | 3 | 0 | 2 | 0 | 4 | Nil |
| 4 | U17FTT3003 | Pattern Making and Adaptation | Theory | PC | 3 | 0 | 0 | 0 | 3 | Nil |
| 5 | U17FTI3204 | Garment Components Fabrication | Embedded - Theory & Lab | PC | 3 | 0 | 2 | 0 | 4 | Nil |
| 6 | U17INI3600 | Engineering Clinic I | Project based course | ES | 0 | 0 | 4 | 2 | 3 | Nil |
| | | | | | | | | Total Credits | 21 | |
| | | | | | | | | Total Contact Hours/week | 27 | |

## U17FTT3003 PATTERN MAKING AND ADAPTATION

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

**Course Outcomes**
**After successful completion of this course, the students should be able to**

| | | |
|---|---|---|
| **CO1** | Define and classify the patterns and memorize the steps involved in taking body measurement | K2 |
| **CO2** | Prepare the basic block patterns for men, women and kids wear based on the principles and methodologies of drafting | K3 |
| **CO3** | Prepare patterns for basic blocks using draping techniques | K3 |
| **CO4** | Apply dart manipulation techniques to design, variation in garment components | K6 |
| **CO5** | Evaluate the techniques involved in pattern alteration for various body measurements and fitting problems | K5 |
| **CO6** | Develop knowledge on the techniques involved in grading for various sizes of body measurements | K3 |

**Pre Requisite : Nil**

| CO/PO Mapping |
|---|

| (S/M/W indicates strength of correlation) S-Strong, M-Medium, W-Weak | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| COs | Programme Outcomes(POs) | | | | | | | | | | | | | |
| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
| CO1 | | S | | | | | | | | | | | M | |
| CO2 | S | S | M | | | | | | | M | | | S | M |
| CO3 | S | S | M | | | | | | | M | | | S | M |
| CO4 | | S | S | | | | | | | | | | S | |
| CO5 | S | S | M | M | | | | | | | | M | M | |
| CO6 | S | S | M | | | | | | | | | | M | |

**Course Assessment methods**

| Direct | Indirect |
|---|---|
| 1. Internal tests<br>2. Assignment<br>3. Group Presentation<br>4. End Semester Exam | 1. Course Exit Survey |

**Course Content**

**BASICPATTERNMAKING** **9 Hours**

Patterns – definition and types- individual and commercial patterns. Pattern making – definition and types of pattern making- drafting, draping, flat pattern techniques, their advantages and disadvantages. Tools for pattern making. Body measurements – importance, principles, precautions. Definition and standardization of size chart (ASTM Standards)

**DRAFTING** **9 Hours**

Basic principles and methodologies used to draft standard basic block patterns for men, women and kids wear- top, skirt and bifurcated garment (pyjama) . Importance of pattern details – pattern name, cut number, on fold details, drill hole marks, darts, Seam allowances, notches, Balances marks and grain lines.

**DRAPING** **9 Hours**

Draping - Tools for Draping. Draping skills – preparation of basic blocks- bodice, skirt, sleeve and trouser.

**FLATPATTERNTECHNIQUES** **9 Hours**

Dart Manipulation – basic techniques – pivot method, slash and spread, measurement method. Applications of dart manipulation on bodice with darts on shoulder, armhole, side seam and waistline – transferring darts, combining, dividing, converting into seams and fullness – drafting princess line cut.

**PATTERNALTERATION** **5 Hours**

Pattern alteration - definition, principles, techniques – Lengthening, shortening, widening, narrowing patterns according to required body measurements by slash and spread or slash and overlap methods.

**GRADING** **4 Hours**

Grading – Definition, Principles and types –manual grading and computerized grading for bodice block, sleeve and skirt.

**Theory: 45 Hours** **Total: 45 Hours**

**REFERENCES**


1. Helen Joseph Armstrong, "Pattern Making for Fashion Design" Pearson Education (Singapore)Pvt. Ltd.,2005
2. Winifred Aldrich, "Metric Pattern Cutting" Blackwell Science Ltd., 1994
3. Amaden-Crawford Connie, "The Art of Fashion Draping (3rd edition)" Om Books International Publications, 2005
4. Hollen Norma R; KundelCarlyn, "Pattern making by the flat pattern method", 1998
5. Gillian Holman,"PatternCuttingMadeEasy", Blackwell Scientific Publications, 1997.
6. Natalie Bray "More Dress Pattern Designing" Blackwell Scientific Publications, 1986.
7. Gerry Cooklin, "Master Patterns and Grading for Women's Outsizes", Blackwell Scientific Publications, 1995.
8. Gerry Cooklin, "Master Patterns and Grading for Men's Outsize", Blackwell Scientific Publications, 1992.
9. Jeenne Price and Bernard Zamkoff, "Grading Techniques for Modern Design" Fairchild Publications, 1990.


