**PART – II**

Evaluators’

Space

**Department Summary**

**(Criterion III to VIII)**

**D. 0.1. Name and Address of the Department:**

**Department of Electrical Engineering**

Sant Dnyaneshwar Shikshan Sanstha’s

Annasaheb Dange College of Engineering &Technology, Ashta

Tal: Walwa, District: Sangli, Maharashtra. India. Pin – 416301

**D.0.2. Name, designation, telephone numbers and e-mail id of the contact person for NBA**

**Mr. Iranna Madivalappa Korachagaon**

Assistant Professor & Head

Department of Electrical Engineering

Mobile: +919860088339, Email: irannamk@gmail.com

**D.0.3. History of the Department:**

Electrical Engineering Program was introduced at Annasaheb Dange College of Engineering and Technology in the academic year 2004 – 05, with a sanctioned intake of 60 students. The demand for electrical engineers in industries, state electricity boards and private sectors engaged in electricity generation is more than the engineers available. Because of periodical revisions in the syllabi and introduction of electronics related subjects, electrical engineers get acquainted with latest developments in the electrical and electronics engineering field and can handle present solid state electronic devices. The department has excellent industry institute interaction and provides services like consultancy, design and testing to the industries.

Since the commencement of the program, the department has made sincere efforts in the development of students through training and industrial visits. Two batches of electrical engineering are passed out from the college. The department is proud to mention that four students have appeared in the merit list of the Shivaji University ranking among top 10 for the academic year 2008-09.

Apart from the curriculum, students from electrical engineering department have won prizes in co-curricular and extra curricular activities. Also the department has formed trekking group and student association (EESA) to promote the students talent and their upliftment.

The department enjoys the mixture of experienced and fresh faculty members. Two faculty members are pursuing their Ph.D.s and two members are pursuing their PG degree.

|  |  |
| --- | --- |
| **Program of study** | **Description** |
| UG in Electrical Engineering | Started with **60** seats in **2004**  Intake increased to **66** in **2008** |
| Present Status | Applying for accreditation by NBA |

**D.0.4. List the names of the Programmes/Departments which share human resources and/or the facilities of this Department/ Programmes**

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Department of Electrical Engineering shares its faculty/ facility with following 3 departments:

* Department of Mechanical Engineering
* Department of Electronics & Telecommunication Engineering
* Department of Basic Sciences

|  |  |  |  |
| --- | --- | --- | --- |
| **Sr. No.** | **Name of Faculty / Facility** | **Department / Program** | **Nature of work** |
| Faculty shared | | | |
| 1 | S. S. Katre | Basic Sciences | Academics |
| 2 | A.C. Joshi | Electronics and telecommunication | Academics |
| 3 | S.K. Shaikh | Mechanical Engineering | Academics |
| 4 | C.S. Bandgar | Basic Sciences | Academics |
| 5 | K.M. Khan | Basic Sciences | Academics |
| 6 | H.M. Mallad | Basic Sciences | Academics |
| Facility shared | | | |
| 1 | Electrical Machine Laboratory | Basic Sciences | Academics  Practical |
| 2 | Electrical Machine & Electrical Measurement Lab | Electronics & Telecommunication | Academics  Practical |
| 3 | Electrical Machine Laboratory | Mechanical Engineering | Academics  Practical |

**D.0.5.** Total No. of Students 277 Boys \_\_\_207 \_\_\_ Girls \_\_\_\_\_70\_\_\_\_\_

**D.0.6.** Total No. of Employee 20 Male \_\_\_\_16\_\_\_\_ Female \_\_\_04\_\_\_\_\_

**D.0.7. Minimum and maximum number of faculty and staff on roll during the current and previous two academic years (1st July to 30th June) in the Department:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **CAY**  **(2009 – 10)**  **(Till Oct. 15)** | | **CAY – 1**  **(2008 – 09)** | | **CAY – 2**  **(2007 – 08)** | |
| **Min** | **Max** | **Min** | **Max** | **Min** | **Max** |
| Teaching faculty in the  Department | 08 | 15 | 09 | 16 | 07 | 10 |
| Teaching faculty with  the Programme | 10 | 17 | 11 | 18 | 10 | 13 |
| Non-teaching staff | 02 | 05 | 02 | 02 | 02 | 02 |

Evaluators’

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**D.0.8. Summary of budget for the CFY (2009 – 10) and the actual expenditures**

**incurred in the CFYm1 (2008 – 09) and CFYm2 (2007 – 08) (exclusively for**

**the Department of Electrical Engineering) (Rs. In Lakhs)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Item** | **Budgeted in CFY**  **(2009-10)** | **Actual expenses in CFY**  **(2009 – 10) till**  **14 Nov 09** | **Actual Expenses**  **in CFYm1**  **(2008 – 09)** | **Actual Expenses**  **in CFYm2**  **(2007 – 08)** |
| Laboratory equipments | 6.00 | 0.16 | 0.19 | 3.51 |
| SW purchase | 4.00 | 3.43 | 1.80 | 00 |
| Laboratory consumables | 0.40 | 0.15 | 0.20 | 0.09 |
| Maintenance and spares | 0.15 | 0.05 | 0.20 |
| Travel | 0.40 | 0.09 | 0.16 | 0.09 |
| Miscellaneous expenses for academic activities | 1.00 | 0.02 | 0.15 | 0.07 |

**Criterion III: Students’ Entry and Outputs (150)**

**III-P.1 Students admission (10)**

**Admission Intake**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Item** | **CAY**  **(2009 – 10)** | **CAY – 1**  **(2008 – 09)** | **CAY – 2**  **(2007 – 08)** | **CAY – 3**  **(2006 – 07)** |
| Sanctioned Intake Strength in the program | 66 | 66 | 60 | 60 |
| No. of total admitted students in First year | 66 | 65 | 60 | 60 |
| No. of total admitted students (including lateral entries in 2nd year, if any), belonging to the same batch | 77  (52+25) | 78  (69+09) | 63  (23+40) | 44  (12+32) |

**Admission Quality:** Divide the total admitted ranks (or percentage-marks) into 5 or a few more meaningful ranges

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **MH-CET Ranking** | **CAY**  **(2009 – 10)** | **CAY – 1**  **(2008 – 09)** | **CAY – 2**  **(2007 – 08)** | **CAY – 3**  **(2006 – 07)** | |
|  | CET | CET | CET | MH-CET | Nos. |
| 1 to 10,000 | --- | 01 | --- | Above 125 | 04 |
| 10,001 to 20,000 | 04 | 05 | 03 | 125 – 105 | 06 |
| 20,001 to 50,000 | 31 | 33 | 30 | 85 – 104 | 10 |
| 50,001 to 1,00,000 | 19 | 14 | 11 | 65 – 84 | 25 |
| 1,00,001 to 2,00,000 | --- | --- | --- | 45 – 64 | 12 |
| Above 2,00,000 | --- | --- | 03 | Below 45 | 03 |
| Admitted without rank | 12 | 12 | 13 | --- | |
| Total | 66 | 65 | 60 | 60 | |

**III-P.2 Success Rate (30)**

Provide data for the past 7 batches of students (Successfully completed implies Zero Backlogs)

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|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Year of Entry (in reverse  chronological  order) | No of Students  Admitted in 1st year + Admitted  in 2nd year  (x + y) | No of Students  successfully  completed  1st year | No of Students  successfully  completed  2nd year | No of Students  successfully  completed  3rd year | No of Students  successfully  earned their  degree in just 4 years |
| 2009 – 10 | 66 |  |  |  |  |
| 2008 – 09 | 65 | 36 + 25 |  |  |  |
| 2007 – 08 | 60 | 36+ 09 | 37 |  |  |
| 2006 – 07 | 60 | 18 + 40 | 24 | 21 |  |
| 2005 – 06 | 19 | 09 + 32 | 22 | 16 | 16 |
| 2004 – 05 | 26 | 17+ 17 | 14 | 12 | 10 |

Success Rate = 30 \* Mean of Success Index (SI) for past 3 batches

SI = (No. of students who cleared the program in the minimum period of course duration) / (No. of students admitted in the first year of that batch)

|  |  |  |  |
| --- | --- | --- | --- |
| **Items** | **LYG or**  **CAYm4**  **2005 – 06** | **LYG – 1 or**  **CAYm5**  **2004 – 05** | **LYG or**  **CAYm6**  **2003 – 04** |
| No. of students admitted in the corresponding First Year | 19 | 26 | NA |
| No. of students who have graduated in 4 years | 16 | 10 | NA |
| Success Index (SI) | 0.84 | 0.38 | NA |

Av. SI = **\_0.61\_**

Success Rate = 30 \* Av. SI = **30 X 0.61 = 18.30**

**III-P.3 Academic performance (30)**

Academic Performance = 3 \* API

Where API = Academic Performance Index

= Mean of Cumulative Grade Point Average of all the Students on a 10 point CGPA System

OR

= Mean of the percentage of marks of all students / 10

Evaluators’

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|  |  |  |  |
| --- | --- | --- | --- |
| **Items** | **LYG or**  **CAYm4**  **(2005 – 06)** | **LYG or**  **CAYm5**  **(2004 – 05)** | **LYG or**  **CAYm6**  **(2003 – 04 )** |
| Approximating the API by the following mid-point analysis | | | |
| No of students in 10.0 <= CGPA < 9.0 | --- | --- | NA |
| No of students in 9.0 <= CGPA < 8.0 | --- | --- | NA |
| No of students in 8.0 <= CGPA < 7.0 | 04 | --- | NA |
| No of students in 7.0 <= CGPA < 6.0 | 23 | 10 | NA |
| No of students in 6.0 <= CGPA < 5.0 | --- | --- | NA |
| No of students in 5.0 <= CGPA < 4.5 | --- | --- | NA |
| Total | 27 | 10 | NA |
| Percentage of all the students (API) | 6.645 | 6.510 | NA |

Av. API = \_\_\_\_6.5775\_\_\_\_\_

Academic Performance = 3 x Av. API = **\_19.73\_**

**III-P.4 Placement and higher studies (40)**

Assessment Points = 40 \* (X + 1.25 \* Y) / N

Where X = Number of students placed,

Y = Number of students admitted for higher studies with valid qualifying scores/ranks,

N = Total number of students who were admitted in the batch

Subject to Max Assessment Points = 40.

|  |  |  |  |
| --- | --- | --- | --- |
| **Items** | **LYG**  **2008 – 09** | **LYGm1**  **2007 – 08** | **LYGm2**  **2006 - 07** |
| No of Admitted students corresponding to LYG (N) | 32 | 12 | NA |
| Noof students who obtained jobs as per the record of placement office (X1) | NIL | NIL | NA |
| No. of students who found employment otherwise at the end of the final year (X2) | 21 | 09 | NA |
| X = X1 + X2 | 21 | 09 | NA |
| Number of students who went for higher studies with valid qualifying scores/ranks (Y) | 02 | 01 | NA |
|  |  |  |  |
| Assessment Points | 29.375 | 34.167 | NA |

Average Assessment Points: **31.771**

**III-P.5 Professional Activities (20)**

Evaluators’

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**III-P.5.1 Professional societies/ chapters and organizing engineering events (4)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sr. No.** | **Date / Duration** | **Category** | **Name of the event** | **Sponsor** |
| 1 | 5-7 Nov. 2009 | Workshop | Using ETAP for power system analysis. | Department |
| 2 | 31 Oct. 2009 | EDP seminar | Software solutions as teaching aids by Mr. A.C. Joshi and Mr. P.R. Choube | Employee  Development Cell |
| 3 | 24 Oct. 2009 | EDP seminar | Time Management by Mr. S.U. Ranade | Employee  Development Cell |
| 4 | 10 Oct 2009 | EDP seminar | Safety while working on Electrical Equipment by S.S. Katre | Employee  Development Cell |
| 5 | 22 – 31 Dec 2008 | Training | Introduction to 8085 microprocessor | EESA |
| 6 | 26 – 29 Dec 2007 | Training | Learning linear integrated circuits using OrCAD | EESA |
| 7 | 15 Sept 2007 | Guest lecture | Higher Education Opportunities Abroad | EESA |

**III-P.5.2 Organization of paper contests, design contests etc. and their achievements (4)**

At the departmental level

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sr.**  **No.** | **Date** | **Category** | **Name of the event** | **Achievement** |
| 1 | 15/08/2009 | Technical quiz | TEQUIZ | Motivating the students for appearing the GATE 2010 |
| 2 | 06/03/2009 to 07/03/2009 | Project Exhibition | PROFEST 09 | Students improves their technical and presentation skills |
| 3 | 14/03/2009 | e-lecture | e-lecture by  Sam Pitroda | Motivating students for learning newer technologies |
| 4 | 20/09/2008 | Program on PLC | PLC & It’s Industrial Applications | Creating awareness among students about industrial automation |
| 5 | 22/03/2008 | Project Exhibition | First Year Project exhibition | Encouraging first year students for innovation, design & hands on experience |

**III-P.5.3 Publication of technical magazines, newsletters etc. (4)**

List the above publications along with the names of the editors, publishers etc.

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|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sr. No.** | **Year** | **Name of editor / publisher** | **Date of release** | **Title** |
| 1 | 2010 | HOD Electrical | To be released on 26th January 2010 | EE News Letter |
| 2 | 2009 | Engineers of India (EOI)\* | Weekly | Engineers of India |
| 3 | 2009 | HOD Electrical | December 25, 2008 | EE News Letter |
| 4 | 2009 | Principal | March 2009 | Dnyanada |
| 5 | 2008 | Principal | March 2008 | Dnyanada |

\* 03 members from department of electrical engineering are representatives in EOI

**III-P.5.4 Entrepreneurship initiatives, product designs, innovations (4)**

Specify the efforts and achievements

* Consultancy services to M/S KHARE ELECTROTRANS, Tasgaon for transformer testing & design verification
* Load survey of Shivaji University, Kolhapur for finding opportunities in electrical power saving
* Inspection at “Water Purification Plant” for harmonics and power consumption. Islampur Municipal Corporation, Islampur.
* Industrial visit to 220KVA substation at Vishrambag, Sangli
* Visit to hydro-electrical power generation station at Radhanagari and Kalambawadi
* Visit to Wind generation site of ‘Suzlon’ at Ghatnandre.
* Visit to water purification plant at Miraj.

