| | | |
|---|---|---|
| **CRITERION 01** | **Vision, Mission and Program Educational Objectives** | **60** |

**1.2. State the Program Educational Objectives (PEOs) (05)**

The Program Educational Objectives of Electronics & Telecommunication Engineering program is listed below:

PEO 1: The graduates will be able to apply the basic concepts of mathematics, sciences, engineering to solve industrial and societal problems.

PEO 2: The graduates will be able to deal with complex real time problems by applying technical and soft skills.

PEO 3: The graduates will be able to develop awareness towards ethical, societal & environmental issues.

**1.4. State the process for defining the Vision and Mission of the Department, and PEOs of the program (25)**

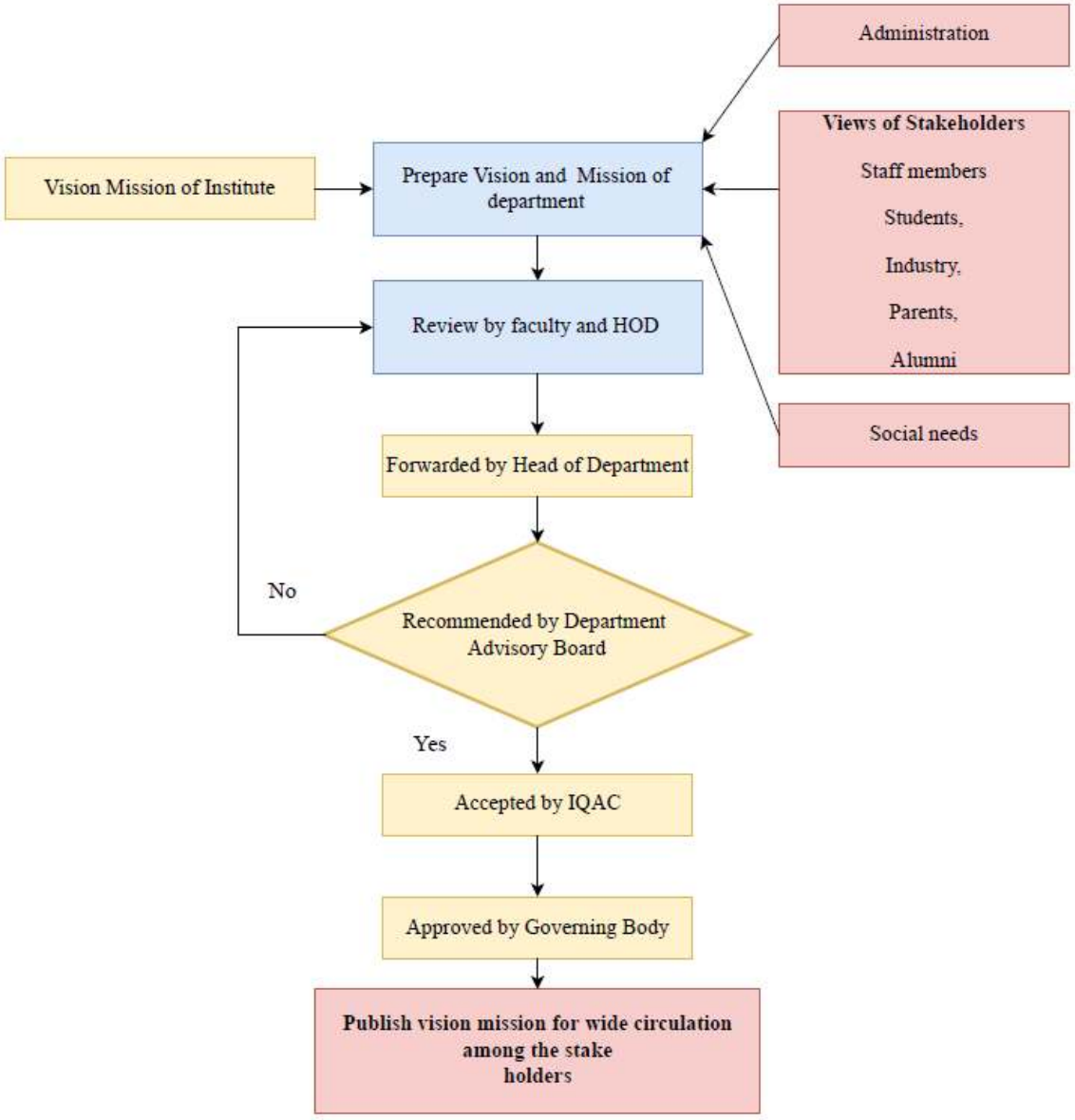



**Figure 1.4 a: Process of defining the Vision & Mission of Department**

- As indicated in the following Figure 1.4a, the department developed its vision and mission statements through consultation with all of its stakeholders, taking into account both its long-term and short-term objectives as well as societal needs. The department's mission

and vision statements were created in the year 2020. The department's Vision and Mission statements can now be reviewed and changed in light of the Graduate Attributes thanks to the new Outcome Based Education (OBE) accreditation procedure.

- While external stake holders include businesses/employers, parents, alumni, professional organizations, etc., internal stake holders include students, faculty members, and others.
- The department's vision and mission have been formulated using the procedures listed below.

  **Step 1:** Based on ongoing input from internal and external stakeholders and in alignment with the vision and goal of the Institute, the head of the department and faculty members draught and manage the department's vision and mission statement.

  **Step 2:** The DAB meeting is where the vision and mission statements are presented and await their advice or suggestions. It flows continuously from the Departmental Advisory Board's final recommendation to the faculty and head of department reviews and vice versa.

  **Step 3:** The IQAC is sent the DAB's recommended vision and mission statements so they can work with the governing body. The governing body has approved it in collaboration with IQAC once it has been recognized by IQAC.

  **Step 4:** The vision and mission statements are finally distributed to internal and external stakeholders via print and digital media.