## U17FTI3204 GARMENT COMPONENTS FABRICATION

| L | T | P | J | C |
|---|---|---|---|---|
| 3 | 0 | 2 | 0 | 4 |

**COURSE OUTCOMES**

**After successful completion of this course, the students should be able to**

| | | |
|---|---|---|
| **CO1** | Define and Classify the types of stitches, seams, seam finishes, stitch and seam defects. | K2 |
| **CO2** | Discuss the various methods for creating fullness in garments | K6 |
| **CO3** | Develop simple patterns for different garment components | K3 |
| **CO4** | Construct different types of garment components suiting requirements of the wearer | K3 |
| **CO5** | Construct the different types of garment fasteners suiting requirements of the wearer | K3 |
| **CO6** | Select and analyze garment components, seam /stitch types for different garment styles and purposes | K5 |

**Pre Requisite: Nil**

CO/PO Mapping
(S/M/W indicates strength of correlation) S-Strong, M-Medium, W-Weak

| COs | Programme Outcomes(POs) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PO 1 | PO 2 | PO 3 | PO 4 | PO 5 | PO 6 | PO 7 | PO 8 | PO 9 | PO1 0 | PO1 1 | PO1 2 | PSO 1 | PSO 2 |
| CO | S | | | | | | | | | M | | | M | |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | |
| CO 2 | S | S | S | | | | | | | | | | M | |
| CO 3 | S | S | M | S | | | | | | | | | S | M |
| CO 4 | | S | S | | | M | | | | | | | S | M |
| CO 5 | | | S | S | | M | | | | | | | S | M |
| CO 6 | | S | M | M | | M | | | | | | M | S | |

**Course Assessment methods**

| Direct | Indirect |
|---|---|
| 1. Internal tests<br>2. Assignment<br>3. Group Presentation<br>4. End Semester Exam<br>5. Model exams, Lab exercises & End semester exams for lab component | 2.Course Exit Survey |

**9 Hours**

**SEAMS:** Definition, Types of seams – Federal classifications, factors to be considered in the selection of seam, seam finishes and seam defects.

**STITCHES:** Definition, stitch classes - Federal classifications, stitch parameters, factors to be considered in the selection of stitches. Stitching defects.

**9 Hours**

**FULLNESS:** Definition, types- Darts – single, double pointed darts, Tucks - pin tucks, cross tucks, piped tucks, shell tucks. Pleats- knife pleats, box pleats, invertible box pleats, Kick pleats. Flare, godets, gathers, shirring, single, double frills and flounces.

**HEMMING TECHNIQUES:** Definition, types - machine stitched hem and hand-stitched hem.

**NECKLINE FINISHES**- preparation of bias strip, bias facing, bias binding, fitted facing and French binding. **9 Hours**

**SLEEVES:** Types and construction of sleeves - plain, puffs, gathered, bell, bishop, circular, leg-o-mutton, Magyar sleeves, Raglan sleeves, kimono.

**YOKES:** Definition – Selection of yoke design, Types and construction of yoke - Simple yoke – yokes with or without fullness, midriff yokes, panel yokes, partial yokes.

**9 Hours**

**COLLARS:** Classification of collars, Types of collars– flat collars (peter pan collar, scalloped, flared, puritan collar, sailor collar) convertible collar, shirt collar with stand, Mandarin collar, shawl collar.

**POCKETS:** Types– patch pocket – creating variations, set in pocket- bound pocket, welt

pocket, pocket in a seam- front hip pocket, Attaching flap to a patch pocket.

**9 Hours**

**PLACKETS:** Inconspicuous plackets - continuous bound placket, two-piece placket, zipper placket – slot seam & lapped seam. Conspicuous plackets - Tailored or Kurtha placket, fly opening – button and buttonhole method, Zipper method.

**FASTENERS:** Types - button and buttonholes, hooks and eye, snaps, Velcro, eyelets, cords and rivets

**Theory: 45 Tutorial: 0 Practical: 0 Project: 0 Total: 45 Hours**

**REFERENCES**


1. Mary Mathews, "Practical Clothing Construction Part I and II", Paprinpack, Madras, 2000.
2. Ruth E.Glock, Grace I. Kunz, "Apparel Manufacturing – Sewn Product Analysis", Pearson/Prentice Hall, 2005
3. Claire Shaeffer, "Sewing for the Apparel Industry", Prentice-Hall Inc, New Jersey, 2001
4. Gerry Cooklin, "Garment Technology for Fashion Designers", Blackwell Science Ltd., 2001.
5. Leila Aitken., "Step By Step Dress Making Course", BBC Books, 1992
6. Amaden. C. and Crawford, A guide to Fashion Sewing, Fairchild Publications, 2001.
7. Fan.J., Yu.W., and Hunter.L., "Clothing Appearance and Fit: Science and Technology", The Textile Institute, Manchester, 2004
8. Joseph. H andAmstrong, "Pattern Making for Fashion Design", Pearson Education Inc, 2005.
9. Sumathi,G.J, " Elements of Fashion and Apparel Design", New Age International (P) Ltd, 2005.
10. Federal standards, stitches and seams.