**III-P.5.5 Publications and awards in inter institute events by students of the programme of study (4)**

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Include a Table having those publications, which fetch awards by students in the events/conferences organized by other institutes. Include a tabulated list of all other student publications in a separate annexure.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Sr.**  **No** | **Name of the Program** | **Organizer** | **Name of the Student/s** | **Academic Year** | **Rank/ Status** | **Event** |
| 1 | Profest09 | ADCET, Ashta | Sutar Suresh | 2008 - 09 | 2nd  prize | project Presentation |
| 2 | Sneha 2009 | ADCET, Ashta | Kurolikar Sanket | 2008 - 09 | Winner | Drama |
| 3 | Zonal Sports | Shivaji University, Kolhapur | Patil Manoj | 2008 - 09 | Winner | Chess |
| 4 | Sneha 2009 | ADCET, Ashta | Patil Manoj | 2008 - 09 | Winner | Chess |
| 5 | Antarnad | BATU, Lonere | Salvi Kalpesh | 2007 - 08 | 2nd prize | Musical skit |
| 6 | Antarnad | BATU, Lonere, | Salvi Kalpesh | 2007 - 08 | 1st prize | Shell Collection |
| 7 | Antarnad | BATU, Lonere | Salvi Kalpesh | 2007 - 08 | 3rd prize | Poem |
| 8 | Sneha2007 | ADCET, Ashta | Sutar Suresh | 2007 - 08 | 1st prize | Kabbadi |
| 9 | Sneha2008 | ADCET, Ashta | Sutar Suresh | 2007 - 08 | Runner | Kabbadi |
| 10 | Sneha 2007 | ADCET, Ashta | Patil Manoj | 2006 - 07 | 1st prize | Chess |
| 11 | Sports | ADCET, Ashta | Pujari Digambar | 2006 - 07 | 1st prize | Kabadi |
| 12 | Sports | ADCET, Ashta | Pujari Digambar | 2006 - 07 | 2nd prize | Khokko |

**III-P.6 Students’ Projects Quality (20)**

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|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Name of**  **the**  **Student(s)** | **Project**  **Title** | **Areas of**  **Specialization** | **Project**  **Supervisor** | **Contribution/**  **Achievement/ Research Output** | **Matching**  **with the**  **stated PEOs** | **Publication** |
| **2007 – 08** | | | | | | |
| P.R. Choube  J.D. Patil  S.B. Kumbhar  R.D. Dundage | Multipurpose use of induction motor | Electromagnetic induction  & Machines | S.S. Katre | Induction motor as welding transformer | Y | Nil |
| A.S. Mulla  S.G. Mane  R.S. Bhatkar  S.S. Yeole | Microcontroller based non contact type digital tachometer | Microcontroller | S.S. Katre | Laboratory development | Y | Nil |
| C.S. Bandgar  Y.D. Tale  P.R. Chougule  S.J. Desai | Speed control of DC shunt motor using thyristor | Microcontroller & Power Electronics | S.S. Katre | Laboratory development | Y | Nil |
| **2008 – 09** | | | | | | |
| Y.D. Mane  S.S. Mane  K.S. Sharma  A.H. Kulkarni  S.M. Sutar | Water purification plant automation | Automation & water supply engineering | A.C. Joshi | Research on water management | Y | Nil |
| B.C. Patil  B.G. Kashid  S.K. Shaikh  H.D. Apte | Green House Automation | Microcontroller & Green House | A.C. Joshi | Contribution to green house developments at Kupwad, Sangli | Y | Nil |
| A.M. Raut  R.P. Gunaware  B.K. Kharat  H.M. Mallad  A.R. Dere | Advanced Electricity billing system | Wireless Communication | S.L. Pawar | Use of ASIC components for electricity usage metering | Y | Nil |
| G.P. Raut  S.B. Patil  A.A. Parsewar  T.A. Shaikh  S.D. Raste | PID Control of DC series motor using LABView | LABView | A.N. Shinde | Laboratory development | Y | Nil |
| S.B. Patil  P.N. Yadav  S.H. Gidde  B.V. Kumbhar | Induction generator | Self excited induction generator | S.S. Katre | Low cost, low maintenance electrical generation | Y | Yes |

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|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Name of**  **the**  **Student(s)** | **Project**  **Title** | **Areas of**  **Specialization** | | **Project**  **Supervisor** | **Contribution/**  **Achievement/ Research Output** | **Matching**  **with the**  **stated PEOs** | **Publication** |
| **2009 – 10** | | | | | | | |
| B.S. Waware  P.B. Phadatare  M.D. Shinde  K.B. Kadam  M.G. Kulkarni | Water Supply automation & disaster management | Microcontroller  & Water Supply Engineering | S.S. Mane | | Research on water management | Y | Nil |
| A.M. Jadhav  S.S. gadage  N.R. Patil  A.R. Borate  A.A. Sangar | Wireless control of electrical equipments in remote areas | Communication engineering & Power electronics | A.C. Joshi | | A remote unit for water management | Y | Nil |
| P.D. More  A.P. Redekar  S.M. Patel  N.G. Bhosale  S.N. Hanchanalkar  M.P. Hirugade | Pico hydro generation using Induction generator | Renewable Energy Sources | S.S. Katre | | Research on induction generator | Y | Nil |
| R B Patil  G M Galande  D Y Saraphale  A B Patil  M D Salunke | GSM Based motor control | Microcontroller / Interfacing | S.S. Gade | | Control of electrical motor in farms/ remote areas | Y | Nil |
| S. Dhokate  P.B. Pawar  S.D. Kusale  M.Patil | Domestic wind mill – generation scheme | Renewable energy | S.S. Katre | | College development | Y | Nil |

**Criterion IV: Faculty Contributions**

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**List of Department Faculty: Exclusively for the Program / Shared with other Programs**

\* indicates faculty shared with other programs.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Name of the Faculty** | **Designation (administrative positions, if any)** | **Qualification, University and year of graduation** | **Areas of Specialization** | **Date of joining the department/ program; Load sharing with more than one programs** | **No. of research publications in journals and conferences since joining the department and Total no. of such Publications** | **No. of current R & D and consultancy projects and the amount** |
|  |  |  |  |  | NJ,NC,IJ,IC |  |
| \*S.S. Katre | Professor  (Vice Principal academic) | ME  (Power Systems) | Power Systems | 12/07/2004 | 00,06,00,00  =06 | NIL |
| I.M. Korachagaon | Assistant Professor  Head | M. Tech.  (Energy Systems) | Renewable Energy | 01/03/2007 | 02,01,02,00  =05 | NIL |
| A.N. Shinde | Lecturer | BE Electrical | Control Systems | 01/01/2005 | 00,00,00,00 | NIL |
| \*A.C. Joshi | Lecturer | BE Electronics | Communication Engineering | 17/07/2006 | 00,01,00,00  =01 | NIL |
| \*C.S. Bandgar | Lecturer | BE Electrical | Electrical Machines | 01/07/2008 | 00,00,00,00 | NIL |
| D.L. Raokhande | Lecturer | BE Electrical | Industrial Drives | 02/01/2009 | 00,00,00,00 | NIL |
| S.U. Ranade | Lecturer | BE Electrical | Signal Processing | 16/12/2008 | 00,00,00,00 | NIL |
| S.S. Mane | Lecturer | BE Electrical | Power Systems | 21/06/2009 | 00,00,00,00 | NIL |
| S.B. Jamadar | Lecturer | BE Electrical | Electrical Networks | 14/07/2009 | 00,00,00,00 | NIL |
| \*S.K. Shaikh | Lecturer | BE Electrical | Electrical Generation | 14/07/2009 | 00,00,00,00 | NIL |
| \*K.M. Khan | Lecturer | BE Electrical | Control Systems | 20/07/2009 | 00,00,00,00 | NIL |
| A.H. Kulkarni | Lecturer | BE Electrical | Analog Electronics | 10/07/2009 | 00,00,00,00 | NIL |
| S.B. Khade | Lecturer | BE E&TC | Signal processing | 08/07/2009 | 00,00,00,00 | NIL |
| \*H.M. Mallad | Lecturer | BE Electrical | Electromagnetic Engineering | 16/09/2009 | 00,00,00,00 | NIL |

**IV-P.1 Teacher - student ratio (20)**

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Assessment = 20 \* TSR / 15

Where TSR = Teacher Student Ratio

= (x + y + z) / N

Subject to Max TSR = 15;

Where x = No. of students in 2nd year of the program

y = No. of students in 3rd year of the program

z = No. of students in 4th year of the program

N = Total No. Faculty Members in the program

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Year** | **x** | **y** | **y** | **x+y+z** | **N** | **TSR** | **Assessment** |
| 2007 – 08 | 63 | 39 | 12 | 114 | 09 | 12.66 | 16.83 |
| 2008 – 09 | 79 | 39 | 32 | 150 | 11 | 13.63 | 18.17 |
| 2009 – 10 | 77 | 97 | 36 | 210 | 15 | 14.20 | 18.93 |
| **Average** | | | | | | **14.50** | **17.97** |

Average TSR of the department is 14.50, which is better than 15. Therefore average assessment should be 20.

**IV-P.2 Cadre ratio (20)**

Assessment = 20 \* CRI

Where CRI = Cadre Ratio Index

= 2.25 (2x + y) / N

Subject to Max CRI = 1.0;

Where x = No. of professors in the program

y = No. of associate professors / readers in the program

N = Total No. Faculty Members in the program

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Year** | **x** | **y** | **N** | **CRI** | **Assessment** |
| 2007 – 08 | 00 | 02 | 09 | 0.50 | 10.00 |
| 2008 – 09 | 01 | 01 | 11 | 0.61 | 12.27 |
| 2009 – 10 | 01 | 01 | 15 | 0.45 | 09.00 |
| **Average Assessment** | | | | | **10.42** |

**IV-P.3 Faculty qualifications (40)**

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Assessment = 4 \* FQI

Where FQI = Faculty Qualification Index

= (10 \* x + 6 \* y + 4 \* z) / N

Where x = No. of Faculty Members with Ph. D in Engineering

y = No. of Faculty Members with M. E / M. Tech

z = No. of Faculty Members with B. E / B. Tech

N = Total No. Faculty Members

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Year** | **x** | **y** | **z** | **N** | **FQI** | **Assessment** |
| 2007 – 08 | 00 | 02 | 05 | 07 | 04.57 | 18.28 |
| 2008 – 09 | 00 | 02 | 07 | 09 | 04.44 | 17.76 |
| 2009 – 10 | 00 | 02 | 13 | 15 | 04.27 | 17.08 |
| **Average Assessment** | | | | | | **17.70** |

**IV-P.4 Faculty retention (20)**

Assessment = 4 \* RPI / N

Where RPI = Retention Point Index

= Points assigned to all Faculty

Where Points assigned to a faculty = 1 point for each year of experience at the Institute but not exceeding 5.

N = Total No. of Faculty Members

|  |  |  |  |
| --- | --- | --- | --- |
| **Item** | **2007 – 08** | **2008 – 09** | **2009 – 10** |
| No. of faculty with less than 1y (x0) | 02 | 04 | 07 |
| No. of faculty with 1y <= period < 2y (x 1) | 03 | 00 | 03 |
| No. of faculty with 2y <= period < 3y (x2) | 01 | 03 | 00 |
| No. of faculty with 3y <= period < 4y (x3) | 01 | 01 | 02 |
| No. of faculty with 4y <= period < 5y (x4) | 00 | 01 | 01 |
| No. of faculty with more than 5 y (x5) | 00 | 00 | 01 |
| N | 07 | 09 | 15 |
| RPI = x1 + 2x2 + 3x3 + 4x4 +5x5 | 08 | 13 | 18 |
| Assessment | 04.57 | 05.78 | 4.8 |
| **Average Assessment** | | | **05.05** |

**IV-P.5 Research publications and IPR (20)**

Evaluators’

Space

Evaluators’

Space

Faculty Points in Publications and IPR (FPPR) = Assessment of Publications +

Assessment of IPR

Assessment of Publications = 3 \* Sum of the Research points scored by each Faculty member / No. of sanctioned positions of Professors and Readers

Assessment of IPR = Sum of the IPR points scored by each Faculty member / No. of sanctioned positions of Professors and Readers

Note: A faculty member scores at the most 5 Research points depending upon the quality of the research papers published in the past 3 years. For this research papers considered are those (i) which can be located on Internet and/or are included in hard-copy volumes/proceedings, published by a well known publishing house, and (ii) the faculty member’s affiliation, in the published paper, is the one of the same college/institute. For multiple authors, every author of the same college will earn the points. Similarly, a faculty member scores 1 point for each IPR subject to a maximum of 5 points. Include a list of all such publications along with details of DOI, publisher, month/year, etc.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Name of faculty**  **(contributing to FPPR)** | **CAYm2**  **2007 – 08** | | | **CAYm1**  **2008 – 09** | | | **CAY**  **2009 – 10** | | |
| **Pub**  **Points**  **(x)** | **IPR**  **Points**  **(y)** | **Pub +**  **IPR**  **Points**  **(3x +y)** | **Pub**  **Points**  **(x)** | **IPR**  **Points**  **(y)** | **Pub +**  **IPR**  **Points**  **(3x +y)** | **Pub**  **Points**  **(x)** | **IPR**  **Points**  **(y)** | **Pub +**  **IPR**  **Points**  **(3x +y)** |
| I.M. Korachagaon | --- | --- | --- | 02 | 02 | 08 | --- | 01 | 01 |
| S.S. Katre | --- | --- | --- | 02 | --- | 06 | --- | --- | --- |
| A.C. Joshi | --- | --- | --- | 01 | --- | 03 | --- | --- | --- |
| Sum | --- | | | 17 | | | 01 | | |
| N (Min. N is 3)  (excluding Asst Prof.) | 03 | | | 03 | | | 03 | | |
| Assessment FPPR =  (Sum/N) | 00 | | | 5.66 | | | 0.33 | | |
| **Average assessment** | | | | | | | | | **3.0** |

**International Journals**

* Iranna Korachagaon, Bapat V.N. and Irfan Anjum Magami, 2008, Few site-independent models for estimating global solar radiation for west and south Asian countries, *International Journal of Mechanical and Materials Engineering*, University of Malaya, 50603 Kuala Lumpur, Malaysia, Vol. 3 (2008), No. 2., pp 139-144.
* Iranna Korachagaon and Bapat V.N., 2008, Generalized Site-independent Models for Estimating Global Solar Radiation for Asia & Africa, *International Journal of Emerging Technologies and Applications in Engineering, Technology and Science*, IJ-ETA-ETS (ISBN: 0974-3588), Jul – Dec 2008, pp 210-215.

**Conference Proceedings**

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* Iranna Korachagaon and Bapat V.N., 2009, Global solar radiation estimation from geographical and meteorological data for India, *National conference on Recent Trends in Energy*, PVPIT Budhagaon, Sangli (Apr 24), pp 198-203.
* Iranna Korachagaon and Bapat V.N., 2006, ANN techniques for global solar radiation measurement – A Review*,* *All India Seminar Institute of Engineers Mysore* (Mar 11-12), pp 62-69.
* Iranna Korachagaon and Bapat V.N., 2006*,* Global solar radiation measurement: Conventional methodologies – A Review*, All India Seminar Institute of Engineers Jaipur* (Feb 24-25), pp IV-5.

**IV-P.6 Externally funded R & D projects and consultancy work (20)**

Assessment of R&D & Consultancy Projects = 4 \* Sum of FPPC by each faculty / No. of sanctioned positions of Professors and Readers

Where FPPC = Faculty Points in Projects and Consultancy

Note: A faculty member gets at the most 5 points depending upon the amount of externally funded R & D project and/or consultancy work. For multiple faculty members involved in a single project, every faculty member will earn the points, depending on the funding agency as given below:

5 points for funding by National Agency,

4 points for funding by State Agency,

3 points for funding by private sector, and

2 points for funding by the sponsoring Trust/Society

Points to be awarded, if the total fund available for a project is of minimal one lakh rupees in the CFY

|  |  |  |  |
| --- | --- | --- | --- |
| **Name of faculty**  **(contributing to FPPC)** | **FPPC Points** | | |
| **2007 – 08** | **2008 – 09** | **2009 – 10** |
| S S Katre \* | 00 | 00 | 02 |
| N (Min. N is 3) (excluding Asstt Prof.) | 03 | 03 | 03 |
| Assessment FPPC = 4 x Sum/N | 00 | 00 | 0.66 |
| **Average Assessment** | | | **0.88** |

\*Project funded by Sant Dnyaneshwar Shikshan Sanstha’s ADCET Ashta.