**Process of Defining the Program Educational Outcomes (PEOs) of the Program**

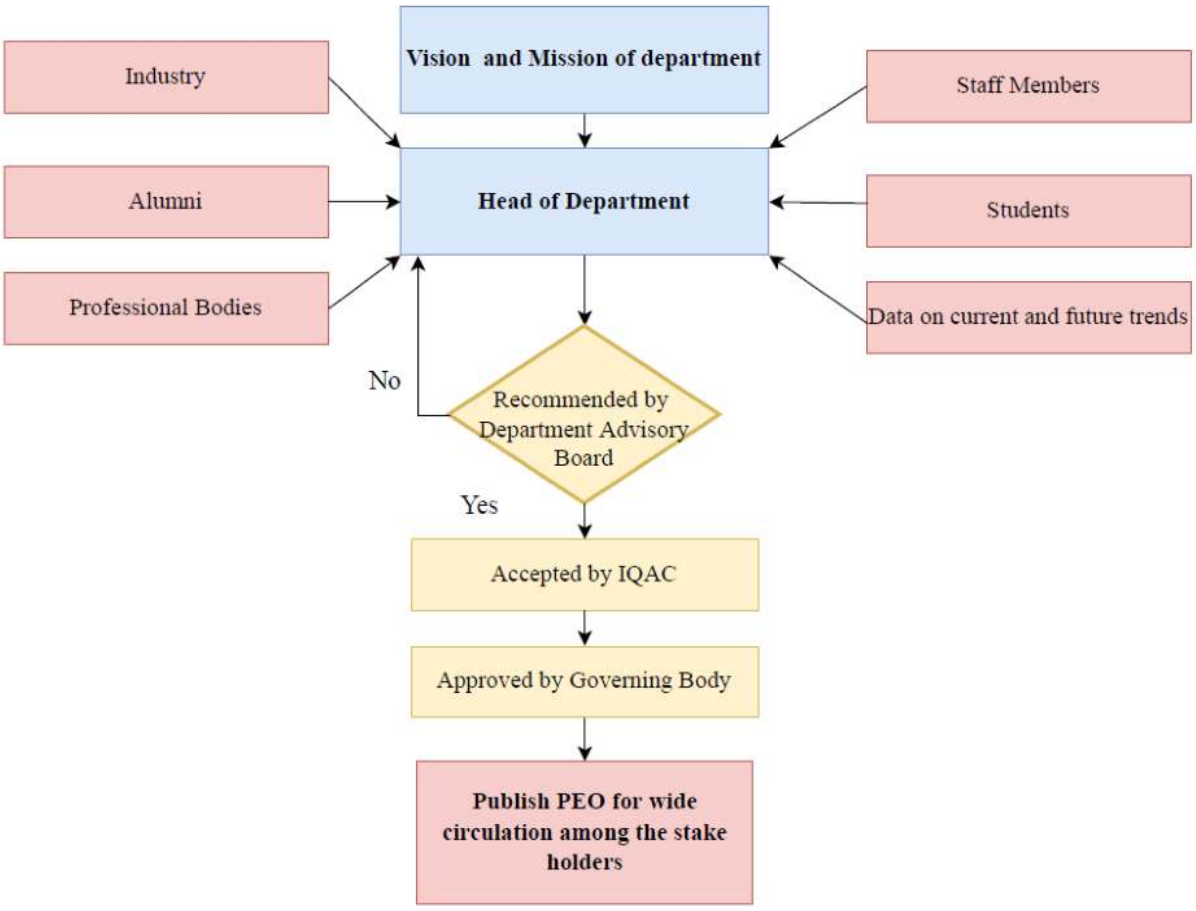



**Figure 1.4 b: Process of defining PEOs of the program**

- As indicated in figure 1.4 b, the process of identifying PEOs is done in collaboration with the program's vision and mission as well as suggestions from a committee made up of representatives from all internal and external stakeholders. The steps that follow are used to create PEOs.
- Step 1: PEOs made up of students, employees, alumni, business professionals, trade associations, and information on current and upcoming trends were developed by the HoD.
- Step 2: The Departmental Advisory Board (DAB) receives the formulated PEOs for their advice or suggestions. Up until the Departmental Advisory Board makes its final recommendation, it is continuously flowing from the HoD to the DAB and vice versa.

- `Step 3: The IQAC is handed the DAB's recommended PEOs statements so that they can work with the governing body in coordination. The governing body has approved it in collaboration with IQAC once it has been recognized by IQAC.
- Step 4: The Program Educational Outcomes (PEOs) statements are finally distributed to internal and external stakeholders through print and digital media.

The following documents are maintained at the department

1. Committee minutes of meeting
2. Stakeholder's feedback/form
3. Parents feedback
4. Alumni inputs
5. DAB: Minutes of meeting

**1.5. Establish consistency of PEOs with Mission of the Department (15)**
**(*Generate a "Mission of the Department – PEOs matrix" with justification and rationale Of the mapping*)**

The Program Educational Objectives are consistent with the Mission statement of the department which is stated in following tables.

**Table 1.5: PEO and Mission Statement Consistency**

| PEO Statements | **M1** | **M2** | **M3** |
|---|---|---|---|