## LAB COMPONENTS

**LIST OF EXPERIMENTS**

1. Preparing samples for basic Hand stitches.
2. Preparing samples for seams
3. Preparing samples for seam finish.
4. Preparing samples for Darts, pleats and tucks
5. Preparing samples for gathers, godets and frills
6. Preparing samples for Necklines – Bias facing, Bias Binding and Fitted facing.
7. Preparing samples for Sleeves – Plain, Puff, Raglan, Kimono, Cap Sleeve
8. Preparing samples for collars – Peter Pan collar, Full shirt collar, Shawl collar.
9. Preparing samples for pockets – Patch Pocket, Bound Pocket and Front Hip Pocket.
10. Preparing samples for plackets – continuous bound placket, 2 piece placket, tailors placket, Fly opening and Zipper

**Theory: 0 Tutorial: 0 Practical: 30 Project: 0 Total: 30 Hours**

**REFERENCES**


1. Mary Mathews, "Practical Clothing Construction Part I and II", Paprinpack, Madras,

2000.

2. Ruth E.Glock, Grace I. Kunz, “Apparel Manufacturing – Sewn Product Analysis”, Pearson/Prentice Hall, 2005
3. Claire Shaeffer, “Sewing for the Apparel Industry”, Prentice-Hall Inc, New Jersey, 2001
4. Gerry Cooklin, “Garment Technology for Fashion Designers”, Blackwell Science Ltd., 2001.
5. Leila Aitken., “Step By Step Dress Making Course”, BBC Books, 1992

Sl.No 4 : The nomenclature of the course advanced finishing technology should be changed to technology of apparel finishing

| Semester II | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| S.No | Course code | Course Title | Course Mode | CT | L | T | P | J | C |
| 1 | P18ATT2001 | Engineering of Functional Clothing | Theory | PC | 3 | 0 | 0 | 0 | 3 |
| 2 | P18ATT2002 | Advanced Knitwear Technology | Theory | PC | 3 | 0 | 0 | 0 | 3 |
| 3 | P18ATI2003 | Technology of Apparel Finishing | Embedded | PC | 3 | 0 | 2 | 0 | 4 |
| 4 | P18ATI2004 | Apparel Enterprise Resource Management | Embedded | PC | 3 | 0 | 2 | 0 | 4 |
| 5 | P18ATI2005 | New Product Development and Assessment | Theory | PC | 3 | 0 | 0 | 2 | 4 |
| | | | | | | | | Total Credits | 18 |
| | | | | | | | | Total Contact Hours/week | 21 |

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**DEPARTMENT OF COMPUTER APPLICATIONS**

**AY: 2017-18** **Date: 11.04.2018**

**Action taken report– Teachers Feedback**

| S.NO | ANALYSIS | ACTION TAKEN REPORT |
|---|---|---|
| 1. | Case study approach may be introduced. Group assignments and projects to be given. | Case studies introduced in the syllabus wherever it was applicable , Mini projects given,<br>• P17CAP5701- Miniprojects<br>Projects given in embedded course mode along with the theory or Lab Course.<br>• P17CAI5301 Cloud Application Development<br>• P17INI3600 Engineering Clinic –I<br>• P17INI4600 Engineering Clinic –II<br>• P17CAI2304 Software Engineering |
| 2. | In Web Application Development course, the teachers suggested to include, Introduction to frameworks and topics on API/Interfacing and JSP. | The course P17CAI4203 -Web Development syllabus updated with the changes. |
| 3. | Suggested that course entitled Intelligence Systems can be included with the contents having introduction on artificial intelligence and machine learning. | The changes were incorporated and the course named as P17CAT3003 Machine Learning & Data Analysis, which consist of machine learning and data analysis, for artificial Intelligence part a separate course on AI was introduced. |

PreparedBy,

BoS Coordinator

Approved By,

BoS Chairman

Proof for Action Taken 1: Projects Given

**SEMESTER-II**

| Course Code | Course Title | Course Mode | L | T | P | J | C |
|---|---|---|---|---|---|---|---|
| P17CAT2101 | Data Structures | Theory | 3 | 1 | 0 | 0 | 4 |
| P17CAT2002 | Database Management System | Theory | 3 | 0 | 0 | 0 | 3 |
| P17CAT2103 | Computer Networks | Theory | 3 | 1 | 0 | 0 | 4 |
| P17CAI2304 | Software Engineering | Embedded Theory & Project | 3 | 0 | 0 | 2 | 4 |
| P17CAP2501 | Data Structures Lab | Lab | 0 | 0 | 4 | 0 | 2 |
| P17CAP2502 | DBMS Lab | Lab | 0 | 0 | 4 | 0 | 2 |
| P17ENP2502 | Professional Skills I | Lab | 0 | 0 | 2 | 0 | 1 |
| | | | | | | **Total Credits** | **20** |
| | | | | | | **Total Periods per week** | **26** |

**SEMESTER-III**

| Course Code | Course Title | Course Mode | L | T | P | J | C |
|---|---|---|---|---|---|---|---|
| P17CAI3201 | User Interface Design and Development | Embedded – Theory &Lab | 3 | 0 | 2 | 0 | 4 |
| P17CAT3102 | Analysis of Algorithms | Theory | 3 | 1 | 0 | 0 | 4 |
| P17CAT3003 | Machine Learning & Data Analysis | Theory | 3 | 0 | 0 | 0 | 3 |
| P17MAI3201 | Probability and Statistics for Data Analysis | Embedded – Theory &Lab | 3 | 0 | 2 | 0 | 4 |
| P17CAI3203 | Programming with JAVA | Embedded – Theory &Lab | 3 | 0 | 2 | 0 | 4 |
| P17ENP3501 | Professional Skills II | Lab | 0 | 0 | 2 | 0 | 1 |
| P17INI3600 | Engineering Clinic –I | Embedded Lab& Project | 0 | 0 | 4 | 2 | 3 |
| | | | | | | **Total Credits** | **23** |
| | | | | | | **Total Hours per week** | **30** |