**IV-P.7 Interactions of faculty members with outside world (10)**

Assessment of Interaction = 2 \* Sum of IP by each faculty

/ No. of sanctioned positions of Professors and Readers

Where IP = Interaction points scored by each faculty member

Note:

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A faculty member gets at the most 5 Interaction Points depending upon the type of Institution or R&D Lab or Industry. Only those interactions will be considered who have resulted in joint quality publication, R& D projects and/or consultancy. The points earned by each faculty shall be decided as given below:

5 points for interaction with a well known Institute/University abroad,

4 points for interaction with Institute of Eminence in India or National Research Labs,

3 points for interaction with University / Industry in India and Institute/University (not covered) above

2 points for interaction with State Level Institutions and

1 point for interaction with private affiliated Institutions.

Point to be warded, are for those activities, which result in joint efforts in publication of books/research paper, pursuing externally funded R & D projects and/or development of semester-long course/teaching modules.

|  |  |  |  |
| --- | --- | --- | --- |
| **Name of faculty**  **(contributing to IP)** | **IP Points** | | |
| **2007 – 08** | **2008 – 09** | **2009 – 10** |
| S.S. Katre | 05 | 05 | 03 |
| I.M. Korachagaon | 01 | 03 | 01 |
| A.C. Joshi | 03 | 03 | 04 |
| A.N. Shinde | 03 | 00 | 00 |
| Sum | 12 | 11 | 08 |
| N (Min. N is 3) (excluding Asst Prof.) | 03 | 03 | 03 |
| Assessment IP = 2 x Sum/N | 08 | 07.33 | 05.33 |
| **Average Assessment** | | | **06.88** |

**Criterion V: Facilities and Technical Support**

Description of Class rooms, faculty rooms, seminar and conference halls:

(Entries in the following table are sample entries)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Room Description** | **Usage** | **Shared / Exclusive?** | **Capacity**  **(Sq. M)** | | **Rooms Equipped with** |
| **Sq. M** | **No. of students** |
| Class Room No. 1 | Class room for second year | Exclusive | 83.69 | 80 students | Black board, LCD projector, PC, |
| Class Room No. 2 | Class room for third year | Exclusive | 67.59 | 80 students |
| Class Room No. 3 | Class room for final year | Exclusive | 83.76 | 80 students |
| Tutorial rooms 01 | Batch tutorials | Exclusive | 29.38 | 25 students | Black board |
| Seminar Room 01 | Batch wise seminars | Exclusive | 40.92 | 40 students | LCD projector, PC, |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Room Description** | **Usage** | **Shared / Exclusive?** | **Capacity**  **(Sq. M)** | | **Rooms Equipped with**  Evaluators’  Space |
| **Sq. M** | **No. of students** |
| Departmental Library | Immediate references | Exclusive | 35.89 | 08 students | Datasheets & books |
| Departmental office | Departmental record upkeep | Exclusive | 22.24 | --- | PC, printer |
| HOD Cabin/ Meeting room | HOD cabin /Meetings | Exclusive | 23.67 | 15 Chairs | PC, printer, scanner, internet |
| Faculty rooms (13) | Faculty cabin | Exclusive | 9.42 | 01 faculty & 3 chairs | Cubical with storage. PC with internet |

**V-P.1 Class rooms in the department (15)**

**V-P.1.1 Enough rooms for lectures (core/electives), seminars, tutorials, etc for the program (5)**

Assessment based on the information provided in the above table

Department has enough number of lecture, seminar and tutorial rooms as per the AICTE norms.

|  |  |  |  |
| --- | --- | --- | --- |
| **Sr. no** | **Type of room** | **Quantity required**  **as per norms** | **Quantity available** |
| 1 | Class rooms | 3 | 3 |
| 2 | Seminar rooms | 1 | 1 |
| 3 | Tutorial rooms | 1 | 1 |

**V-P.1.2 Teaching aids – black/white-board, multimedia projectors, etc. (5)**

Assessment based on the information provided in the above table

|  |  |  |  |
| --- | --- | --- | --- |
| **Sr. no** | **Type of teaching aid** | **Quantity** | **Whether sufficient** |
| 1 | Black board | 10 | Yes |
| 2 | White board | 5 | Yes |
| 3 | LCD projector | 3 | Yes |
| 4 | OHP | 1 | Yes |

**V-P.1.3 Acoustics, class room size, conditions of chairs/benches, air circulation, lighting, exits, ambiance, etc. (5)**

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Assessment based on the information provided in the above table and the inspection thereof

* Department has sufficient number of classrooms with adequate capacity to accommodate students.
* Classrooms are having good ventilation with sufficient natural & artificial light.
* All classrooms are provided with modern furniture, good ambiance and exit facility.
* Each class room and seminar room is equipped with LCD projector, Black board, Computer and internet connection.

**V-P.2 Faculty rooms in the department (15)**

**V-P.2.1 Availability of individual faculty rooms (5)**

Assessment based on the information provided in the above table

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Faculty rooms  (13) | Faculty cabin | Exclusive | 9.42  Sq. M area | Furniture: 3 chairs | Facility:  Cubical with storage. PC with internet |

* Faculty rooms are available for individual faculty.
* Total no. of faculty rooms in the department are13.

**V-P.2.2 Room equipped with white/black board, computer, internet, etc. (5)**

Assessment based on the information provided in the above table

Faculty rooms are equipped with modular furniture, PC, internet and storage space.

**V-P.2.3 Usage of room for discussion/counseling with students (5)**

Assessment based on the information provided in the above table and the

inspection thereof

Faculty rooms are utilized for discussion and counseling of individual student. For group counseling seminar & tutorial rooms are used.

**V.P.3 Laboratories in the department to meet the curriculum requirements as well as the PEOs (25)**

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|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Curriculum Lab**  **Description** | **Exclusive**  **Used / Shared?** | **Space (SqM) / No Students** | **No. of experiments** | | **Quality of**  **Instruments** | **Lab manuals** |
| Subject | No of expt |
| Machines Lab | Exclusive | 450 / 40 | DMT | 10 | Good\* | Yes |
| ACM | 10 |
| ET&C++ | 10 |
| EMM | 10 |
| Power and Protection Lab | Exclusive | 122.06/20 | PE | 10 | Good\* | Yes |
| SWP | 10 |
| Measurements Lab | Exclusive | 115.75/20 | EM | 10 | Good\* | Yes |
| Controls Lab | Exclusive | 83.76/20 | LCS | 10 | Good\* | Yes |
| CSD | 10 |
| Computer Lab | Exclusive | 63.51/20 | PSA | 10 | Good\* | Yes |
| C++ | 10 |
| LABView | 10 |
| PSIM | 10 |
| IPM | 10 |
| Project Lab | Exclusive | 50.63/10 | MP | 10 | Good\* | Yes |
| PR | 10 |
| Micro-controller Lab | Shared | 89.24/20 | MCA | 10 | Good\* | Yes |
| Digital Signal Processing Lab | Shared | 100.24/20 | DSP | 10 | Good\* | Yes |
| Circuits and Networks Lab | Shared | 102.23/20 | ECA | 10 | Good\* | Yes |

\* Instruments are satisfactorily working & cater to conduct the laboratory experiments as per the university curriculum of the program.

**V-P.3.1. Enough labs to run all the program specific curriculum (10)**

Assessment based on the information provided in the above table

There are course specific laboratories adequately equipped with the instruments and sufficient to conduct all the experiments for the program specific curriculum.

**V-P.3.2 Availability of computing facilities available exclusively in the department (5)**

Assessment based on the information provided in the above table

Sufficient numbers of computers in respective laboratories are available. Inkjet & Dot-matrix printing facility is provided.

**V-P.3.3 Availability of labs with tech. support within and beyond working hours (5)**

Assessment based on the information provided in the above table

As per the need, the laboratory facilities are open to students and staff beyond working hours.

**V-P.3.4 Equipments to run experiments and their maintenance, Number of students per experimental set up, Size of the laboratories, overall ambience etc. (5)**

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Assessment based on the information provided in the above table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sr. No.** | **Name of Lab** | **Size**  **(Sq. M)** | **Major equipments** | **Students / Expt** |
| 1 | Electrical machines | 450 | Electrical machines, load banks (R-L-C) | 4 |
| 2 | Power and Protection | 122 | Relays, circuit breakers | 4 |
| 3 | Measurements | 115.74 | Oscilloscope | 4 |
| 4 | Controls | 83.76 | Microprocessor based temperature controller | 4 |
| 5 | Computer | 63.51 | Computers | 1 |
| 6 | Project | 50.63 | Power quality analyzer, CRO | 4 |
| 7 | Micro-controller | 89.24 | Universal programmer | 4 |
| 8 | Digital Signal Processing | 100.24 | Experimental kits | 4 |
| 9 | Circuits and Networks | 103.23 | Experimental kits | 4 |
| 10 | Communication | 83.92 | Experimental kits | 4 |

**Maintenance of Laboratory Equipments:-**

* Regular check up of equipment is carried out at the end of every semester.
* Breakdown register is maintained in the laboratories.
* As per the requirement minor repairs are carried out by the lab assistant of faculty member.
* Maintenance of computers is taken care by IT and COMPUTER department.
* Major repairs are outsourced by following the procedure of the institute.

**Overall Ambience:-**

* All laboratories are equipped with modern equipments to meet the requirement of curriculum.
* Laboratory manuals are prepared and are available in soft and hard copy.
* All laboratories are well furnished.
* Laboratories kept open beyond office hours as per the need.
* All laboratories have sufficient natural light, good ventilation with tubes and fan arrangement.
* Overall ambience of laboratory is good.

**V-P.4 Technical manpower support in the department (20)**

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|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Name of**  **the Tech**  **Staff** | **Designation**  **(Pay-scale)**  **Consolidated Pay Rs.** | **Exclusive**  **/Shared**  **Work?** | **Date of**  **Joining** | **Qualification** | | **Other**  **Technical**  **Skills gained?** | **Responsibility** |
| **At joining** | **Now** |
| Nilesh Chhagan Kanade | Lab assistant  (Rs. 3000) | Exclusive | 24/08/ 2009 | DEE | DEE | Nil | M/c Lab  Measurement Lab |
| Ravindra Sambhaji Shivsharan | Lab assistant (Rs. 3000) | Exclusive | 24/08/ 2009 | DIE | DIE | Nil | Controls Lab  S/P Lab |
| Vikram Akaram Patil | Computer operator  (Rs. 2000) | Exclusive | 22/09/ 2009 | H/W Networking | H/W Networking | Nil | Computer Lab |

**V-P.4.1 Availability of adequate and qualified technical supporting staff for program specific labs (10)**

Assessment based on the information provided in the above table

Technical staff assists teaching facility, preparation and arrangement of experimental setup. Technical staff also takes care of minor maintenance of laboratory equipments.

**V-P.4.2 Incentives, skill-up gradation and professional advancement (10)**

Assessment based on the information provided in the above table

**Criterion VI: Continuous Improvements**

**VI-P.1 Improvement in Success Index of students (10)**

**From III-P.2**

|  |  |  |  |
| --- | --- | --- | --- |
| **Items** | **LYG or**  **CAYm4**  **2005 – 06** | **LYG – 1 or**  **CAYm5**  **2004 – 05** | **LYG or**  **CAYm6** |
| Success Index (SI) | 0.84 | 0.38 | NA |

**VI-P.2 Improvement in academic performance of students (10)**

**From III-P.3**

|  |  |  |  |
| --- | --- | --- | --- |
| **Items** | **LYG or**  **CAYm4**  **2005 – 06** | **LYG – 1 or**  **CAYm5**  **2004 – 05** | **LYG or**  **CAYm6** |
| API | 6.645 | 6.510 | NA |

**VI-P.3 Enhancement of faculty qualifications and retention (15)**

**From IV-P.3 and IV-P.4**

|  |  |  |  |
| --- | --- | --- | --- |
| **Item** | **2009 – 10** | **2008 – 09** | **2007 – 08** |
| FQI | 04.27 | 04.44 | 04.00 |
| RPI | 04.80 | 05.78 | 04.57 |

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**VI-P.4 Improvement in Faculty activities in research publication, R & D work and consultancy, and interaction (15)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Item** | **2009 – 10** | **2008 – 09** | **2007 – 08** |
| FPPR | 0.33 | 05.66 | 00 |
| FPPC | 0.88 | 00 | 00 |
| IP | 5.33 | 07.33 | 08 |
| Sum | 6.54 | 13.00 | 8.00 |

**VI-P.5 Continuing education (10)**

Specify the contributory efforts made by the faculty by developing the course/lab modules and conducting\ short-term courses/workshops etc. for continuing education:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Module**  **Description** | **Any other**  **contributory**  **Inst./**  **Industry** | **Developed/**  **organized**  **by** | **Duration** | **Resource**  **Persons** | **Target**  **Audience** | **Usages &**  **citation etc.** |
| Learning Linear integrated circuits with OrCAD | In house | Electrical Department | 1 week | A.C. Joshi  S.L. Pawar | SE Electrical | Software simulation |
| Micro-processor 8085 | In house | Electrical Department | 10 days | A.C. Joshi  S.L. Pawar | TE Electrical | Familiarization |
| Micro-controller 8051 (proposed) | In house | Electrical Department | Week ends | A.C. Joshi | TE Electrical | Project & practical |

**VI-P.6 New facility created (10)**

Specify the new facility created to strengthening the curriculum and/or to meet the PEOs:

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|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Module**  **Description** | **Any other**  **contributory**  **Inst./Industry** | **Developed**  **By** | | **Duration of**  **Development** | **Resources**  **Consumed** | **Target**  **Audience** | **Usages and**  **citation etc.** |
| **In CAYm2: 2007 – 08** | | | | | | | |
| Microcontroller Lab | --- | | College | 6 months | --- | 20 | Laboratory practical |
| Industrial drives & control lab | --- | | College | 6 months | --- | 20 | Laboratory practical |
| Datasheets references added to departmental library | --- | | Department | 3 months | Stationary | 20 | Laboratory Practical & System design |
| **In CAYm1: 2008 – 09** | | | | | | | |
| LABView 8.6 | --- | | College | 4 months | --- | 5 users | Laboratory practical |
| Study room for students at night | --- | | Department | --- | --- | 30 | Night studies |
| E – books | --- | | Department | 6 months | Stationary | 60 | Academics |
| **In CAY: 2009- 10** | | | | | | | |
| ETAP 7.0.0 | --- | | College | 6 months | --- | 10 user LAN | Laboratory practical |
| Switch gear & protection lab | --- | | College | 6 months | --- | 20 | Laboratory practical |
| Project lab | --- | | College | 6 months | --- | 20 | Project design |
| E – note  (Under progress) | --- | | Departmental faculty | 1 Year | --- | 60 | Quick references |
| Internet with Wi-Fi networking | --- | | College | 6 Months | --- | 1400 | Surfing, Research |

**VI-P.7 Overall improvements (5)**

Specify the overall successive improvements in curriculum and others:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Specify the  Improvement | Improvement  brought in | Contributed By | List the PEO(s), which are strengthened | Comments, if any |
| **In CAYm2 (2007 – 08)** | | | | |
| Academic | Linear Integrated Circuits | A.C. Joshi  S.S. Katre | 1, 2, 3 | --- |
| Extra curricular  (Trekking programs) | Team work | S.L. Pawar | 4 | --- |
| **In CAYm1(2008 – 09)** | | | | |
| Extra curricular  (Trekking programs) | Team work | S.L. Pawar | 4 | --- |
| Academic | Microprocessor | S.L. Pawar | 2, 3 | --- |
| **In CAYm1(2009 – 10)** | | | | |
| Academic | Microcontroller (Planned) | A.C. Joshi | 2, 3, 4 | --- |
| Technical Report Writing | Research methodologies for UG studies | S.S. Katre  A.N. Shinde | 6 | --- |
| Additional Curriculum | English communication, GATE Preparation, Research | Department | 1,5,6 | --- |