| The graduates will be able to apply the basic concepts of mathematics, sciences, engineering to solve industrial and societal problems | 3 | 2 | 1 |
| The graduates will be able to deal with complex real time problems by applying technical and soft skills. | 2 | 3 | 1 |

| | | | |
|---|---|---|---|
| The graduates will be able to develop awareness towards ethical, societal & environmental issues. | 1 | 2 | 3 |

| PEO Statements | **M1** | **M2** | **M3** | |
|---|---|---|---|---|
| | M1: To enrich academic competency by imparting quality education | M2: To nurture skills among the students helping them succeed and progress in their personal and professional career. | M3: To instill sensitivity towards society and respect for the environment. | |
| PEO1: The graduates will be able to apply the basic concepts of mathematics, sciences, engineering to solve industrial and societal problems | 3 | 2 | 1 | M1substantially correlates with PEO1 as quality education is based on the fundamental concept in Engineering and science where student solve the real-world problems through projects. |
| | | | | M2 moderately correlates with PEO1 as M2 is strongly associated with skills based on fundamental concepts of |

| | | | | |
|---|---|---|---|---|
| | | | | mathematics, sciences and engineering |
| | | | | M3 slightly correlates with PEO1 since it promotes respect towards the society and environment. Hence, there are slight co-relations between PEO1 and M3. |
| PEO2: The graduates will be able to deal with complex real time problems by applying technical and soft skills. | 2 | 3 | 1 | M1 moderately correlates with PEO2 as it emphasizes on enriching academic competency however the PEO2 focuses on applying technical and soft skills for solving real world problem. |
| | | | | M2 substantially correlates with PEO2 as it deals with the upbringing of skills among the students to |