**SEMESTER-V**

| Course Code | Course Title | Course Mode | L | T | P | J | C |
|---|---|---|---|---|---|---|---|
| P17CAI5301 | Cloud Application Development | Embedded - Theory & Project | 3 | 0 | 0 | 2 | 4 |
| P17CAE_ _ _ | Programme Elective II | Theory | 3 | 0 | 0 | 0 | 3 |
| P17CAE_ _ _ _ | Programme Elective III | Theory | 3 | 0 | 0 | 0 | 3 |
| P17CAP5701 | Mini Project / Industry | Project | 0 | 0 | 0 | 12 | 6 |
| | | | | | | **Total Credits** | **16** |
| | | | | | | **Total Hours per week** | **23** |

| P17CAT1103 | OPERATING SYSTEMS | L | T | P | J | C |
|---|---|---|---|---|---|---|
| | | 3 | 1 | 0 | 0 | 4 |

**Course Outcomes**

**After successful completion of this course, the students should be able to**

**CO 1:** Know the basics of operating systems.
**CO 2:**Understand process synchronization and deadlock concepts.
**CO 3:** Analyze various memory management techniques.
**CO 4 :** Use disk management and disk scheduling algorithms for better utilization of external memory.
**CO 5:** Recognize file system interface, protection and security mechanisms.

**Pre–requisite :** Nil

**COURSE ASSESSMENT METHODS**

**DIRECT**
1.Continuous Assessment Test I, II
2.Assignment; Group Presentation
3.End Semester Examination

**INDIRECT**
1.Course-end survey

**INTRODUCTION** — **8 Hours**

Operating system – Computer System Organization – Computer System Architecture – Operating System Structure – Operations – Process Management – Memory Management-Storage Management – Protection and Security – Open Source Operating System – Operating System Services – User Interface – System Calls – System Programs – Design and Implementation – Debugging.

**PROCESS MANAGEMENT** — **7 Hours**

Process Concepts – Process Scheduling – Operations on Processes – Inter Process Communication – Examples – Threads – Overview – Multi Threading Models – Libraries – Issues.

**PROCESS SYNCHRONIZATION** — **6 Hours**

Background – Critical Section Problem – Peterson's Solution – Synchronization Hardware – Semaphores – Classic Problem of Synchronization – Monitors.

**CPU SCHEDULING** — **5 Hours**

Basic Concepts – Scheduling Criteria – Scheduling Algorithms.

**DEADLOCK** — **6 Hours**

Deadlock Characterization – Handling Deadlocks – Deadlock Prevention – Avoidance – Detection – Recovery.

Background – Demand Paging – Copy on Write – Page Replacement – Thrashing – Working Set.

**I/O MANAGEMENT AND DISK SCHEDULING** — **6 Hours**

Organization of I/O function – Evolution of I/O Function – Types of I/O devices – Logical Structure of I/O Functions – I/O Buffering – Disk I/O – Disk Scheduling algorithms – Disk Cache.

**FILE SYSTEMS** — **8 Hours**

File Concept – Access Methods – Directory and Disk Structure – File System Mounting – File Sharing – Protection – File System Structure – File System Implementation – Directory Implementation – Allocation Methods – Free Space Management.

**CASE STUDIES** — **3 Hours**

Mobile OS – Solaris – Windows –UNIX (Linux) OS – Using System Editor – Basic UNIX (Linux) commands.

**Theory: 45 Hrs** **Tutorial: 15 Hrs** **Total Hours: 60 Hrs**

**REFERENCES**


1. Abraham Silberschatz & Peter B. Galvin, "OperatingSystem Concepts", 9th Edition, John Wiley&Sons,Inc.,2013.
2. P.C.Bhatt, "AnIntroduction to OperatingSystems–Concepts andPractice",4th Edition, Prentice Hall of India., 2013.
3. WilliamStallings,"OperatingSystems:Internalsand Design Principles",7th Edition, Prentice Hall of India.,2012.
4. D.M.Dhamdhere,"OperatingSystems:AConceptbasedApproach", 3rd Edition, Tata McGraw Hill, 2012.