**Criterion VII: Curriculum**

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List all the course modules along with their objectives and outcomes (in Part III):

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Course** | **Units** | | | **Science/HSS/**  **Professional**  **Core, Elective**  **or Breadth?** | | **PEOs**  **specified by**  **Affiliating**  **Univ. or the**  **College?** | **Additional**  **theory/lab/**  **assignments/**  **tests needed**  **to meet objectives?** | **Comments** |
| **Theory**  **Units / Hrs** | **Lab** | |
| **Semester – I** | | | | | | | | |
| Engineering physics/ Chemistry | 06/ 08 | | 10 | | Science | College | No | ----- |
| Engineering Mathematics – I | 06/ 06 | |  | | Science | College | No | ----- |
| Applied mechanics | 06/ 06 | | 10 | | Core | College | No | ----- |
| Engineering graphics | 06/ 08 | | 10 | | Core | College | No | ----- |
| Basic electronics & C++ | 06/ 06 | | 10 | | Breadth | College | No | ----- |
| Professional communication – I | 06/ 02 | | 10 | | HSS | College | No | ----- |
| Workshop practice – I | --- | | 10 | | Breadth | College | No | ----- |
| **Semester – II** | | | | | | | | |
| Engineering physics/ Chemistry | 06/ 08 | | 10 | | Science | College | No | ------ |
| Engineering Mathematics – II | 06/ 08 | |  | | Science | College | No | ------ |
| Basic Civil Engineering | 06/ 06 | | 10 | | Breadth | College | No | ------ |
| Basic Mechanical Engineering | 06/ 06 | | 10 | | Breadth | College | No | ------ |
| Basic Electrical Engineering | 06/ 06 | | 10 | | Core | College | No | ------ |
| Professional communication –II | 06/ 02 | |  | | HSS | College | No | ------ |
| Workshop practice – II | 06/ 02 | | 10 | | Breadth | College | No | ------ |
| **Semester – III** | | | | | | | | |
| Engineering Mathematics-III | 06/ 06 |  | | Science | | College | No | ------ |
| Analog Electronics | 06/ 06 | 10 | | Breadth | | College | No | ------ |
| Electrical Circuit Analysis | 06/ 06 | 10 | | Core | | College | No | ------ |
| DC Machines & Transformers | 06/ 08 | 10 | | Core | | College | No | ------ |
| Generation & Its economics | 06/ 06 |  | | Core | | College | No | ------ |
| Introduction to PSpice & MATLAB | 06/ 02 | 10 | | Breadth | | College | No | ------ |
| Advanced C Programming | 06/ 02 | 10 | | Breadth | | College | No | ------ |
| **Semester - IV** | | | | | | | | |
| Signals & Systems | 06/ 08 |  | | Breadth | | College | No | ------ |
| AC Machines | 06/ 08 | 10 | | Core | | College | No | ------ |
| Industrial Management & Economics | 06/ 06 |  | | HSS | | College | No | ------ |
| Electrical Measurements | 06/ 06 | 10 | | Core | | College | No | ------ |
| Digital Systems & Microprocessors | 06/ 08 | 10 | | Breadth | | College | No | ------ |
| Introduction to LABVIEW | --- | 10 | | Breadth | | College | No | ------ |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Course** | **Units** | | | **Science/HSS/**  **Professional**  **Core, Elective or Breadth?** | **PEOs**  **specified by**  **Affiliating**  **Univ. or the college?** | **Additional**  **theory/lab/**  **assignments/**  **Tests needed to meet objectives?** | **Comments**  Evaluators’  Space |
| **Theory**  **Units /Hrs** | | **Lab** |
| **Semester - V** | | | | | | | |
| Electromagnetic Engineering | | 06/ 08 |  | Breadth | College | No | ------ |
| Power Systems Analysis | | 06/ 08 | 10 | Core | College | No | ------ |
| Instrumentation Techniques | | 06/ 06 | 10 | Breadth | College | No | ------ |
| Feedback Control Systems | | 06/ 08 | 10 | Core | College | No | ------ |
| Digital Signal Processing | | 06/ 06 | 10 | Breadth | College | No | ------ |
| Mini Project | | --- | 10 | Breadth | College | No | ------ |
| Introduction to PSIM/EMTP/ETAP | | ---- | 10 | Core | College | No | ------ |
| **Semester - VI** | | | | | | | |
| Power System Stability & Control | | 06/ 08 | 10 | Core | College | No | ------ |
| Control System Design | | 06/ 08 | 10 | Core | College | No | ------ |
| Power Electronics | | 06/ 06 | 10 | Breadth | College | No | ------ |
| Microcontroller & its applications | | 06/ 08 | 10 | Breadth | College | No | ------ |
| Communication Engineering | | 06/ 06 | 10 | Core | College | No | ------ |
| Seminar | | --- | 10 | HSS | College | No | ------ |
| **Semester – VII (Old)** | | | | | | | |
| Microcontroller & Applications | | 06/ 08 | 10 | Breadth | College | No | ------ |
| Industrial Drives & Control | | 06/ 08 | 10 | Core | College | No | ------ |
| FACTS | | 06/ 08 |  | Core | College | No | ------ |
| Nonlinear & Digital Control Systems | | 06/ 08 |  | Core | College | No | ------ |
| Elective – I | | 06/ 06 |  | Elective | College | No | ------ |
| Seminar | | --- | 10 | HSS | College | No | ------ |
| Project – I | | --- | 10 | HSS | College | No | ------ |
| **Semester – VIII (Old)** | | | | | | | |
| Switchgear & Protection | | 06/ 08 | 10 | Core | College | No | ------ |
| Electrical M/C Design | | 06/ 08 | 10 | Core | College | No | ------ |
| Utilization & Energy Conservation | | 06/ 08 | 10 | Core | College | No | ------ |
| Elective - II | | 06/ 08 |  | Elective | College | No | ------ |
| Project -II | | --- | 4/w | HSS | College | No | ------ |

**VII-P.1 Contents of basic sciences, HSS, professional core and electives, and breadth (40)**

Assessment is based on the balanced composition of basic sciences, HSS, professional core and electives, and breadth to meet the PEOs. If such components are not included in the curriculum provided by the affiliated university, then the college/Inst. should make additional efforts to impart such knowledge through covering such aspects through “contents beyond syllabi”.

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**Percentage of balanced courses**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Science** | **HSS** | **Professional/ Core** | **Elective** | **Breadth** |
| 9.6% | 13.5% | 38.5% | 4.0% | 34.4% |

University has specified the course contents adequately. However to keep the students abreast of the advanced technology, provision is made in each theory subject, to cover the ‘“contents beyond syllabi”. In the teaching plan of each faculty member this is indicated by ‘\*’.

Detailed course file is prepared by each subject teacher, which includes - chapter wise notes, question bank, tutorial plan and contents, previous university examination question papers along with outcome based lesson plan cover for each lecture hour.

**VII-P.2 Emphasis on laboratory and project work (30)**

Assessment is based on the balanced laboratory and project work along with theory, to meet the PEOs. If enough lab/design/experimentation components are not included in the curriculum provided by the affiliated university, then the college/Inst. should make additional efforts to impart such knowledge through covering such aspects through “contents beyond syllabi”.

As per the university guidelines 8-10 experiments are to be conducted. However for the relevant subjects, provision is made to conduct 1 or 2 experiments beyond the specified list, but within the scope of the subject. This is indicated by ‘\*’ in the practical plan of each subject teacher.

Laboratory manual explaining the details of the experiment is available with the subject teacher and is supplied to the students during the laboratory schedule. This guides the students to understand and perform the experiment at ease.

**VII-P.3 Curriculum updates and PEO reviews (30)**

List of course modules (along with coverage beyond syllabus) and PEOs which were updated and revised in past 3 years by the college, irrespective of curriculum updates by the affiliating university, in order to meet the corresponding PEOs.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sr. No.** | **Course** | **Curriculum Update Year** | **Curriculum Update Year** | **Curriculum Update Year** |
| 1. | F.E. | 1998 | 2002 | 2007 |
| 2. | S.E. | 1999 | 2003 | 2008 |
| 3. | T.E. | 2000 | 2004 | 2009 |
| 4. | B.E. | 2001 | 2005 | 2010 |

**VII-P.4 Additional contents to bridge curriculum gaps (25)**

Evaluators’

Space

Assessment is based on program specific contents which are added to bridge curriculum gaps across the courses in order to achieve PEOs and the specific course objectives

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **SEM/ Year** | **Topics** | **Objectives/ Outcomes** | **Practical (Hrs) per Week** | **Total**  **(Hrs)** |
| III/ SE-I | Spoken and Written English | 6/ h | 02 | 24 |
| IV/ SE-II | MS Windows, MS Office | 3/ f, h | 02 | 24 |
| V/ TE- I | Journal Paper Writing | 1,5/ i, j | 02 | 24 |
| VI/ TE- II | GATE, IES Preparation | 1/ k | 02 | 24 |
| VII/ BE- I | GATE, IES Preparation | 1/ k | 02 | 24 |
| VII/ BE- II | General Proficiency | 6/ i, j, k | 02 | 24 |

Details of the Teaching Plan for the additional curriculum developed to bridge the gap is given below:

Annasaheb Dange College of Engineering & Technology, Ashta

Department of Electrical Engineering

**TEACHING PLAN**

**SUBJECT: Spoken & Written English**

|  |  |
| --- | --- |
| Class: S.E - I | Lectures: 2 Hours/ Week [24 Hours] |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Unit No | Lecture No | Topic | Planned Date | Conducted Date |
| 1 | 1 | **Part I: Laying Out the Concrete Slab: Grammar Basics** Chapter 1: Placing the Proper Verb in the Proper Place |  |  |
| 2 | Chapter 2: Matchmaker, Make Me a Match: Pairing Subjects and Verbs Correctly |  |  |
| 3 | Chapter 3: Who Is She, and What Is It? The Lowdown on Pronouns |  |  |
| 4 | Chapter 4: Finishing What You Start: Writing Complete Sentences |  |  |
| 2 | 5 | **Part II: Mastering Mechanics**  Chapter 5: Exercising Comma Sense |  |  |
| 6 | Chapter 6: Made You Look! Punctuation Marks That Demand Attention |  |  |
| 7 | Chapter 7: One Small Mark, a Whole New Meaning: Apostrophes |  |  |
| 8 | Chapter 8: “Let Me Speak!“ Quotation Marks  Chapter 9: Hitting the Big Time: Capital Letters |  |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Unit No** | **Lecture No** | **Topic** | **Planned Date** | **Conducted Date** |
| 3 | 9 | **Part III: The Pickier Points of Correct Verb and Pronoun Use**  Chapter 10: The Case of It (And Other Pronouns |  |  |
| 10 | Chapter 11: Choosing the Best Pronoun for a Tricky Sentence |  |  |
| 11 | Chapter 12: Traveling in Time: Tricky Verb-Tense Situations |  |  |
| 12 | Chapter 13: Are You and Your Verbs in the Right Mood? |  |  |
| 4 | 13 | **Part IV: All You Need to Know about Descriptions and Comparisons**  Chapter 14: Writing Good or Well: Adjectives and Adverbs |  |  |
| 14 | Chapter 15: Going on Location: Placing Descriptions Correctly |  |  |
| 15 | Chapter 16: For Better or Worse: Forming Comparisons |  |  |
| 16 | Chapter 17: Apples and Oranges: Improper Comparisons |  |  |
| 5 | 17 | **Part V: Writing with Style [4 Hours]**  Chapter 18: Practicing Parallel Structure |  |  |
| 18 | Chapter 19: Spicing Up and Trimming Down Your Sentences |  |  |
| 19 | Chapter 20: Steering Clear of Tricky Word Traps |  |  |
| 20 | Steering Clear of Tricky Word Traps |  |  |
| 6 | 21 | **Part VI: The Part of Tens[4 Hours]**  Chapter 21: Ten Over corrections |  |  |
| 22 | Ten Over corrections |  |  |
| 23 | Chapter 22: Ten Errors to Avoid at All Cost |  |  |
| 24 | Ten Errors to Avoid at All Cost |  |  |

*Reference Book: English Grammar Workbook for Dummies*, by Geraldine Woods

Name of the Staff:

Annasaheb Dange College of Engineering & Technology, Ashta

Department of Electrical Engineering

**TEACHING PLAN**

**SUBJECT: MS OFFICE SKILLS**

|  |  |
| --- | --- |
| Class: S.E - II | Practical: 2 Hours/ Week [24 Hours] |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Unit No** | **Lecture No** | **Topic** | **Planned Date** | **Conducted Date** |
| 1 | 1 | **Part I: MS Office Overview [4 Hours]**   1. Programs |  |  |
| 2 | 1. Documents, Settings |  |  |
| 3 | 1. Search, Help & Support |  |  |
| 4 | 1. Run, Hibernate, Log-off, Turn-off |  |  |
| 2 | 5 | **Part II: MS Word [4 Hours]**   1. Home, Insert |  |  |
| 6 | 1. Page Layout, References |  |  |
| 7 | 1. Mailings, Review, View |  |  |
| 8 | 1. Add-ins, Help |  |  |
| 3 | 9 | **Part III: MS Excel [4 Hours]**   1. Home, Insert |  |  |
| 10 | 1. Page Layout, Formulas |  |  |
| 11 | 1. Data, Review, View |  |  |
| 12 | 1. Add-ins, Help |  |  |
| 4 | 13 | **Part IV: MS PowerPoint [4 Hours]**   1. Home, Insert, Design |  |  |
| 14 | 1. Animation |  |  |
| 15 | 1. Slide Show, Review |  |  |
| 16 | 1. View, Add-ins, Help |  |  |
| 5 | 17 | **Part V: Internet [4 Hours]**   1. Browser 2. Home Settings |  |  |
| 18 | 1. Creating email id |  |  |
| 19 | 1. Receiving, reading, sending emails with attachments |  |  |
| 20 | 1. Data storage and forwarding |  |  |
| 6 | 21 | **Part VI: MS Office Installation [4 Hours]**   1. Installation procedure for the new PCs |  |  |
| 22 | 1. Installation procedure for the corrupted PCs |  |  |
| 23 | 1. Formatting a selected drive 2. Hiding the file, folder, drive |  |  |
| 24 | 1. Changing the properties of the files 2. Converting Word file into PDF format and vice-versa |  |  |

Reference: MS Office Documents Name of the Faculty:

Annasaheb Dange College of Engineering & Technology, Ashta

Department of Electrical Engineering

**TEACHING PLAN**

**SUBJECT: Journal Paper Writing**

|  |  |
| --- | --- |
| Class: T.E - I | Practical: 2 Hours/ Week [24 Hours] |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Unit No** | **Lecture No** | **Topic** | **Planned Date** | **Conducted Date** |
| 1 | 1-4 | Part I: Introduction to Scientific Writing |  |  |
| 2 | 5-8 | Part II: Strategy for Writing a Paper |  |  |
| 3 | 9-12 | Part III: How to Write Journal Style Format |  |  |
| 4 | 13-16 | Part IV: Making Effective Comments |  |  |
| 5 | 17-20 | Part V: Revising the Paper |  |  |
| 6 | 21-24 | Part VI: Useful References |  |  |

References:

IEEE Transactions

Elsevier Journals

Name of the Faculty:

Annasaheb Dange College of Engineering & Technology, Ashta

Department of Electrical Engineering

**TEACHING PLAN**

**SUBJECT: Preparation for GATE**

|  |  |
| --- | --- |
| Class: T.E – II/ BE- I | Practical: 2 Hours/ Week [24 Hours] |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Unit No** | **Lecture No** | **Topic** | **Planned Date** | **Conducted Date** |
| 1 | 1-4 | **Part I: Electrical Circuits & Fields**  Network graph, KCL, KVL, node/ cut set, mesh/ tie set analysis, transient response of d.c. and a.c. networks -- sinusoidal steady-state analysis -- resonance in electrical circuits -- concepts of ideal voltage and current sources, network theorems, driving point, immittance and transfer functions of two port networks, elementary concepts of filters, Network graph, KCL, KVL, node/ cut set, mesh/ tie set analysis, transient response of d.c. and a.c. networks -- sinusoidal steady-state analysis -- resonance in electrical circuits -- concepts of ideal voltage and current sources, network theorems, driving point, immittance and transfer functions of two port networks, elementary concepts of filters |  |  |
| 2 | 5-8 | **Part II: Electrical Machines**  Single phase transformer - equivalent circuit, phasor diagram, tests, regulation and efficiency -- three phase transformers - connections, parallel operation -- auto transformer and three-winding transformer -- principles of energy conversion, windings of rotating machines: D. C. generators and motors - characteristics, staring and speed control, armature reaction and commutation -- three phase induction motors -- performance characteristics, starting and speed control -- single-phase induction motors -- synchronous generators performance, regulation, parallel operation -- synchronous motors - starting, characteristics, applications, synchronous condensers -- fractional horse power motors, permanent magnet and stepper motors. |  |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Unit No** | **Lecture No** | **Topic** | **Planned Date** | **Conducted Date** |
| 3 | 9-12 | **Part III: Power Systems**  Electric power generation - thermal, hydro, nuclear -- transmission line parameters -- steady-state performance of overhead transmission lines and cables and surge propagation -- distribution systems, insulators, bundle conductors, corona and radio interference effects -- per-unit quantities -- bus admittance and impedance matrices -- load flow -- voltage control and power factor correction -- economic operation -- symmetrical components, analysis of symmetrical and unsymmetrical faults -- principles of over current, differential and distance protections -- concept of solid state relays and digital protection -- circuit breakers -- concept of system stability-swing curves and equal area criterion -- basic concepts of HVDC transmission. |  |  |
| 4 | 13-16 | **Part IV: Control Systems**  Principles of feedback -- transfer function -- block diagrams: steady-state errors -- stability-Routh and Nyquist criteria -- Bode plots -- compensation -- root loci -- elementary state variable formulation -- state transition matrix and response for LTI systems.  **Part V: Electrical and Electronic Measurements**  Bridges and potentiometers, PMMC moving iron, dynamometer and induction type instruments, measurement of voltage, current, power, energy and power factor instrument transformers -- digital voltmeters and multimeters -- phase, time and frequency measurement -- Q-meter, oscilloscopes, potentiometric recorders, error analysis. |  |  |
| 5 | 17-20 | **Part VI: Analog and Digital Electronics**  Characteristics of diodes, BJT, FET, SCR -- amplifiers-biasing, equivalent circuit and frequency response -- oscillators and feedback amplifiers, operational amplifiers- characteristics and applications -- simple active filters -- VCOs and timers -- combinational and sequential logic circuits, multiplexes, Schmitt trigger, multivibrators, sample and hold circuits, A/D and D/A converters -- microprocessors and their applications. |  |  |
| 6 | 21-24 | **Part VII: Power Electronics and Electric Drives**  Semiconductor power devices-diodes, transistors, thyristors, triacs, GTO's MOSFETS and IGBT - static characteristics and principles of operation -- triggering circuits -- phase control rectifiers -- bridge converters-fully controlled and half controlled -- principles of choppers and inverters, basic concepts of adjustable speed of dc and ac drives. |  |  |

Annasaheb Dange College of Engineering & Technology, Ashta

Department of Electrical Engineering

**TEACHING PLAN**

**SUBJECT: General Proficiency**

|  |  |
| --- | --- |
| Class: B.E - II | Practical: 2 Hours/ Week [24 Hours] |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Unit No** | **Lecture No** | **Topic** | **Planned Date** | **Conducted Date** |
| 1 | 1-4 | Purpose: To develop presentation skills, Communication Skills by using techniques like Mock Interviews,  Use of Computer, Books, News Papers, Journals & Periodicals. |  |  |
| 2 | 5-8 | Students are expected to collect information on an article by using various resources. This article  is presented by using slide projector, Computer presentation facilities etc. |  |  |
| 3 | 7-12 | 1. Writing Resume/ Bio data/Letters.  2. Collecting latest information on new products and its Discussion. |  |  |
| 4 | 13-16 | 3. Analysis of information like balance sheet, Company Profile.  4. Study of various Instruments, Hand Tools. |  |  |
| 5 | 17-20 | 5. Study of various specifications, Purchase & Sale documents, Telephone bills, Electricity  bills, Tax bills, etc.  6. Market Survey Techniques, Advertising & Sales Promotion Techniques. |  |  |
| 6 | 21-24 | 7. Mock Interviews.  8. Collecting information about latest techniques and presenting the report on the same. |  |  |

**Note:**

1. The Mock Interviews are to be conducted by the batch Teacher along with Training & Placement Officer of the Institute.

2. Reports on the above activities in the form of Journal is to be submitted to the concerned Teacher.

**Assessment:** The Assessment is to be done by the concerned Teacher on the basis of presentation made by the student on any one of the above topics using modern presentation facilities at the end of the Term and the Journal submitted by him.

**Criterion VIII: Program Educational Objectives – Their Compliance and Outcomes**

Evaluators’

Space

List all the course modules along with their PEOs (in Part III):

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Course** | **Units** | | | | **Quality of PEOs**  **Specified?**  **(Poor, Average, Good, Excellent)** | **Additional contents to meet**  **PEOs through?** | | | **Assessment through Course**  **files/ Lab &**  **assignment**  **sheets/ Test papers** |
| **Theory**  **Units/ Hrs** | **Lab** | | | **Theory** | **Lab** | **Assignments/ Tests** |
| **Semester – I** | | | | | | | | | |
| Engineering physics/ Chemistry | 06/ 08 | | 10 | | Average |  |  | Yes | \* |
| Engineering Mathematics – I | 06/ 06 | |  | | Good |  |  | Yes | \* |
| Applied mechanics | 06/ 06 | | 10 | | Good |  |  | Yes | \* |
| Engineering graphics | 06/ 08 | | 10 | | Average |  | Yes |  | \* |
| Basic electronics & C++ | 06/ 06 | | 10 | | Good |  |  |  | \* |
| Professional communication – I | 06/ 02 | | 10 | | Excellent |  | Yes |  | \* |
| Workshop practice – I | --- | | 10 | | Good |  |  |  | \* |
| **Semester – II** | | | | | | | | | |
| Engineering physics/ Chemistry | 06/ 08 | | 10 | | Average |  |  | Yes | \* |
| Engineering Mathematics – II | 06/ 08 | |  | | Good |  |  | Yes | \* |
| Basic Civil Engineering | 06/ 06 | | 10 | | Average |  |  |  | \* |
| Basic Mechanical Engineering | 06/ 06 | | 10 | | Average |  |  |  | \* |
| Basic Electrical Engineering | 06/ 06 | | 10 | | Good | Yes |  | Yes | \* |
| Professional communication –II | 06/ 02 | |  | | Excellent |  | Yes |  | \* |
| Workshop practice – II | 06/ 02 | | 10 | | Good |  |  |  | \* |
| **Semester – III** | | | | | | | | | |
| Engineering Mathematics-III | 06/ 06 | |  | Good | |  |  | Yes | \* |
| Analog Electronics | 06/ 06 | | 10 | Good | |  |  |  | \* |
| Electrical Circuit Analysis | 06/ 06 | | 10 | Excellent | |  |  | Yes | \* |
| DC Machines & Transformers | 06/ 08 | | 10 | Good | |  |  |  | \* |
| Generation & Its economics | 06/ 06 | |  | Excellent | |  |  |  | \* |
| Introduction to PSpice & MATLAB | 06/ 02 | | 10 | Good | |  |  |  | \* |
| Advanced C Programming | 06/ 02 | | 10 | Good | |  |  |  | \* |
| **Semester – IV** | | | | | | | | | |
| Signals & Systems | 06/ 08 | |  | Good | |  |  | Yes | \* |
| AC Machines | 06/ 08 | | 10 | Excellent | |  |  |  | \* |
| Industrial Management & Economics | 06/ 06 | |  | Excellent | |  |  |  | \* |
| Electrical Measurements | 06/ 06 | | 10 | Good | |  |  |  | \* |
| Digital Systems & Microprocessors | 06/ 08 | | 10 | Excellent | |  |  |  | \* |
| Introduction to LABVIEW | --- | | 10 | Good | |  |  |  | \* |

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Course** | **Units** | | | | **Quality of PEOs**  **Specified?**  **(Poor, Average, Good, Excellent)** | | | **Additional contents to meet**  **PEOs through?** | | | | **Assessment through Course**  Evaluators’  Space  **files/ Lab &**  **assignment**  **sheets/ Test papers** |
| **Theory**  **Units/ Hrs** | | **Lab** | | **Theory** | | **Lab** | **Assignments/ Tests** |
| **Semester - V** | | | | | | | | | | | | |
| Electromagnetic Engineering | | 06/ 08 | |  | | Average | |  | |  |  | \* |
| Power Systems Analysis | | 06/ 08 | | 10 | | Excellent | |  | |  |  | \* |
| Instrumentation Techniques | | 06/ 06 | | 10 | | Excellent | |  | |  |  | \* |
| Feedback Control Systems | | 06/ 08 | | 10 | | Good | |  | |  | Yes | \* |
| Digital Signal Processing | | 06/ 06 | | 10 | | Good | |  | |  | Yes | \* |
| Mini Project | | --- | | 10 | | Excellent | |  | |  |  | \* |
| Introduction to PSIM/EMTP/ETAP | | ---- | | 10 | | Good | |  | |  |  | \* |
| **Semester – VI** | | | | | | | | | | | | |
| Power System Stability & Control | | 06/ 08 | | 10 | | Excellent | |  |  | |  | \* |
| Control System Design | | 06/ 08 | | 10 | | Good | |  |  | | Yes | \* |
| Power Electronics | | 06/ 06 | | 10 | | Average | | Yes | Yes | |  | \* |
| Microcontroller & its applications | | 06/ 08 | | 10 | | Excellent | |  |  | |  | \* |
| Energy Conservation & Energy Auditing | | 06/ 06 | | 10 | | Excellent | |  |  | |  | \* |
| Seminar | | --- | | 10 | | Excellent | |  |  | |  | \* |
| **Semester – VII** | | | | | | | | | | | | |
| Microcontroller & Applications | | 06/ 08 | | 10 | | Excellent | |  |  | |  | \* |
| Industrial Drives & Control | | 06/ 08 | | 10 | | Good | |  |  | | Yes | \* |
| FACTS | | 06/ 08 | |  | | Good | |  |  | |  | \* |
| Nonlinear & Digital Control Systems | | 06/ 08 | |  | | Average | | Yes |  | | Yes | \* |
| Elective - I | | 06/ 06 | |  | | Excellent | |  |  | |  | \* |
| Seminar | | --- | | 10 | | Excellent | |  |  | |  | \* |
| Project - P1\* | | --- | | 10 | | Excellent | |  |  | |  | \* |
| **Semester – VIII** | | | | | | | | | | | | |
| Switchgear & Protection | | 06/ 08 | | 10 | | | Excellent |  |  | |  | \* |
| Electrical M/C Design | | 06/ 08 | | 10 | | | Excellent |  |  | |  | \* |
| Utilization & Energy Conservation | | 06/ 08 | | 10 | | | Excellent |  |  | |  | \* |
| Elective - II | | 06/ 08 | |  | | | Excellent |  |  | |  | \* |
| Project -II | |  | | 4/w | | | Excellent |  |  | |  | \* |

( \* ) detailed in VIII- P.2

**VIII-P.1 Course objective and mapping (20)**

Assessment is based on the PEOs defined for a course or a set of courses and their mapping with the content delivery and knowledge gain through theory classes, lab experiments, assignments and tests.

Evaluators’

Space

University has designed the course contents in such a way that adequate knowledge can be imparted in the four years degree program. It is also taken care by the university that, specific subjects are covered in the program, which lead to accelerated employability.

In the following table courses are mapped with the outcomes

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Course** | **Outcomes** | | | | | | | | | | |
| **a** | **b** | **c** | **d** | **e** | **f** | **g** | **h** | **i** | **j** | **k** |
| Engineering physics/ Chemistry | × |  |  |  |  |  |  |  |  |  | **×** |
| Engineering Mathematics – I | **×** |  |  |  |  |  |  |  |  |  | **×** |
| Applied mechanics | **×** |  |  |  |  |  |  |  |  |  | **×** |
| Engineering graphics | **×** |  |  |  |  |  |  |  |  | **×** | **×** |
| Basic electronics & C++ | **×** |  |  |  |  |  | **×** |  |  |  | **×** |
| Professional communication – I |  |  |  |  |  |  |  | **×** |  | **×** | **×** |
| Workshop practice – I |  |  |  |  |  |  |  |  |  | **×** | **×** |
| Engineering Mathematics – II | **×** |  |  |  |  |  |  |  |  |  | **×** |
| Basic Civil Engineering | **×** |  |  |  |  |  |  |  |  |  | **×** |
| Basic Mechanical Engineering | **×** |  |  |  |  |  |  |  |  |  | **×** |
| Basic Electrical Engineering | **×** |  |  |  |  |  |  |  |  |  | **×** |
| Professional communication –II |  |  |  |  |  |  |  | **×** |  | **×** | **×** |
| Workshop practice – II |  |  |  |  |  |  |  |  |  | **×** | **×** |
| Engineering Mathematics-III | **×** |  |  |  |  |  |  |  |  |  | **×** |
| Analog Electronics |  |  |  | **×** |  |  |  |  |  |  | **×** |
| Electrical Circuit Analysis |  |  | **×** | **×** |  |  |  |  |  |  | **×** |
| DC Machines & Transformers |  | **×** |  |  |  |  |  |  |  |  | **×** |
| Generation & Its economics |  | **×** |  |  |  |  |  |  |  |  | **×** |
| Introduction to PSpice & MATLAB |  |  |  |  |  | **×** |  |  |  |  | **×** |
| Advanced C Programming |  |  |  |  |  | **×** |  |  |  |  | **×** |
| Signals & Systems |  |  |  | **×** |  |  |  |  |  |  | **×** |
| AC Machines |  | **×** |  |  |  |  |  |  |  |  | **×** |
| Industrial Management & Economics |  |  |  |  |  |  |  | **×** |  | **×** | **×** |
| Electrical Measurements |  |  | **×** |  |  |  |  |  |  |  | **×** |
| Digital Systems & Microprocessors |  |  |  | **×** |  |  |  |  |  |  | **×** |
| Introduction to LABVIEW |  |  |  |  |  | **×** |  |  |  |  | **×** |
| Electromagnetic Engineering | **×** |  |  |  |  |  |  |  |  |  | **×** |
| Power Systems Analysis |  |  |  |  | **×** |  |  |  |  |  | **×** |
| Instrumentation Techniques |  |  | **×** |  |  |  |  |  |  |  | **×** |
| Feedback Control Systems |  |  |  |  |  | **×** |  |  |  |  | **×** |
| Digital Signal Processing |  |  |  | **×** |  | **×** |  |  |  |  | **×** |
| Mini Project |  |  |  |  |  |  |  |  |  | **×** | **×** |
| Introduction to PSIM/EMTP/ETAP |  |  |  |  |  | **×** |  |  |  |  | **×** |
| Power System Stability & Control |  |  |  |  | **×** |  |  |  |  |  | **×** |
| Control System Design |  |  |  |  |  | **×** |  |  |  |  | **×** |
| **Course** | **Outcomes**  Evaluators’  Space | | | | | | | | | | |
| **a** | **b** | **c** | **d** | **e** | **f** | **g** | **h** | **i** | **j** | **k** |
| Power Electronics |  |  |  | **×** |  |  |  |  |  |  | **×** |
| Microcontroller & its applications |  |  |  |  |  | **×** |  |  |  |  | **×** |
| Energy Conservation & Energy Auditing |  | **×** |  |  |  |  |  |  |  |  | **×** |
| Microcontroller & Applications |  |  |  |  |  | **×** |  |  |  |  | **×** |
| Industrial Drives & Control |  | **×** |  |  |  |  |  |  |  |  | **×** |
| FACTS |  | **×** |  |  |  |  |  |  |  |  | **×** |
| Nonlinear & Digital Control Systems |  |  |  | **×** |  |  |  |  |  |  | **×** |
| Elective - I |  | **×** |  |  |  |  |  |  | **×** |  | **×** |
| Seminar |  |  |  |  |  |  |  |  | **×** |  | **×** |
| Project - P1\* |  |  |  |  |  |  |  |  | **×** |  | **×** |
| Switchgear & Protection |  | **×** |  |  |  |  |  |  | **×** |  | **×** |
| Electrical M/C Design |  | **×** | **×** |  |  |  |  |  |  |  | **×** |
| Utilization & Energy Conservation |  |  |  |  |  |  | **×** |  |  |  | **×** |
| Elective - II |  | **×** |  |  |  |  |  |  | **×** |  | **×** |
| Project -II |  |  |  |  |  |  |  |  | **×** | **×** | **×** |

**VIII-P.2 Assessment outcomes (20)**

Assessment is based on the feasibility, applicability and quality of the PEOs’ with the course delivery. Assessment is also based on the methodologies for outcome measurements from the stake-holders including industry, alumni, and professional bodies.