| | | | | |
|---|---|---|---|---|
| | | | | succeed in their career. |
| | | | | M3 slightly correlates with PEO2 as there is more significance on solving real time problem using technical and soft skills rather than imbibing ethical values, respect for the environment, and social responsibility among the students |
| PEO3: The graduates will be able to develop awareness towards ethical, societal & environmental issues. | 1 | 2 | 3 | M1 slightly correlates with PEO3 as it emphasizes on quality education however the PEO3 focuses on awareness of ethical, societal & environmental issues. |
| | | | | M2 moderately correlates with PEO3 as it highlights the development of professional skills among the students to serve the society with ethical values. |

| | | | | |
|---|---|---|---|---|
| | | | | M3 substantially correlates with PEO3 as deals with inculcating ethical values, environmental and social responsibilities. |

| PEOs | Mission Component | | |
|---|---|---|---|
| | M1<br>To enrich academic competency by imparting quality education. | M2<br>To nurture skills among the students helping them succeed and progress in their personal and professional career. | M3<br>To instill sensitivity towards society and respect for the environment. |
| **PEO-1** The graduates will be able to apply the basic concepts of mathematics, sciences, engineering to solve industrial and societal problems. | 3<br>PEO- Apply the basic concepts<br>M- Enrich academic competency | 2<br>PEO- To solve industrial and societal problems<br>M- To nurture skills | 1<br>PEO- To solve industrial and societal problems<br>M- To instill sensitivity towards society |
| **PEO-2** The graduates will be able to deal with complex real time problems by applying technical and soft skills. | 2<br>PEO- Complex real time problems<br>M- Enrich academic competency | 3<br>PEO- Applying technical and soft skills.<br>M-. To nurture skills | 1<br>PEO- To deal with complex real time problems<br>M- To instill sensitivity towards society |
| **PEO-3** The graduates will be able to develop awareness towards | 1<br>PEO- To develop awareness towards ethical issues | 2<br>PEO- To develop awareness towards ethical issues | 3<br>PEO- To develop awareness towards ethical, societal & environmental issues |

| | | | |
|---|---|---|---|
| ethical, societal & environmental issues | M- Imparting quality education. | M- Succeed and progress in their personal and professional career | M- To instill sensitivity towards society and respect for the environment |

| PEOs | Mission Component |
|---|---|
| **PEO-1** The graduates will be able to apply the basic concepts of mathematics, sciences, engineering to solve industrial and societal problems. | **M1 -** To enrich academic competency by imparting quality education. |
| | **M2 -** To nurture skills among the students helping them succeed and progress in their personal and professional career. |
| | **M3 -** To instill sensitivity towards society and respect for the environment. |
| **PEO-2** The graduates will be able to deal with complex real time problems by applying technical and soft skills. | **M1 -** To enrich academic competency by imparting quality education. |
| | **M2 -** To nurture skills among the students helping them succeed and progress in their personal and professional career. |
| | **M3 -** To instill sensitivity towards society and respect for the environment. |
| **PEO-3** The graduates will be able to develop awareness towards ethical, societal & environmental issues | **M1 -** To enrich academic competency by imparting quality education. |
| | **M2 -** To nurture skills among the students helping them succeed and progress in their personal and professional career. |
| | **M3 -** To instill sensitivity towards society and respect for the environment. |

| | | |
|---|---|---|
| **CRITERION 02** | **Program Curriculum and Teaching – Learning Processes** | **120** |

**2.1.1. State the process used to identify the extent of compliance of the University curriculum for attaining the Program Outcomes and Program Specific Outcomes as mentioned in Annexure I. Also mention the identified curricular gaps, if any (10)**

Arvind Gavali College of Engineering, Satara is affiliated with Dr. Babasaheb Ambedkar Technological University (DBATU), Lonere Maharashtra. Electronics & Telecommunication engineering department follows the scheme and syllabus of DBATU University. The scheme follows the semester pattern and is divided into eight semesters for a four-year graduation program. The curriculum contains basic, social sciences, humanities, and professional and elective courses. According to the university curriculum, each course is mapped with 12 Program Outcomes (POs) and 2 Program Specific Outcomes (PSOs), and the evaluation of each PO and PSO is done. The university's recommended courses adhere strictly to all PSOs and POs. Faculty from the Electronics & Telecommunication Program actively participate in developing and implementing University curricula. By setting up several skill-oriented certified add-on courses and industry-sponsored competitions for the student's overall development, academic flexibility is accomplished. To help students fulfill the demands and expectations of the industry, the program offers a variety of supplemental courses.