**SEMESTER-IV**

| Course Code | Course Title | Course Mode | L | T | P | J | C |
|---|---|---|---|---|---|---|---|
| P17CAI4201 | Software Testing | Embedded - Theory &Lab | 3 | 0 | 2 | 0 | 4 |
| P17CAT4102 | Big Data Analytics | Theory | 3 | 1 | 0 | 0 | 4 |
| P17CAI4203 | Web Development | Embedded – Theory & Lab | 3 | 0 | 2 | 0 | 4 |
| P17CAE_ _ _ | Programme Elective I | Theory | 3 | 0 | 0 | 0 | 3 |
| P17CAP4501 | Mobile Application Development Lab | Lab | 0 | 0 | 4 | 0 | 2 |
| P17ENP4501 | Professional Skills III | Lab | 0 | 0 | 2 | 0 | 1 |
| P17INI4600 | Engineering Clinic –II | Embedded Lab& Project | 0 | 0 | 4 | 2 | 3 |
| | | | | | | **Total Credits** | **21** |
| | | | | | | **Total Hours per week** | **29** |

**SEMESTER-V**

| Course Code | Course Title | Course Mode | L | T | P | J | C |
|---|---|---|---|---|---|---|---|
| P17CAI5301 | Cloud Application Development | Embedded - Theory & Project | 3 | 0 | 0 | 2 | 4 |
| P17CAE_ _ _ | Programme Elective II | Theory | 3 | 0 | 0 | 0 | 3 |
| P17CAE_ _ _ | Programme Elective III | Theory | 3 | 0 | 0 | 0 | 3 |
| P17CAP5701 | Mini Project / Industry | Project | 0 | 0 | 0 | 12 | 6 |
| | | | | | | **Total Credits** | **16** |
| | | | | | | **Total Hours per week** | **23** |

Proof for Action Taken 2 : Web Development syllabus updated with the changes.

| P17CAI4203 | WEB DEVELOPMENT | L | T | P | J | C |
|---|---|---|---|---|---|---|
| | | 3 | 0 | 2 | 0 | 4 |

**Course Outcomes**

**After successful completion of this course, the students should be able to**

**CO1:**Design and develop platform independent applications using a variety of component based Frameworks.
**CO2:**Explore the features of various platforms and frameworks used in web applications Development.
**CO3:**Able to implement the concepts of Hibernate, Spring for building enterprise applications.
**CO4:** Design and develop interactive, client-side, server-side executable web applications.
CO5:Know about integrating and building the web applications.

**Pre–requisite :- Nil**

**DIRECT**

1. Continuous Assessment Test I, II (Theory component)
2. Assignment (Theory component)
3. Demonstration etc (as applicable) (Theory component)
4. Pre/Post - Experiment Test/Viva; Experimental Report for each Experiment (lab Component)
5. Model Examination (lab component)
6. End Semester Examination (Theory and lab components)

**INDIRECT**

1. Course-end survey

| **J2EE PLATFORM** | **9 Hours** |
|---|---|

Introduction - J2EE Architecture – Containers- J2EE Standard Services – J2EE Technologies-Using JNDI-JNDI Naming Context- Java and LDAP - LDAP Operations – LDAP Information Model-LDAP Naming Model.

| **JSP** | **12 Hours** |
|---|---|

Introduction to Web Applications – Installing Tomcat/Eclipse- JSP Tags – Implicit Objects in JSP – Request Implicit Objects in JSP – Using Java Classes in JSP – Interacting with HTML Forms-Sessions – Cookies – JSTL.

| **SPRING** | **12 Hours** |
|---|---|

Introduction – Need – Spring 5 update – Spring Framework – Platforms – Installation – Inversion of Control – Dependency Injection in XML configuration – Scopes and Lifecycles – Java Annotations – Spring MVC.

| **HIBERNATE** | **12 Hours** |
|---|---|

Introduction – Overview –Hibernate and JDBC – Development Environment –Annotations – Mapping Relations – Caching – Hibernate Query Language – Hibernate Object States / Persistence Life Cycle – Get / Load – Java Persistence API.

**Theory: 45 Hours** **Tutorial: Nil** **Total: 45 Hrs**

Proof for Action Taken 3 : Web Development syllabus updated with the changes.

| P17CAT3003 | MACHINE LEARNING & DATA ANALYSIS | L | T | P | J | C |
|---|---|---|---|---|---|---|
| | | 3 | 0 | 0 | 0 | 3 |

**Course Outcomes**

**After successful completion of this course, the students should be able to**

CO1: Understand the basic concepts of machine learning
CO2: Pre-process the data for machine learning applications
CO 3: Apply the association rules for mining the data
CO 4: Design and deploy appropriate classification techniques.
CO 5: Cluster the high dimensional data for better organization.
CO 6: Evaluate various machine learning techniques on complex data objects

Pre–requisite : Database Management System

**COURSE ASSESSMENT METHODS**

| DIRECT |
|---|
| 1. Continuous Assessment Test I, II<br>2. Assignment; Group Presentation<br>3. End Semester Examination |
| **INDIRECT** |
| 1. Course-end survey |

**MACHINE LEARNING** — **5 Hours**

Introduction – Machine Learning Applications: Learning Associations – Classification – Regression – Unsupervised Learning – Reinforcement Learning – Supervised Learning: Examples – Learning Multiple Classes – Model Selection and Generalization.

**DATA PRE-PROCESSING** — **6 Hours**

Introduction - Need for Data Pre-processing – Data Cleaning – Data Integration and Transformation – Data Reduction – Data Discretization and Concept Hierarchy Generation.