In order to assess the achievement of identified programme educational objectives of each programme, the institute has following mechanisms in place:

**Assignments:**

* Question banks are prepared for each topic in the course based on the course objectives and considering the nature of the university question papers.
* Assignment problems are chosen from such question banks.
* Model solutions for assignment problems are prepared by concerned faculty.
* Continuous assessment system is implemented for assessment of assignments.

**Laboratory Work:**

* Laboratory plans are prepared for each laboratory course. This plan includes number of experiments as prescribed in the curriculum. Apart from this, two additional experiments/case studies are included in the plan.
* Laboratory manuals are prepared for all the experiments in the plan and are provided to the students at the time of practical.
* At the end of each experiment few assignment questions/problems are given.
* Continuous assessment system is also implemented for assessment of laboratory work. The assessment is done on the basis of timely submission of laboratory sheets, understanding of the experiment through oral questions and participation in performing the experiment. Neatness of the laboratory sheet is also given weightage in the assessment.

**Weekly tests:**

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* Besides the university examinations additional weekly tests are conducted to achieve the identified PEOs.
* Weekly tests are planned and conducted on every Saturday. The schedule of such tests is published in the academic calendar.
* Two tests are scheduled per course in a semester.
* Test question papers are set based on the question banks available.
* Test papers are assessed based on the model solutions.
* Corrected scripts are distributed to students and results are declared within one week.
* The test results are also communicated to parents.

**Assessment of additional curriculum:**

* Institute has created and implemented an additional curriculum for each programme.
* Institute has a provision of additional tests/examinations to examine the additional subject topics covered in the additional curriculum to achieve the identified PEOs.
* At the end of the additional course, the tests are conducted for assessment of the course objectives.
* Test papers are assessed on the basis of model solutions and the corrected scripts are distributed to students.
* Well Developed mechanism the measurement of outcomes from the stake holders is in place.
* Special feedback forms are designed to take feedback from following stake holders:

1. Industries where students of this college are working.
2. Alumni are of the institute.
3. Parents

* Based on the feedback received & suggestions made by them are considered for development of:

1. Lab Development
2. Infrastructure Development
3. Additional Curriculum Development
4. Development of Training & Placement activities
5. Effectiveness of Teaching & Learning Process

**VIII-P.3 Mapping with faculty expertise (20)**

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| **Course**  Evaluators’  Space | **Units** | | | | | | **Area of**  **specialization**  **needed to achieve**  **PEOs** | **Name of the**  **Faculty whose**  **expertise matched**  **with the**  **specialization** | | **Comments**  **PEOs matched** | | |
| **Theory**  **Units/ Hrs** | | | | **Lab** | |
| **Semester – I** | | | | | | | | | | | | |
| Engineering physics/ Chemistry | 06/ 08 | | | | 10 | | Physics / chemistry | V.M. Vairat /  S.K. Jadhav | | 1, 5 | | |
| Engineering Mathematics – I | 06/ 06 | | | |  | | Mathematics | N.D. Sangle | | 1, 5 | | |
| Applied mechanics | 06/ 06 | | | | 10 | | Civil | S.K. Patil | | 1, 4, 5 | | |
| Engineering graphics | 06/ 08 | | | | 10 | | Civil | S.K. Patil | | 1, 4, 5 | | |
| Basic electronics & C++ | 06/ 06 | | | | 10 | | Electronics | S.S. Patil | | 1, 3, 4, 5 | | |
| Professional communication – I | 06/ 02 | | | | 10 | | English | S M Chavan | | 1, 5,6 | | |
| Workshop practice – I | --- | | | | 10 | | Mechanical | V B Patil | | 1, 4, 5 | | |
| **Semester – II** | | | | | | | | | | | | |
| Engineering physics/ Chemistry | 06/ 08 | | | | 10 | | Physics / chemistry | V.M. Vairat /  S.K. Jadhav | | 1, 5 | | |
| Engineering Mathematics – II | 06/ 08 | | | |  | | Mathematics | N.D. Sangle | | 1, 5 | | |
| Basic Civil Engineering | 06/ 06 | | | | 10 | | Civil | S.K. Patil | | 1, 4, 5 | | |
| Basic Mechanical Engineering | 06/ 06 | | | | 10 | | Mechanical | V B Patil | | 1, 4, 5 | | |
| Basic Electrical Engineering | 06/ 06 | | | | 10 | | Electrical | S S Katre | | 1, 2, 5 | | |
| Professional communication –II | 06/ 02 | | | |  | | English | S M Chavan | | 1, 5, 6 | | |
| Workshop practice – II | 06/ 02 | | | | 10 | | Mechanical | V B Patil | | 1, 4, 5 | | |
| **Semester - III** | | | | | | | | | | | | |
| Engineering Mathematics-III | 06/ 06 | |  | | | Mathematics | | N.D. Sangle | 1, 5 | | | |
| Analog Electronics | 06/ 06 | | 10 | | | Electrical | | A C Joshi | 1, 3, 4 | | | |
| Electrical Circuit Analysis | 06/ 06 | | 10 | | | Electrical | | S B Jamadar | 1, 2, 3 | | | |
| DC Machines & Transformers | 06/ 08 | | 10 | | | Electrical | | /C S Bandgar | 1, 2 | | | |
| Generation & Its economics | 06/ 06 | |  | | | Electrical | | S K Shaikh | 1, 2 | | | |
| Introduction to PSpice & MATLAB | 06/ 02 | | 10 | | | Electrical | | A C Joshi | 1, 3 | | | |
| Advanced C Programming | 06/ 02 | | 10 | | | Electrical | | /S B Khade | 1, 3 | | | |
| **Semester – IV** | | | | | | | | | | | | |
| Signals & Systems | 06/ 08 | | |  | | Electrical | | S U Ranade | | | 1, 4 | |
| AC Machines | 06/ 08 | | | 10 | | Electrical | | /C S Bandgar | | | 1, 2 | |
| Industrial Management & Economics | 06/ 06 | | |  | | Electrical | | S K Shaikh | | | 1, 4, 5 | |
| Electrical Measurements | 06/ 06 | | | 10 | | Electrical | | D L Raokhande | | | 1, 2 | |
| Digital Systems & Microprocessors | 06/ 08 | | | 10 | | Electrical | | /S B Khade | | | 1, 3 | |
| Introduction to LABVIEW | --- | | | 10 | | Electrical | | I M Korachagaon | | | 1, 3 | |
| Semester – V | | | | | | | | | | | | |
| Electromagnetic Engineering | | 06/ 08 |  | | | Electrical | | H M Mallad | | | | 1, 4 |
| Power Systems Analysis | | 06/ 08 | 10 | | | Electrical | | I M Korachagaon | | | | 1, 2 |
| Instrumentation Techniques | | 06/ 06 | 10 | | | Electrical | | S S Katre | | | | 1, 2, 3 |
| Feedback Control Systems | | 06/ 08 | 10 | | | Electrical | | A N Shinde | | | | 1, 2, 3 |
| Digital Signal Processing | | 06/ 06 | 10 | | | Electrical | | S U Ranade | | | | 1, 3 |
| Mini Project | | --- | 10 | | | Electrical | | S S Katre /ACJoshi | | | | 1, 5, 6 |
| Introduction to PSIM/EMTP/ETAP | | ---- | 10 | | | Electrical | | I M Korachagaon | | | | 1, 3 |

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| **Course** | **Units** | | | | **Area of**  **specialization**  **needed to achieve**  **PEOs** | | **Name of the**  **Faculty whose**  **expertise matched**  **with the**  **specialization** | | **Comments**  Evaluators’  Space  **PEOs matched** |
| **Theory**  **Units/ Hrs** | | **Lab** | |
| **Semester –VI** | | | | | | | | | |
| Power System Stability & Control | | 06/ 08 | 10 | Electrical | | I M Korachagaon | | 1, 2 | |
| Control System Design | | 06/ 08 | 10 | Electrical | | A N Shinde | | 1, 2 | |
| Power Electronics | | 06/ 06 | 10 | Electrical | | S B Jamadar | | 1, 3 | |
| Microcontroller & its applications | | 06/ 08 | 10 | Electrical | | A C Joshi | | 1, 3 | |
| Energy Conservation & Energy Auditing | | 06/ 06 | 10 | Electrical | | /K M Khan | | 1, 2, 5 | |
| Seminar | | --- | 10 | Electrical | | A C Joshi | | 1, 5, 6 | |
| **Semester – VII** | | | | | | | | | |
| Microcontroller & Applications | | 06/ 08 | 10 | Electrical | | A C Joshi | | 1, 3 | |
| Industrial Drives & Control | | 06/ 08 | 10 | Electrical | | D L Raokhande | | 1, 2, 4 | |
| FACTS | | 06/ 08 |  | Electrical | | S S Mane | | 1, 2 | |
| Nonlinear & Digital Control Systems | | 06/ 08 |  | Electrical | | /K M Khan | | 1, 3 | |
| Elective - I | | 06/ 06 |  | Electrical | | /C S Bandgar | | 1 | |
| Seminar | | --- | 10 | Electrical | | A C Joshi | | 1, 2, 3, 5, 6 | |
| Project - P1\* | | --- | 10 | Electrical | | S S Katre | | 1, 2, 3, 5, 6 | |
| **Semester – VIII** | | | | | | | | | |
| Switchgear & Protection | | 06/ 08 | 10 | Electrical | | /K M Khan | | 1, 2 | |
| Electrical M/C Design | | 06/ 08 | 10 | Electrical | | S S Mane | | 1, 2, 5 | |
| Utilization & Energy Conservation | | 06/ 08 | 10 | Electrical | | S U Ranade | | 1, 2, 5 | |
| Elective - II | | 06/ 08 |  | Electrical | | H M Mallad | | 1, 2 | |
| Project -II | | ---- | 4/w | Electrical | | S S Katre | | 1, 2, 3, 5, 6 | |

Assessment is based on the factor that the expertise needed to deliver the contents is met with the faculty expertise and on a balanced load factor of the concerned faculty. Faculty expertise should be adequate to cater for all the major fields specified in the program criteria.

**VIII-P.4 Mapping with outcomes (20)**

Assessment is based on what extent the PEOs/curriculum map with the outcomes

Structure of the university is designed such that, a successful engineer is made available at the end of four years engineering degree course. All 6 PEOs and the outcomes are mapped with the courses.

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| **Program Educational**  **Objectives (PEOs)** | **Program Outcomes** | | | | | | | | | | |
|  | **a** | **b** | **c** | **d** | **e** | **f** | **g** | **h** | **i** | **j** | **k** |
| **1** | X | X |  |  |  | X |  | X |  |  | X |
| **2** | X | X | X | X |  | X |  |  |  |  | X |
| **3** |  | X | X | X | X |  |  |  |  |  |  |
| **4** |  |  |  |  | X |  | X | X | X |  |  |
| **5** |  |  |  |  |  |  |  | X | X | X |  |
| **6** |  |  |  |  |  |  |  | X |  |  |  |

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**VIII-P.5 Significant achievements (20)**

List significant achievements, in respect of curriculum, stated PEOs and their outcomes, in CAY, CAYm1 and CAYm2.

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| --- | --- | --- | --- |
| **Year** | **Achievements** | **PEOs** | **Outcomes** |
| 2009 – 10  (CAY) | More than 60 percent students & faculty are motivated to appear GATE 2010 | 1, 5, 6 | a, b, f, h, k |
| Students are motivated to undertake research-type projects (2 project titles) | 1, 4 | c, d, e |
| 2008-09 (CAYm1) | Four students ranked among top 10 in Shivaji University, examinations | 1, 5 | h, i, j |
| 2007-08 (CAYm2) | 100% off campus placement | 1, 5 | a, j, k |

**PART – III**

**Curriculum, Syllabi, PEOs and Outcomes**

1. **Program Educational Objectives : Electrical Engineering**
   1. To prepare students to succeed in industry/ technical profession and for postgraduate programmes.
   2. To make students capable for design & control of electrical machines and power systems.
   3. To train students with software skills, core engineering knowledge to understand, analyze and design electrical and electronics products and solutions for the real life applications.
   4. To instill in students professional and ethical attitude, teamwork skills, leadership, multidisciplinary approach.
   5. To provide students an impressive academic environment, needed for a successful professional career & life-long learning.
   6. To provide special attention to students to improve oral & written communication skills.