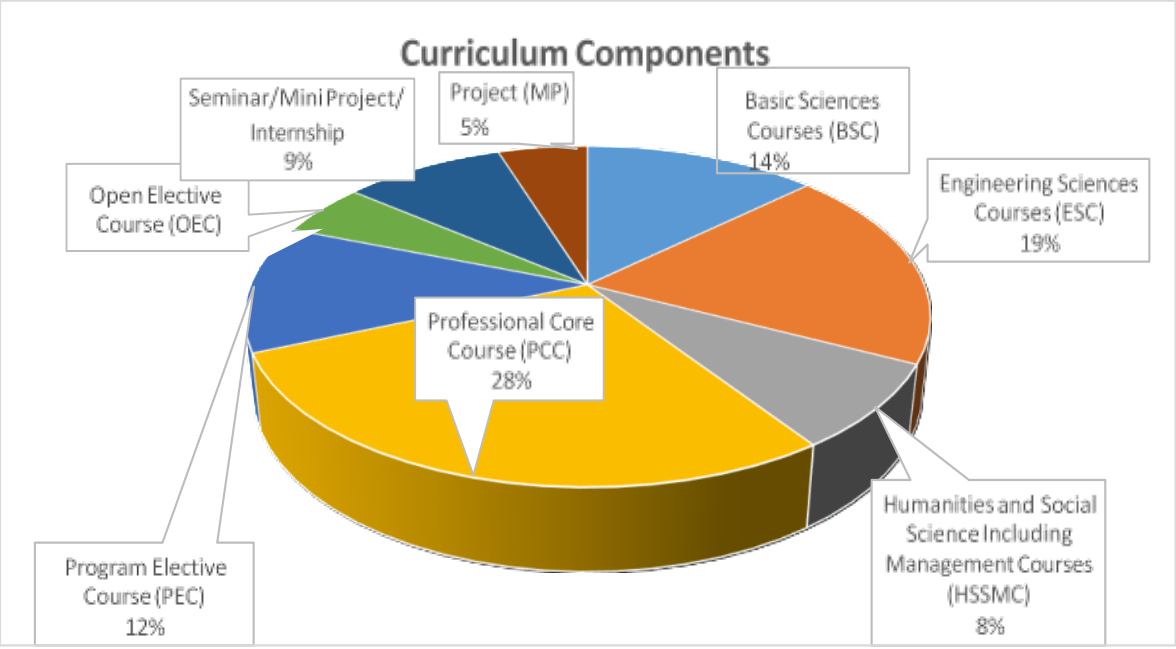



**Fig B 2.1.1a Curriculum Components**

**Table 2.1.1a mapping of curriculum components with PO/ PSOs**

| Sr. No. | Type of Courses Offered | Number of Subjects Mapped | Number of Credits allotted | Weightage in percentage |
|---|---|---|---|---|
| 1 | Basic Science | 10 | 22 | 14 |
| 2 | Engineering Science | 14 | 19 | 19 |
| 3 | Humanities and Social Science including Management Courses | 6 | 03 | 8 |
| 4 | Professional Core Subjects | 21 | 68 | 28 |
| 5 | Program Elective | 9 | 28 | 12 |
| 6 | Open Elective | 4 | 06 | 5 |
| 7 | Mini Project /Major Projects | 4 | 20 | 5 |
| 8 | Seminar/ Internship | 7 | 05 | 9 |
| **Total** | | 75 | 171 | 100 |

**Table B 2.1.1 b University Curriculum Structure**

The institution implements the overall curriculum break up as per DBATU which is for 8 semesters. The curriculum for the Bachelor of Engineering in Electronics & Telecommunication Engineering is given in Table B.2.1.1b