**ASSOCIATION RULE MINING** — **4 Hours**

Introduction - Data Mining Functionalities - Association Rule Mining - Mining Frequent Item sets with and without Candidate Generation

**CLASSIFICATION** — **9Hours**

Basic Concepts – Decision Tree - Bayesian Classification – Rule Based Classification - Bayesian Belief Networks - Classification by Back-propagation - Support Vector Machines

**MODEL EVALUATION AND SELECTION** — **4 Hours**

Metrics for Evaluating Classifier Performance - Holdout Method and Random Sub sampling - Cross-Validation – Bootstrap - Statistical Tests of Significance - Error Measures - ROC Curves

| | |
|---|---|
| Accuracy of Class-Imbalanced Data | |
| | |
| **CLUSTERING** | **8 Hours** |
| Cluster Analysis: - Types of Data in Cluster Analysis – A Categorization of Major Clustering Methods – Partitioning Methods – Hierarchical methods: Agglomerative versus Divisive Hierarchical Clustering - Distance Measures in Algorithmic Methods | |
| | |
| **OUTLIER ANALYSIS** | **5 Hours** |
| Introduction – Types of Outliers - Outlier Detection Methods - Supervised, Semi-Supervised, and Unsupervised Methods. | |
| | |
| **Theory: 45 Hrs** **Tutorial: -** | **Total Hours: 45 Hrs** |
| | |
| **REFERENCES:** | |


1. EthemAlpaydın, "IntroductiontoMachine Learning", The MIT Press Cambridge, 2nd Edition, 2010.
2. Jiawei Han and MichelineKamber, "Data Mining Concepts and Techniques" Third Edition, Elsevier, Reprinted 2012.
3. Berson, Alex & Smith, Stephen J, Data Warehousing, Data Mining, and OLAP, TMH Pub. Co. Ltd, New Delhi, 2012
4.G. K. Gupta, "Introduction to Data Mining with Case Studies", Easter Economy Edition, PrenticeHall of India, 2011
5. K.P. Soman, ShyamDiwakar and V. Ajay, "Insight into Data mining Theory and Practice", EasterEconomy Edition, Prentice Hall of India, 2006.

| P17CAE0012 | ARTIFICIAL INTELLIGENCE & EXPERT SYSTEMS | L | T | P | J | C |
|---|---|---|---|---|---|---|
| | | 3 | 0 | 0 | 0 | 3 |

**Course Outcomes**

**After successful completion of this course, the students should be able to**

CO1: Know the basics and problem solving approach to AI problems
CO2: Analyze various search strategies for a problem.
CO3: Evaluate different knowledge representation schemes for typical AI problems
CO4: Design and implement a typical AI problem to be solved using various Techniques
CO5: Design and implement a futuristic AI application

Pre–requisite : Nil

**COURSE ASSESSMENT METHODS**

**DIRECT**

1. Continuous Assessment Test I, II
2. Assignment; Group Presentation
3. End Semester Examination

**INDIRECT**

1. Course-end survey

**INTRODUCTION** — **9 Hours**

Introduction to Artificial Intelligence – Intelligent Agents – Agents and Environments - Good behavior – The Nature of Environments – Structure of Agents - Problem Solving - Problem Solving Agents – Agent Architectures and Hierarchical Control - Agents - Agent Systems – Hierarchical Control - Embedded and Simulated Agents - Acting with Reasoning

**SEARCHING TECHNIQUES** — **9 Hours**

Searching For Solutions – Uniformed Search Strategies - Avoiding Repeated States – Searching with Partial Information - Informed Search and Exploration – Informed Search Strategies – Heuristic Function – Local Search Algorithms and Optimistic Problems – Local Search in Continuous Spaces – Online Search Agents and Unknown Environments – Constraint Satisfaction Problems (CSP) – Backtracking Search and Local Search for CSPs – Structure of Problems - Adversarial Search – Games – Optimal Decisions in Games – Alpha-Beta Pruning – Imperfect Real-Time Decisions – Games that include an element of chance.

**KNOWLEDGE AND REASONING** — **9 Hours**

Proposition Logic - First Order Predicate Logic – Unification – Forward Chaining -Backward Chaining - Resolution – Knowledge Representation - Ontological Engineering - Categories and Objects – Events - Mental Events and Mental Objects - Reasoning Systems for Categories - Reasoning with Default Information - Prolog Programming.

**LEARNING** — **9 Hours**

Probability basics - Bayes Rule and its Applications - Bayesian Networks – Exact and Approximate Inference in Bayesian Networks - Hidden Markov Models - Forms of Learning - Supervised Learning - Learning Decision Trees – Regression and Classification with Linear Models - Artificial Neural Networks – Nonparametric Models - Support Vector Machines - Statistical Learning - Learning with Complete Data - Learning with Hidden Variables- The EM Algorithm – Reinforcement Learning

**AI PLANNING AND APPLICATIONS** — **9 Hours**

AI Planning – Planning with State - Space Search – Partial-Order Planning – Planning Graphs – Planning with Propositional Logic- Hierarchical Task Network Planning – Conditional Planning - All applications – Language Models - Information Retrieval – Information Extraction - Machine Translation – Machine Learning - Symbol-Based – Machine Learning: Connectionist – Machine Learning - Social and Emergent – Robots

**Theory: 45Tutorial: - Total Hours: 45 Hrs**

**REFERENCES**


1. S. Russell and P. Norvig, "Artificial Intelligence: A Modern Approachl, Prentice Hall, Third Edition, 2016.
2. I. Bratko, Prolog: Programming for Artificial Intelligencel, Fourth edition, Addison-Wesley Educational Publishers Inc., 2011.
3. Gerhard Weiss, Multi Agent Systems, Second Edition, MIT Press, 2013.