**Program Outcomes: Electrical Engineering**

1. Graduates will demonstrate knowledge of mathematics, physics, chemistry and basics of electrical, electronics, civil & mechanical engineering.
2. Graduates will demonstrate ability to design, test and control, identify, analyze and solve electrical machines & power system problems.
3. Graduates will demonstrate ability to design electrical circuits and conduct experiments, analyze and interpret data.
4. Graduates will demonstrate an ability to design digital and analog systems for control of electrical and electronics equipments.
5. Graduates will demonstrate an ability to work on multi-disciplinary tasks, such as power systems, controls systems, instrumentation, microprocessor and microcontroller systems.
6. Graduate will demonstrate skills to use modern engineering software tools to analyze electrical and electronics related problems.
7. Graduates will demonstrate knowledge of utilization of electrical power considering the environmental issues.
8. Graduates will be able to communicate effectively in both verbal and written form and develop managerial skills.
9. Graduates will be updated on emerging topics related to electrical engineering.
10. Graduates will develop confidence for self education and ability for life-long learning.
11. Graduates will be able to face competitive examinations like GATE, IES, etc.
12. **Course Objectives and Outcomes**

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| **Course Name** | **Objectives** | **Outcomes** |
| **FE – I (Semester – I)** | | |
| 1. ENGINEERING PHYSICS | The base of engineering and technology is in science. This subject deals with the basics of acoustics, ultrasonic, diffraction, laser technology, nuclear technology, crystallography and superconductivity concepts. The student is expected to understand the concept of all these to make use in the further applications. | The students shall be able to demonstrate the knowledge of various concepts studies under this subject.  He shall be able to use this knowledge for conducting the experiments to demonstrate the knowledge gained. |
| 1. ENGINEERING MATHEMATICS – I | After learning this subject, student shall be able to demonstrate the mathematical skill with matrix, complex numbers, solution and application of partial differentiation. | The student shall be able to solve the given physical mathematical model and find the solution for unknown quantity.  This helps is developing his analytical skills required for further engineering applications. |
| 1. APPLIED MECHANICS | At the end of this course, the student shall be able to understand the basic concepts of force, moment, couple, resultant forces, loads, supports, Lami’ theorem, Newton’s theorem, De Alemrt’s theorem for work-energy principles. | The student will be capable to understand and demonstrate the knowledge of the mechanics of the physical systems and relate that to engineering. |
| 1. ENGINEERING GRAPHICS | At the end of learning this course the student shall be able to understand the planes, lines, curves, projections, orthographic views, isometric views, sections of solids | The student shall be able to demonstrate the imaginative quality of planes, curves, sections of solids required in the real life applications.  This knowledge is useful in the automobile designing. |

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| 1. BASIC ELECTRONICS and COMPUTER PROGRAMMING | After learning this course, the student is able to differentiate the active, passive elements, identify the electronics components.  Learning C is a fun. Basics of computer and language and writing tiny program are part of this study. | The student shall be able to create mini electronics circuits, measure their performance parameters and understand the subject.  He shall be able to write and execute small programs to solve mathematical problems. |
| 1. PROFESSIONAL COMMUNICATION - I | The scope of this learning is to improve the verbal and written communication of the student. | The student is motivated to use English as the communication language. Use the body language to make effective communication.  The students grammatically writing skill are also improved. |
| 1. WORKSHOP PRACTICE - I | The student shall be able to dissemble and assemble a PC, understand the electrical & electronics tools. He shall do some practice on carpentry. | The students shall be capable to trouble shoot the computer, house hold equipments and do some maintenance of wooden furniture. This subject/ practice keep the students a habit of life-long learning. |

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| **FE – II (Semester – II)** | | |
| 1. ENGINEERING CHEMISTRY | At the end of learning this subjects the students shall be able to understand the chemistry aspects of the engineering. Chemical analysis of water, lubricants, metallic materials, fuels, polymers, ceramic materials etc are studied. | The students shall be able to demonstrate the knowledge of various concepts studies under this subject.  He shall be able to use this knowledge for conducting the experiments to demonstrate the knowledge gained. |

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| 1. ENGINEERING MATHEMATICS – II | After this course the student shall be able to solve FDE, SDE and applications of differential equations, numerical solutions, special functions, curve fitting techniques etc. | The student shall be able to solve the given physical mathematical model and find the solution for unknown quantity.  This helps is developing his analytical skills required for further engineering applications. |
| 1. BASIC CIVIL ENGINEERING | At the end of this course the student is introduced application of civil engineering in  other allied fields. Building planning, components, design, surveying, transportation engineering techniques. | The students shall be able to demonstrate the civil engineering knowledge in day-to-day life to limited applications. |
| 1. BASIC MECHANICAL ENGINEERING | After learning this course the student is capable to understand the laws of thermodynamics, IC engine principles, refrigeration and air-conditioning, renewable and non-renewable energy sources, steam generation for power applications. | The students shall be able to demonstrate the mechanical engineering knowledge in day-to-day life to limited applications. |
| 1. BASIC ELECTRICAL ENGINEERING | The student shall learn the AC/DC circuits, Laws, Transformer, motor principles and applications, hands on experiments. Practice on domestic wirings, types of lamps and illuminations | The students shall be able to demonstrate the electrical engineering knowledge in day-to-day life to limited applications. |
| 1. PROFESSIONAL COMMUNICATION - II | After completion of this course, the student shall understand the professional writing, report writing, etiquettes in English and polite verbal communication skills. | The student is motivated to use English as the communication language. Use the body language to make effective communication. |
| 1. WORKSHOP PRACTICE - II | In this course the student learns about the industrial safety, materials, measuring, wilding, carpentry, fitting, smithy etc. | This subject/ practice keep the students a habit of life-long learning. |

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| **SE- I (Semester – III)** | | |
| 1. ENGINEERING MATHEMATICS-III | The student with this course is exposed to applications of LDE, PDE, Fourier series, Laplace, Z- transforms | The student shall be able to solve the given physical mathematical model and find the solution for unknown quantity.  This helps is developing his analytical skills required for further engineering applications. |
| 1. ANALOG ELECTRONICS | Through this course the student is taught diode, BJT, Opamp applications, specialized IC applications. | The student shall demonstrate this knowledge to use the adequate electronics during his project building. |
| 1. ELECTRIC CIRCUIT ANALYSIS | At the end of this course, AC/DC network analysis, RLC circuits solving, two port networks, solution of circuits by Laplace and Fourier transforms is taught. | The student shall be able to apply this knowledge in circuit building and testing of electrical networks. |
| 1. D.C.MACHINES AND TRANSFORMERS | Student shall learn principle, application and troubleshooting of DC motors, Transformers, Universal Motors. | Student shall be able to analyze the performance of the DC machines and transformers.  He shall be able to calculate the losses, efficiency and parameters of the machines. Verify the theoretical results with analytical solution. |
| 1. GENERATION AND ITS ECONOMICS | This course gives the knowledge about the types of generation of electricity and the limitations thereto. Tariff base, IEC 2003 are also studied. | The student will demonstrate the practical applications of power generation and influenced to follow energy saving tricks. |
| 1. INTRODUCTION TO PSPICE & MATLAB | At the end of this course the student will be equipped with the basic knowledge of using Matlab and Pspice simulation softwares | The student will be able to demonstrate the application of Matlab and Pspice for solving the engineering problems. |
| 1. Advanced ‘C’ Programming | The student will learn C fundamentals, pointers, structures, data files, programming | The student shall be able to demonstrate this knowledge in projects and coding mini softwares. |

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| **SE- II (Semester – IV)** | | |
| 1. SIGNALS & SYSTEMS | This subject introduces the student – signals, analysis, systems, study through Fourier, Laplace and Z transforms, Sampling, correlation techniques. | The student will be able to analyze the type of signal and its effect on a particular system.  This finds application in engineering automation. |
| 1. A.C. MACHINES | Student shall learn principle, application and troubleshooting of AC generator. Speed control of AC motors | Student shall be able to analyze the performance of the AC machines.  He shall be able to design and calculate the losses, efficiency and parameters of the machines. Verify the theoretical results with analytical solution. |
| 1. INDUSTRIAL MANAGEMENT AND ECONOMICS | Student shall learn the industrial activities, administration, and management methods. Quality, acts, MIS and engineering economics are also studied. | The student shall develop good team working skills, managerial skills and understand the importance of economics. |
| 1. ELECTRICAL MEASUREMENT | Types of measurements, instruments, analog/ digital measurement of various electrical and mechanical parameters, CT/PT are taught through course. | The student shall develop an acumen to select an adequate instrumentation for his practical/ project work. |
| 1. DIGITAL SYSTEMS AND MICROPROCESSOR | Student learn fundamentals of digital systems, circuits, microprocessors, memory interfacing, chips IC 82XX. | He will demonstrate the knowledge of digital circuits in designing and implementing electronic control circuits for real time applications. |
| 1. INTRODUCTION TO ADVANCED PACKAGES – LAB VIEW | To get “the students familiar with LAB VIEW SOFT WARE & it’s  applications | He shall be able to use this virtual instrument laboratory for interfacing with the computer for data acquisition measurement and analysis |

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| **TE – I (Semester-V)** | | |
| 1. ELECTROMAGNETICS | Students are to learn the fundamental concept of magnetism. By understanding the various magnetic laws such as Gauss law, stokes thermo, Biot saverts law etc which will helpful to analyze in the electrostatics time varying fields as well as in transmission line & radiation. | The learning outcomes are assessed through test and homework problems, that most of the students are able to do the following. The students are able to apply their knowledge of magnetism in the field of electrical machines as well as in the power system. |
| 1. POWER SYSTEM ANALYSIS | By learning the various concepts in the power system analysis such as, power system components, design of overhead transmission lines as well as their performance. They can also get knowledge about the power factor improvement and study of load flow analysis. | At the end of the course the student are able to apply these principles to solve verity of practical problems and also to use their knowledge to solve the more complicated problems & study the affects of problem parameters. |
| 1. INSTRUMENTATION TECHNIQUES | To prepare students familiar with the basic concepts about the instrumentation techniques. By using this concept which includes various types of transducers and  Applications of transducers, various types of signal conditioning equipments, PLC as well as various I/O devices such as Analog display, Oscillograph, Strip chart, X-Y recorders, Tape recorders, Storage Oscilloscope, Digital I/P & O/P Devices, Process Instrumentation which are used in instrumentation. | To assess the students’ progress towards achieving the outcomes, a number of homework problems may be assigned to them. Else the students may be asked to use the knowledge in the instrumentation techniques to analyze a design problem in various field which includes control system, plant manufacturing process etc. |
| 1. FEEDBACK CONTROL SYSTEM | Students can get the History of Control Systems, Laplace Transform review, Transfer function of Electrical, Mechanical systems. State space representation  poles, zeros and system response  signal flow graph. DC and AC motors in control system. State space representation, poles, zeros and system response, Signal flow graph, DC and AC motors in control system. Routhcriterionfor stability, Root Locus Technique  Bode plot, Nyquist criterion and properties of Nonlinear Systems. | Understand the principles of control system which will help them do analyze the various problems faced by the system when the control system is not utilized. By solving the various problems on the control system such as transfer function, pole zero method, state space representation etc. At the final completing this course the students are capable to design the control function which is required in the process. |
| 1. DIGITAL SIGNAL PROCESSING | Students should be able to know what is DSP system, FFT, DFT, Design of IIP and filters and application of DSP using microprocessor. They are able to case study of Microprocessor-based Digital Filter. | The student will able to know DSP system, advantages of digital signal over analog signals. Application of DFT and FFT in analysis of signal processing. |

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| **TE – II (Semester-VI)** | | | |
| 1. POWER SYSTEM STABILITY & CONTROL | The student completing this course is expected to understand the need of stability and control in power system. The students are able to gain the knowledge about the various symmetrical and unsymmetrical faults, optimal condition in power system, load frequency control and also power system security. | At the end of this course the students will able to understand or to tackle the various problems faced by power system. They can also verify the faults which occur in the power system. Added to this they can also be able to know the advantages of the power system when work on the stable condition. | |
| 1. CONTROL SYSTEM DESIGN | To demonstrate the basic knowledge of the control system which they have learned in the feedback control system. This course includes Compensator design using Root locus, System stability and performance in frequency domain, Compensator design using Bode Plot and State space Design. | To assess the students progress towards the control system. A number of unsolved problems may be assigned to the students to design the control system. At completion of this course the students may be asked to design the given task based on the control system. | |
| 1. POWER ELECTRONICS | Students can acquire the knowledge of the Power Semiconductor Switches with their working, characteristics and their ratings. They can also learn working, characteristics of Uncontrolled Rectifiers, Controlled Rectifiers, Three phase half wave converter, Cycloconverters, DC- DC Power Converters – Choppers, and DC- AC Power Converters – Inverters and also their waveforms based on the conduction of the power electronics devices. | The learning outcomes are assessed through the homework assignment and various practical performed on the power electronics devices. This will also help them to control or to regulate the power supply wherever required. It is also applicable for controlling the industrial drives without which superior control is not possible. |

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| 1. MICROCONTROLLER & ITS APPLICATIONS | To demonstrate the basic knowledge of the microcontroller with its architecture. The students are able to know the internal structure of it. Also they can learn the instruction set. They can also learn microcontroller’s applications. | At the end of this course the students will able to understand the microcontroller architecture and its instruction sets by which they are able to Write and perform the program practically on it. Also they do the projects based on microcontroller. |
| 1. COMMUNICATION ENGINEERING | By learning the various concepts in the communication system they can learn they various types of signal and transmission methods of signals. They study different types of receivers, transmitters and various modulation techniques. | At the end of this course the student can understand the various types of ways of communication. So they can use these various techniques which are preferable according to their application. They can also distinguish between various modulation techniques used in communication system |

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| **BE – I (Semester –VII)** | | |
| 1. MICRO CONTROLLER &   APPLICATIONS | Student should understand 8051 Architecture, interfacing with no of devices & it’s applications | Student should be able to apply the µc programming in industry if required. |
| 1. INDUSTRIAL DRIVES &   CONTROLS | The student will be able to:  1) Describe construction/working principle of different types of drives.  2) Apply the different power control techniques to control speed of motors (A.C or D.C)  using chopper, Converters, Inverters, Microprocessor & Micro Controller.  3) Interpret the waveforms at different test points in the power control circuits.  4) Differentiate between the types of drives.  5) Operate & control the drive for specific application | In today’s modern industry various A.C & D.C electrical drives are used. They are either fixed speed or variable speed type drives. These drives use the various methods to control the speed like thyristor power controller, voltage to frequency converter etc. This is a technology subject; knowledge of this subject would enable the student to operate some controls. In addition, he would be able to carry out preventive and break down maintenance. |

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| 1. FACTS | Student should understand its importances in tranmission Network.Introduction  to basic types of facts controller ,comparision of HVDC and facts. | The student will be able to:Apply the FACTs concepts on power system for better performance using advanced FACT devices. |
| 1. NONLINEAR AND DIGITAL CONTROL SYSTEMS | Student should be able to design a system by state space model and locate the roots and analyse the system. | The student will be able to:Understand Non linear control system properties, Analyze Non linear control system and Design of digital control system. |
| 1. DSP | Student should be able to know what is a DSP system,FFT,DFT,design of IIR and FIR filters. Student should know the application using microprocessor. | The student will be able to:  Know DSP system, advantages over analog signal processing, application of DFT and FFT in analysis of signal processing,different types of IIR and FIR filter design. |
| 1. EHVAC | By learning this subject, the student can gain the knowledge and the various concepts regarding the extra high voltage which has many advantages as compared to regular system used in the transmission. They can also learn to design the higher voltage system. | The student will be able to:  By the end of this course the students can verify the exact difference between the normal system and extra high voltage system. They will also be capable of what are the equipments used in EHV system. |
| 1. SEMINAR | The student will be able to:   1. To improve communication skill and ability of a student to explain a particular topic 2. Student should study a technical topic in deep | After preparing and delivering a seminar student will become more confident & able to answer questions related to seminar. |
| 1. PROJECT P I | To put the engineering knowledge into a real-time application. | He will demonstrate the skills of plan, design and develop an electrical or electronics project to test his engineering learning. |

|  |  |  |
| --- | --- | --- |
| **BE – II (Semester – VIII)**  Evaluators’  Space | | |
| 1. SWITCHGEAR & PROTECTION | Students will be able to know construction, working principle and applications in power system of different types of circuit breakers and relays with their protection. | The student will be able to:  Apply knowledge of circuit breakers and relays in substation & construction, working principle and applications in power system of different types of circuit breakers and relays with their protection. |
| 1. ELECTRICAL MACHINES DESIGN | To learn how to design a transformer and an induction motor and synchronous motor. | The student will be able to: design a transformer and an induction motor and synchronous motor. |
| 1. UTILIZATION & ENERGY CONSERVATION | The student should know about electric traction, control of electric drives, to study different heating and welding methods and energy management and audit by visiting a industry. | The student will be able to: know about electric traction, control of electric drives, to study different heating and welding methods and energy management and audit. |
| 1. HVDC | The student will know advantages, limitations of HVDC transmission over EHVAC. To study overvoltage and over current protection of HVDC system and reactive power compensation, harmonics and filters, grid control and characteristics. | The student will be able to:  Apply knowledge of HVDC for protection of HVDC substation, its advantages over EHVAC wherever DC power is available. |
| 1. Project PII | To put the engineering knowledge into a real-time application. | He will demonstrate the skills of plan, design and develop an electrical or electronics project to test his engineering learning. |