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

**Semester - I**
**Group A**

| Sr. No. | Course Code | Course Title | Weekly Teaching hrs | | | Evaluation Scheme | | | Credit |
|---|---|---|---|---|---|---|---|---|---|
| | | | L | T | P | CA | MSE | ESE | |
| 1 | **Mandatory** | **Induction Program** | **3 weeks duration in the beginning of the semester** | | | | | | |
| 2 | BTBS101 | Engineering Mathematics – I | 3 | 1 | - | 20 | 20 | 60 | 4 |
| 3 | BTBS102 | Engineering Physics | 3 | 1 | - | 20 | 20 | 60 | 4 |
| 4 | BTES103 | Engineering Graphics | 2 | - | - | 20 | 20 | 60 | 2 |
| 5 | BTHM104 | Communication Skills | 2 | - | - | 20 | 20 | 60 | 2 |
| 6 | BTES105 | Energy and Environment Engineering | 2 | - | - | 20 | 20 | 60 | 2 |
| 7 | BTES106 | Basic Civil and Mechanical Engineering | 2 | - | - | 50 | - | - | Audit |
| 8 | BTBS107L | Engineering Physics Lab | - | - | 2 | 60 | - | 40 | 1 |
| 9 | BTBS108L | Engineering Graphics Lab | - | - | 4 | 60 | - | 40 | 2 |
| 10 | BTHM109L | Communication Skills Lab | - | - | 2 | 60 | - | 40 | 1 |
| | | **TOTAL** | **14** | **2** | **8** | **330** | **100** | **420** | **18** |

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

**Semester - II**
**Group B**

| Sr. No. | Course Code | Course Title | Weekly Teaching hrs | | | Evaluation Scheme | | | Credit |
|---|---|---|---|---|---|---|---|---|---|
| | | | L | T | P | CA | MSE | ESE | |
| 1 | BTBS201 | Engineering Mathematics – II | 3 | 1 | - | 20 | 20 | 60 | 4 |
| 2 | BTBS202 | Engineering Chemistry | 3 | 1 | - | 20 | 20 | 60 | 4 |
| 3 | BTES203 | Engineering Mechanics | 2 | 1 | - | 20 | 20 | 60 | 3 |
| 4 | BTES204 | Computer Programming in C | 2 | - | - | 20 | 20 | 60 | 2 |
| 5 | BTES205 | Workshop Practices | - | - | 4 | 60 | - | 40 | 2 |
| 6 | BTES206 | Basic Electrical and Electronics Engineering | 2 | - | - | 50 | - | - | Audit |
| 7 | BTES207L | Computer Programming Lab | - | - | 2 | 60 | - | 40 | 1 |
| 8 | BTBS208L | Engineering Chemistry Lab | - | - | 2 | 60 | - | 40 | 1 |
| 9 | BTES209L | Engineering Mechanics Lab | - | - | 2 | 60 | - | 40 | 1 |
| 10 | BTES210P | Mini Project | - | - | 2 | 60 | - | 40 | 1 |
| 11 | BTES211P | Field Training / Internship / Industrial Training (minimum of 4 weeks which can be completed partially in First Semester and Second Semester or in at one time). | - | - | - | - | - | - | Credit to be evaluated in III Sem |
| | | **TOTAL** | **12** | **3** | **12** | **430** | **80** | **440** | **19** |

## Dr. Babasaheb Ambedkar Technological University, Lonere.

**B. Tech (Electronics & Telecommunication Engineering) / B. Tech (Electronics Engineering)**
**Curriculum for Semester III [Second Year]**