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**Department of Mechatronics Engineering**

**Date:(1.8.17)**

**AY: 2017-18**

**Action taken report -Faculty Feedback**

| S.No | Analysis | Action taken report |
|---|---|---|
| 1. | Suggested to add vector mechanics in U15MET202 Engineering Mechanics | It's a common course frame by mechanical department so we suggested to them. |
| 2. | The committee also appreciated the course on Agriculture automation | Which is given as open elective. |
| 3. | MATLAB & LABVIEW can be made compulsory | MATLAB & LABVIEW taught in certain subject and include in lab also |
| 4. | Design & Fabrication project can be included | Design project is suggested to |

Prepared By,

BoS Coordinator

Approved By,

BoS Chairman

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**Department of Mechatronics Engineering**

**AY: 2017-18** **Date:(1.8.17)**

**Action taken report -Faculty Feedback(Proof)**

**Proof 2:**

| Open Electives | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **S.No** | **Course code** | **Course Title** | **Course Mode** | **CT** | **L** | **T** | **P** | **J** | **C** |
| **1.** | U17MCO0001 | Robotics for Engineers | Theory | OE | 3 | 0 | 0 | 0 | 3 |
| **2.** | U17MCO0002 | Automation in Agriculture | Theory | OE | 2 | 0 | 1 | 0 | 3 |
| **3.** | U17MCO0005 | Mechanics in Cricket | Theory | OE | 3 | 0 | 0 | 0 | 3 |
| **4.** | U17MCO0006 | Low Cost Automation | Theory | OE | 3 | 0 | 0 | 0 | 3 |
| **5.** | U17MCO0007 | Magics and Mechanics | Theory | OE | 2 | 0 | 1 | 0 | 3 |

**Proof 3:**

10. Measurement of sound using microphones and sound level meter.

**ADDITIONAL EXPERIMENTS**

11. Conversation of time domain audio signal into frequency domain signal (FFT).
12. Measurements of 3 phase power and power factor.

**NOTE:** Experiments 6- 9 should be logged in computer by using data acquisition system and LABVIEW/MATLAB/SCILAB.

**TIME DOMAIN ANALYSIS** **12Hours**

Standard Test signals – Time response of second order system - Time domain response Performance criteria - Types of systems - Steady state error constants - Generalized error series.

**FREQUENCY RESPONSE OF SYSTEMS** **12Hours**

Frequency domain specifications - correlation between time and frequency response for second order systems-Bode plots- Assessment of stability - Gain Margin and phase Margin Assessment – Lead, lag and Lead lag compensation using Bode Plot - Polar plots. **Tutorials**: Bode plot and polar plot using MATLAB.

**STABILITY OF CONTROL SYSTEMS** **12Hours**

Characteristic equation - Routh Hurwitz criterion of stability - Nyquist stability - Nyquist stability criterion - Assessment of relative stability – Gain and Phase Margin. Root Locus concept - Root Locus procedure - Root Locus construction - Root contours- **Tutorials**: Stability analysis of higher order systems using MATLAB

**PROCESS CONTROL** **12Hours**

Process definition, equation and dynamics - Discontinuous and continuous controllers- Realization of both the controllers using Electronics and pneumatics- Tuning of controller: Ziegler-Nicholas PID controller tuning- **Special controllers**: feed forward, ratio, cascade control and adaptive control.

**SELF STUDY**: Transfer function of Synchro and stepper motor

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BUSINESS SCHOOL

**Department of Management Studies**

**AY: 2017-18** **Date: 30.03.2018**

**Action taken report -Faculty Feedback**

| S.No | Analysis | Action taken report |
|---|---|---|
| 1. | Professional Development courses are to more contently with practical exercises | More practical exercises were included into the practice sessions and preplacement training was introduced by the department of corporate relations |
| 2. | New course on tax and few courses on capital markets can be offered ( wealth Management and SAPM) | Have incorporated the suggestions and new course list is prepared on the said context |
| 3. | Purchase of financial simulation software would effectively enable the finance acumen of the students | Market reference were taken and about to represent for the purchase of the same. Subscription of EBSCO to be continued |

Prepared By,

BoS Coordinator

Approved By,

BoS Chairman

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**Proof of Action Taken**

1. Proof of practical exercises and preplacement training, inclusion

Course Plan – II semester

P15BAP403-Career Readiness program

| | |
|---|---|
| Batch & Semester | 2016-18 & IV Semester |
| Course Co ordinator | Prof.Swaminathan/Dr.Gokilavani |
| Faculty members | Industry & Subject Experts |
| Course Objective | • Develop confidence that will position them for success in life and the marketplace.(3.1)<br>• Equip the graduates with the necessary skills, intellect and character to lead a business or enterprise effectively.(3.1) (3.4) |