**3. Mapping of PEOs with expected outcomes:**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Program Educational**  **Objectives (PEOs)** | **Program Outcomes** | | | | | | | | | | |
|  | **a** | **b** | **c** | **d** | **e** | **f** | **g** | **h** | **i** | **j** | **k** |
| **1** | X | X |  |  |  | X |  | X |  |  | X |
| **2** | X | X | X | X |  | X |  |  |  |  | X |
| **3** |  | X | X | X | X |  |  |  |  |  |  |
| **4** |  |  |  |  | X |  | X | X | X |  |  |
| **5** |  |  |  |  |  |  |  | X | X | X |  |
| **6** |  |  |  |  |  |  |  | X |  |  |  |

Evaluators’

Space

**4. Additional contents beyond the syllabi, to meet the outcomes with the course objectives and outcomes.**

Additional Curriculum Created

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| SEM/ Year | Topics | Objectives/ Outcomes | Practical (Hrs) per Week | Total(Hrs) |
| III/ SE-I | Spoken and Written English | 6/ h | 02 | 24 |
| IV/ SE-II | MS Windows, MS Office | 3/ f, h | 02 | 24 |
| V/ TE- I | Journal Paper Writing | 1,5/ i, j | 02 | 24 |
| VI/ TE- II | GATE, IES Preparation | 1/ k | 02 | 24 |
| VII/ BE- I | GATE, IES Preparation | 1/ k | 02 | 24 |
| VIII/ BE- II | General Proficiency | 6/ i, j, k | 02 | 24 |

**5. How to make the provisions for the additional contents, to bridge the gaps in the academic calendar.**

The academic timetable is prepared to accommodate the additional curriculum crated. This helps students to succeed in industry/ technical profession and for post-graduate programs.

On every Monday and Tuesday between 4.30 – 5.30 pm, the additional curriculum is covered. The students are advised to attend the classes as necessitated.

**Time-Table**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Day/ Time** | **Monday** | **Tuesday** | **Wednesday** | **Thursday** | **Friday** | **Saturday** |
| 9.00 – 10.00 am | Academic Time Table as per the University Schedule | | | | | |
| 10.00 – 11.00 am |
| 11.30 – 12.30 am |
| 12.30 – 1.30 pm |
| 2.15 – 3.15 pm |
| 3.15 – 4.15 pm |
| 4.30 – 5.30 pm | SE/TE/BE | SE/TE/BE |  |  |  |  |

1. **Curriculum & Syllabus Structure of the Degree program**

**FIRST YEAR ELECTRICAL ENGINEERING**

Scheme of Teaching and Examination

**Semester –I (FE-I)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SN** | **Subject** | **Teaching** | | | **Exam Scheme** | | | |
| **L** | **P** | **D/T** | **TP** | **TW** | **PO/E** | **Total** |
| 1 | Engineering Physics/ Chemistry | 4 |  | 2 | 100 | 25 |  | 125 |
| 2 | Engineering Mathematics-I | 3 | 1 |  | 100 | 25 |  | 125 |
| 3 | Applied Mechanics | 3 |  | 2 | 100 | 25 |  | 125 |
| 4 | Engineering Graphics + | 3 |  | 2 | 100 | 25 |  | 125 |
| 5 | Basic Electronics and Computer Programming in ‘C | 4 |  | 2 | 100 | 25 |  | 125 |
| 6 | Professional Communication-I | 1 |  | 2 |  | 25 |  | 25 |
| 7 | Workshop Practice-I |  |  | 2 |  | 25 |  | 25 |
|  | Total | 18 | 1 | 12 | 500 | 175 | 0 | 675 |

**Semester –II (FE-II)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SN** | **Subject** | **Teaching** | | | **Exam Scheme** | | | |
| **L** | **P** | **D/T** | **TP** | **TW** | **P/OE** | **Total** |
| 1 | Engineering Physics/ Chemistry | 4 |  | 2 | 100 | 25 |  | 125 |
| 2 | Engineering Mathematics-II | 4 | 1 |  | 100 | 25 |  | 125 |
| 3 | Basic Civil Engineering | 3 |  | 2 | 100 | 25 |  | 125 |
| 4 | Basic Mechanical Engineering | 3 |  | 2 | 100 | 25 |  | 125 |
| 5 | Basic Electrical Engineering | 3 |  | 2 | 100 | 25 |  | 125 |
| 6 | Professional Communication-II | 1 | 1 |  |  | 25 |  | 25 |
| 7 | Workshop Practice-II | 1 |  | 2 |  | 25 |  | 25 |
|  | Total | 19 | 2 | 10 | 500 | 175 | 0 | 675 |

**SECOND YEAR ELECTRICAL ENGINEERING**

Scheme of Teaching and Examination

**Semester –III (SE-I)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SN** | **Subject** | **Teaching** | | | **Exam Scheme** | | | |
| **L** | **P** | **D/T** | **TP** | **TW** | **P/OE** | **Total** |
| 1 | Engineering Mathematics-III | 3 |  | 1 | 100 | 25 |  | 125 |
| 2 | Analog Electronics | 3 | 2 |  | 100 | 25 | 25 | 150 |
| 3 | Electrical Circuit Analysis | 3 | 2 | 1 | 100 | 25 | 25 | 150 |
| 4 | DC Machines & Transformers | 4 | 2 |  | 100 | 25 | 50 | 175 |
| 5 | Generation & Its economics | 3 |  |  | 100 |  |  | 100 |
| 6 | Introduction to Pspice & Matlab | 1 | 2 |  |  | 50 |  | 50 |
| 7 | Advanced C Programming | 1 | 2 |  |  | 50 |  | 50 |
|  | Total | 18 | 10 | 2 | 500 | 200 | 100 | 800 |

**Semester –III (SE-I)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SN** | **Subject** | **Teaching** | | | **Exam Scheme** | | | |
| **L** | **P** | **D/T** | **TP** | **TW** | **P/OE** | **Total** |
| 1 | Signals & Systems | 4 |  | 1 | 100 | 25 |  | 125 |
| 2 | AC Machines | 4 | 2 |  | 100 | 25 | 50 | 175 |
| 3 | Industrial Management & Economics | 3 |  | 1 | 100 | 25 |  | 125 |
| 4 | Electrical Measurements | 3 | 2 | 1 | 100 | 25 | 25 | 150 |
| 5 | Digital Systes & Microprocessors | 4 | 2 | 1 | 100 | 25 | 50 | 175 |
| 6 | Introduction to LABVIEW |  | 2 |  |  | 50 |  | 50 |
|  | Total | 18 | 8 | 4 | 500 | 175 | 125 | 800 |

**THIRD YEAR ELECTRICAL ENGINEERING**

Scheme of Teaching and Examination

**Semester –V (TE-I)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SN** | **Subject** | **Teaching** | | | **Exam Scheme** | | | |
| **L** | **P** | **D/T** | **TP** | **TW** | **P/OE** | **Total** |
| 1 | Electromagnetics Engineering | 4 |  |  | 100 |  |  | 100 |
| 2 | Power Systems Analysis | 4 | 2 |  | 100 | 25 | 50 | 175 |
| 3 | Instrumentation Techniques | 3 | 2 |  | 100 | 25 |  | 125 |
| 4 | Feedback Control Systems | 4 | 2 |  | 100 | 25 | 25 | 150 |
| 5 | Digital Signal Processing | 3 | 2 |  | 100 | 25 | 25 | 150 |
| 6 | Mini Project |  | 2 |  |  | 50 |  | 50 |
| 7 | Introduction to PSIM/EMTP/ETAP |  | 2 |  |  | 50 |  | 50 |
|  | Total | 18 | 12 | 0 | 500 | 200 | 100 | 800 |

**Semester –VI (TE-II)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SN** | **Subject** | **Teaching** | | | **Exam Scheme** | | | |
| **L** | **P** | **D/T** | **TP** | **TW** | **P/OE** | **Total** |
| 1 | Power System Stability & Control | 4 | 2 |  | 100 | 25 |  | 125 |
| 2 | Control System Design | 4 | 2 |  | 100 | 50 | 25 | 175 |
| 3 | Power Electronics | 3 | 2 |  | 100 | 50 | 25 | 175 |
| 4 | Microcontroller & its applications | 4 | 2 |  | 100 | 25 | 25 | 150 |
| 5 | Energy Conservation & Engergy Auditing | 3 | 2 |  | 100 | 50 |  | 150 |
| 6 | Seminar |  | 2 |  |  | 25 |  | 25 |
|  |  |  |  |  |  |  |  |  |
|  | Total | 18 | 12 | 0 | 500 | 225 | 75 | 800 |

Note: Industrial Training of 15 Days is to be completed in vacation after TE-II. It will be assessed in BE-I.

**FOURTH YEAR ELECTRICAL ENGINEERING**

Scheme of Teaching and Examination

**Semester –VII (BE-I)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SN** | **Subject** | **Teaching** | | | **Exam Scheme** | | | |
| **L** | **P** | **D/T** | **TP** | **TW** | **P/OE** | **Total** |
| 1 | Microcontroller & Applications | 4 | 2 |  | 100 | 25 | 25 | 150 |
| 2 | Industrial Drives & Control | 4 | 2 |  | 100 | 25 | 25 | 150 |
| 3 | FACTS | 4 |  | 1 | 100 | 25 |  | 125 |
| 4 | Nonlinear & Digitial Control Systems | 4 |  | 1 | 100 | 25 |  | 125 |
| 5 | Elective - I | 3 |  | 1 | 100 | 25 |  | 125 |
| 6 | Seminar |  | 2 |  |  | 25 |  | 25 |
| 7 | Project - P1\* |  | 2 |  |  | 25 | 25 | 50 |
|  | Total | 19 | 8 | 3 | 500 | 175 | 75 | 750 |
| Elective - I: EHVAC, DSP, Electrical Systems Modelling, Neural Network & Fuzzy Logic | | | | | | | | |
| The Seminar should be based on any standard research paper. | | | | | | | | |
| \*The students are supposed to make a model for unconventional energy sources & | | | | | | | | |
| write extensive report on it. | | | | | | | | |

**Semester –VIII (BE-II)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SN** | **Subject** | **Teaching** | | | **Exam Scheme** | | | |
| **L** | **P** | **D/T** | **TP** | **TW** | **P/OE** | **Total** |
| 1 | Switchgear & Protection | 4 | 2 | 1 | 100 | 25 | 25 | 150 |
| 2 | Electrical M/C Design | 4 | 2 | 1 | 100 | 25 | 25 | 150 |
| 3 | Utilization & Energy Conservation | 4 | 2 | 1 | 100 | 50 |  | 150 |
| 4 | Elective - II | 4 |  | 1 | 100 | 25 |  | 125 |
| 5 | Project -II |  | 4 |  |  | 75 | 100 | 175 |
|  | Total | 16 | 10 | 4 | 400 | 200 | 150 | 750 |
| Elective - II: HVDC, Power System Harmonics, Electrical & Electronic Material | | | | | | | | |
| The project -II, term work and project report should contain: | | | | | | | | |
| Literature Survey, Project Theme, Simulation, Fabrication, | | | | | | | | |
| Test Results, Future Scope  **Annexure I – Sample Minutes of Meeting**  **Extracts of the minutes of meeting of governing council of Annasaheb Dange College of Engineering and Technology, Ashta held on 20/02/2009:**   * The minutes of last meeting held on 29th March 2008, read by Principal Dr. S. P. Patil and confirmed. Resolution accepted and approved by all members. * Budget for the renovation of class rooms, procurement of furniture, lab equipment purchases and fabrication work was discussed in the meeting. Committee members approved the budget. * It was suggested to form anti ragging squad at the institution level. * It was also decided to display anti ragging posters in girls and boys hostel. * Institution is completing ten years and Principal explained the importance and need to get the institution accredited. All the Committee members gave their approval for applying for accreditation in the academic year 2009-2010. * It was suggested to host at least one national level cultural event. * Dr. S. P. Patil suggested that it is necessary to install an ATM machine in the college campus. * Present canteen space is not sufficient and a spacious canteen is required. The Principal suggested to construct a new building for canteen. * All the members gave Approval for construction of a new canteen building. * Principal suggested to enhance the internet facility by increasing the speed from 2 mbps to 10 mbps. The members gave their approval for this enhancement. * Members suggested to introduce a system by which the annual increments will be sanctioned after assessing the performance of the particular faculty during past academic year.   **Action Taken Report:**  Following actions are taken on the resolutions passed by the governing council in the meeting held on 20/02/2009.   * Building and class room renovation work is started in the month of March. * Anti ragging squad is formed. * Preparation for accreditation process is in progress and it is planned to submit the application in the month of December 2009. * Anti ragging posters are displayed in girls and boys hostels. * A national level cultural event ‘Yuva Mahotsav’ (Youth festival) is hosted by the college on 3/10/2009. * ATM machine installation is underway. * Construction of Canteen building is completed and shortly it will be in service. * Internet connectivity is enhanced from 2 mbps to 10 mbps. * A committee comprising Principal, Executive Director, Administrative and Academic vice principals is formed to assess the performance of teaching and non teaching faculty at the time of their annual increment.   Dr. S. P. Patil  Principal  **Extracts of the minutes of meeting of local management committee of Annasaheb Dange College of Engineering and Technology, Ashta held on 05.08.2009**   * Minutes of previous meeting held on 13/01.2009 were read by Principal and confirmed by all members. * New members were introduced by the chairman. * The institution is celebrating its tenth year and the Principal explained the necessity and urgency to get the institution accredited. All the members supported this suggestion and it was decided to apply for accreditation in the year 2009.   **Extracts of the minutes of meeting of standing committee of Annasaheb Dange College of Engineering and Technology, Ashta held on 18/09/2009**   * Dr. S. P. Patil read the minutes of the previous meeting and those were confirmed by all. * Dr. S. P. Patil informed all the members about the decision of applying for the accreditation of the institution. * Prof. R.A. Kanai gave brief idea about the renovation work undertaken and proposed plan for the development.   **Extracts of the minutes of meeting of Anti ragging committee of Annasaheb Dange College of Engineering and Technology, Ashta held on 10.07.2009**   * Members of the committee expressed their satisfaction over the ragging free atmosphere in the college campus. * All the members approved forming of an anti ragging squad as suggested by the members of the governing council. Following members will work in the squad during college hours. * Mr. L. Y. Waghmode. * Mr. S. S. Katre. * Mr. R.P.Rajput. * Miss S. F. Bhope. * All the members insisted upon deputing faculty to look after the hostel boys and girls. So a schedule is formed for hostel vigilance rounds by gents and ladies faculty three times every day for two weeks. * As per the directives received from Shivaji University and government of India, it was decided to display rules and names of the committee members along with their phone numbers at boys and girls hostel.   **Action taken report:**   * A schedule of ladies and gents faculty was prepared for daily visits to the hostel. * Boards displaying anti ragging rules and names of the members in the committee are displayed in the boys and girls hostel.   Dr. S. P. Patil  Principal | | | | | | | | |