| Sr. No. | Course Code | Course Title | Hours Per Week | | | Evaluation Scheme | | | Total Marks | Credits |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | L | T | P | MSE | CA | ESE | | |
| 1 | BTBSC301 | Engineering Mathematics-III | 3 | 1 | 0 | 20 | 20 | 60 | 100 | 4 |
| 2 | BTEXC302 | Analog Circuits | 2 | 1 | 0 | 20 | 20 | 60 | 100 | 3 |
| 3 | BTEXC303 | Electronic Devices & Circuits | 2 | 1 | 0 | 20 | 20 | 60 | 100 | 3 |
| 4 | BTEXC304 | Network Analysis | 2 | 1 | 0 | 20 | 20 | 60 | 100 | 3 |
| 5 | BTEXC305 | Digital Logic Design | 2 | 1 | 0 | 20 | 20 | 60 | 100 | 3 |
| 6 | BTHM3401 | Basic Human Rights | 2 | 0 | 0 | -- | 50 | -- | 50 | (Audit) |
| 7 | BTEXL307 | Analog Circuits Lab | 0 | 0 | 2 | -- | 60 | 40 | 100 | 1 |
| 8 | BTEXL308 | Electronic Devices & Circuits Lab | 0 | 0 | 2 | -- | 60 | 40 | 100 | 1 |
| 9 | BTEXL309 | Network Analysis Lab | 0 | 0 | 2 | -- | 60 | 40 | 100 | 1 |
| 10 | BTEXL310 | Digital Logic Design Lab | 0 | 0 | 2 | -- | 60 | 40 | 100 | 1 |
| 11 | BTEXW311 | Electronics Workshop | 0 | 0 | 2 | -- | 60 | 40 | 100 | 1 |
| 12 | BTES211P | Field Training/ Internship/Industrial Training Evaluation | -- | -- | -- | -- | -- | 50 | 50 | 1 |
| | | **Total** | **13** | **05** | **10** | **100** | **450** | **550** | **1100** | **22** |

## Dr. Babasaheb Ambedkar Technological University, Lonere.

**B. Tech (Electronics & Telecommunication Engineering) / B. Tech (Electronics Engineering)**
**Curriculum for Semester IV [Second Year]**

| Sr. No | Course Code | Course Title | Hours Per Week | | | Evaluation Scheme | | | Total Marks | Credits |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | L | T | P | MSE | CA | ESE | | |
| 1 | BTEXC401 | Electrical Machines and Instruments | 2 | 1 | 0 | 20 | 20 | 60 | 100 | 3 |
| 2 | BTEXC402 | Analog Communication Engineering | 2 | 1 | 0 | 20 | 20 | 60 | 100 | 3 |
| 3 | BTEXC403 | Microprocessor | 2 | 1 | 0 | 20 | 20 | 60 | 100 | 3 |
| 4 | BTEXC404 | Signals and Systems | 2 | 1 | 0 | 20 | 20 | 60 | 100 | 3 |
| 5 | BTID405 | Product Design Engineering | 1 | 0 | 2 | 30 | 30 | 40 | 100 | 2 |
| 6 | BTBSC406 | Numerical Methods and Computer Programming | 2 | 1 | 0 | 20 | 20 | 60 | 100 | 3 |
| 7 | BTEXL407 | Electrical Machines and Instruments Lab | 0 | 0 | 2 | -- | 60 | 40 | 100 | 1 |
| 8 | BTEXL408 | Analog Communication Engineering Lab | 0 | 0 | 2 | -- | 60 | 40 | 100 | 1 |
| 9 | BTEXL409 | Microprocessor Lab | 0 | 0 | 2 | -- | 60 | 40 | 100 | 1 |
| 10 | BTEXL410 | Signals and Systems Lab | 0 | 0 | 2 | -- | 60 | 40 | 100 | 1 |
| 11 | BTHML411 | Soft-Skill Development | 0 | 0 | 2 | -- | 60 | 40 | 100 | 1 |

Dr. Babasaheb Ambedkar Technological University, Lonere.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 12 | BTEXF412 | Field Training/ Internship/Industrial Training (Minimum 4 weeks which can be completed partially in third semester or fourth semester or in at one time) | -- | -- | -- | -- | -- | -- | -- | 1* (To be evaluated in V$^{th}$ Semester) |
| | | **Total** | **11** | **05** | **12** | **130** | **430** | **540** | **1100** | **22** |