**Learning Outcomes (LO):**

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

1. Gain confidence and be ready to take up challenges in the career(3.4)

| Session No's | Date | Topic | Duration (Hrs) | LO .No. | Methodology | Assessment activities |
|---|---|---|---|---|---|---|
| 1 | 10.01.18 | **Campus to Career :** Getting ready for transition – Handling the initial period of transition – strategies one need to follow — work life balance | 2 | 1 | Panel Discussion | Reflection questions & Test |
| 2 | 10.01.18 | **Professional Ethics:** Exhibiting excellence at workplace – aligning with corporate ethics | 2 | 1 | Discussion & Presentation | Reflection questions &test |
| 3 | 10.01.18 | **Beyond the work place:** Awareness about being Socially Responsible and sensitization of social, cultural, economic and environmental issues | 2 | 1 | Discussion & Presentation | Reflection questions &test |
| 4 | 10.01.18 | **Competencies in Career:** Work place behavior, email etiquettes | 2 | 1 | Audio & Video Lecture | Reflection quiz & Test |
| 5 | 11.01.18 | **Networking :**Building connect within and outside an organization | 2 | 1 | Discussion & Presentation Presentation | Reflection questions &test |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | by Industry expert | |
| 6 | 11.01.18 | **Competencies in Career:** Knowledge up gradation and continuing education - job-related skill to function at the workplace | 2 | 1 | Discussion & Presentation by Industry expert | Reflection questions &test |
| 7 | 11.01.18 | **Competencies in Career: Self Leadership** Developing leadership traits – understanding 360° leadership | 2 | 1 | Audio & Video Lecture | Reflection questions &test |
| 8 | 11.01.18 | **Reflections:** Advantage of career readiness, things to immediately incorporate to improve the career prospects. | 2 | 1,3 | Discussion | Presentation |

kctbs2017-19@googlegroups.com
on behalf of
K Hive <khive2018@gmail.com>
Wed 12/12/2018 5:21 AM kctbs2017-19@googlegroups.com
Cc:

- Kctbs Placement <placement@kctbs.ac.in>

+2 others
Dear All,

Greetings,

Preplacement Talks for **Johnson Tiles** will happen on 12.Dec.2018 (Wednesday)

Timing: 1.15 pm to 1.45 pm
Venue: LT2/3

Please find the list of students applied for **Johnson Tiles**

**Johnson's Tiles**

| S NO | NAME | REGISTER NUMBER |
|---|---|---|
| 1 | ALWINLEON W | 17MBA011 |
| 2 | GOWTHAM S | 17MBA046 |
| 3 | HARI PRAKASH.N | 17MBA049 |
| 4 | S.RAVISHANKAR | 17MBA116 |
| 5 | SANTHOSH KUMAR | 17MBA124 |
| 6 | SARATH KUMAR B | 17MBA126 |
| 7 | SATISH S | 17MBA131 |
| 8 | SOUNTHARRAJAN V | 17MBA147 |
| 9 | V UMA LAKSHMI | 17MBA166 |
| 10 | VARUN S | 17MBA169 |
| 11 | VIGNESHWARAN K | 17MBA176 |

***Note: The highlighted students are requested to contact VSP sir as they have applied for two companies scheduled on the same day (Thursday, 13.Dec.2018)***

Thanks and Regard,
**K-Hive Team**
**(Bestowing Knowledge)**

2. New Courses in Finance – List

**Finance Electives**

| S.No | Course Code | Course Title | Credits | Assessment | | Page No. |
|---|---|---|---|---|---|---|
| | | | | CAM | EoS | |
| 1 | P17BAEEF01 | Commercial Banking | 4 | 50 | 50 | 51 |
| 2 | P17BAEEF02 | Retail Banking | 4 | 50 | 50 | 52 |
| 3 | P17BAEEF03 | Accounting for Banking | 4 | 50 | 50 | 53 |
| 4 | P17BAEEF04 | Credit Management | 3 | 50 | 50 | 54 |
| 5 | P17BAEEF05 | Legal & Regulatory Aspects of Banking | 4 | 50 | 50 | 55 |
| 6 | P17BAEEF06 | Trade Finance | 4 | 50 | 50 | 56 |
| 7 | P17BAEEF07 | International Finance | 4 | 50 | 50 | 57 |
| 8 | P17BAEEF08 | Rural Banking and Micro Finance | 3 | 50 | 50 | 58 |
| 9 | P17BAEEF09 | Merchant Banking and Financial Services | 3 | 50 | 50 | 59 |
| 10 | P17BAECF10 | Consumer Lending | 1 | 50 | - | 60 |
| 11 | P17BAEEF11 | Security Analysis and Portfolio Management | 4 | 50 | 50 | 61 |
| 12 | P17BAEEF12 | Securities Operations and Risk Management | 3 | 50 | 50 | 62 |
| 13 | P17BAEEF13 | Wealth Management 1 | 4 | 50 | 50 | 63 |
| 14 | P17BAECF14 | Behavioural Finance | 1 | 50 | - | 64 |
| 15 | P17BAEEF15 | Wealth Management 2 | 4 | 50 | 50 | 65 |
| 16 | P17BAEEF16 | Mutual Funds | 4 | 50 | 50 | 66 |
| 17 | P17BAEEF17 | Equity Derivatives Management | 3 | 50 | 50 | 67 |
| 18 | P17BAEEF18 | Taxation | 3 | 50 | 50 | |
| 19 | P17BAECF19 | Personal Financial Planning | 1 | 50 | - | |