**Semester V**

| Course Category | Course Code | Course Title | Teaching Scheme | | | Evaluation Scheme | | | | Credit |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | L | T | P | CA | MSE | ESE | Total | |
| PCC 5 | BTETC501 | Electromagnetic Field Theory | 3 | 1 | - | 20 | 20 | 60 | 100 | 4 |
| PCC 6 | BTETC502 | Digital Signal Processing | 3 | 1 | - | 20 | 20 | 60 | 100 | 4 |
| PCC 7 | BTETC503 | Analog Communication | 3 | 1 | - | 20 | 20 | 60 | 100 | 4 |
| PEC 2 | BTETPE504 | Group A | 3 | 1 | - | 20 | 20 | 60 | 100 | 4 |
| OEC 1 | BTETOE505 | Group B | 3 | 1 | - | 20 | 20 | 60 | 100 | 4 |
| LC | BTETL506 | Digital Signal Processing Lab & Analog Communication Lab | - | - | 4 | 60 | - | 40 | 100 | 2 |
| Project | BTETM507 | Mini Project – 1 | - | - | 4 | 60 | - | 40 | 100 | 2 |
| Internship | BTETP408 | Internship – 2 Evaluation | - | - | - | - | - | - | - | Audit |
| | | **Total** | **15** | **5** | **8** | **220** | **100** | **380** | **700** | **24** |

| Semester VI | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Course Category | Course Code | Course Title | Teaching Scheme | | | Evaluation Scheme | | | | Credit |
| | | | L | T | P | CA | MSE | ESE | Total | |
| PCC 8 | BTETC601 | Antennas and Wave Propagation | 3 | 1 | - | 20 | 20 | 60 | 100 | 4 |
| PCC 9 | BTETC602 | Digital Communication | 3 | 1 | - | 20 | 20 | 60 | 100 | 4 |
| PEC 3 | BTETPE603 | Group A | 3 | 1 | - | 20 | 20 | 60 | 100 | 4 |
| OEC 2 | BTETOE604 | Group B | 3 | 1 | - | 20 | 20 | 60 | 100 | 4 |
| HSSMC | BTHM605 | Employability and Skill Development | 3 | - | - | 20 | 20 | 60 | 100 | 3 |
| LC | BTETL606 | Digital Communication Lab & Professional Elective Course 3 Lab | - | - | 4 | 60 | - | 40 | 100 | 2 |
| Project | BTETM607 | Mini Project – 2 | - | - | 4 | 60 | - | 40 | 100 | 2 |
| Internship | BTETP608 (Internship – 3) | Field Training / Internship/Industrial Training (minimum of 4 weeks which can be completed partially in third semester and fourth semester or in at one time). | - | - | - | - | - | - | - | Audit (evaluation will be in VII Sem.) |
| | | **Total** | **15** | **4** | **8** | **220** | **100** | **380** | **700** | **23** |

**BSC = Basic Science Course, ESC = Engineering Science Course, PCC = Professional Core Course PEC = Professional Elective Course, OEC = Open Elective Course, LC = Laboratory Course HSSMC = Humanities and Social Science including Management Courses.**

## Semester V

| BTETPE504 Program Elective 2 (Group A) | BTETOE505 Open Elective 1 (Group B) |
|---|---|
| (A) Analog Circuits | (A) Control System Engineering |
| (B) Embedded System Design | (B) Artificial Intelligence and Machine learning |
| (C) Digital System Design | (C) Optimization Techniques |
| (D) Automotive Electronics | (D) Project Management and Operation Research |
| (E) Mixed Signal Design | (E) Augmented, Virtual and Mixed Reality |
| (F) Power Electronics | (F) Open Source Technologies |

## Semester VI

| BTETPE603 Program Elective 3 (Group A) | BTETOE604 Open Elective 2 (Group B) |
|---|---|
| (A) Microprocessors and Microcontrollers | (A) IoT and Industry 4.0 |
| (B) CMOS Design | (B) Deep Learning |
| (C) Nano Electronics | (C) Computer Network |
| (D) Advanced Digital Signal Processing | (D) Industrial Drives and Control |
| (E) Information Theory and Coding | (E) Robotics Design |
| (F) VLSI Signal Processing | (F) Patents and IPR |
| (G) VLSI Design & Technology | (G) Acoustic Engineering |

## B. Tech (Electronics & Telecommunication Engineering)

### Proposed Curriculum for Semester VII [Final Year]

| Sr. No. | Course Code | Type of Course | Course Title | Hours Per Week | | | Evaluation Scheme | | | Total Marks | Credits |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | L | T | P | MSE | CA | ESE | | |
| 1 | BTETC701 | Professional Core Course 1 | Digital Communication | 3 | 0 | 0 | 20 | 20 | 60 | 100 | 3 |
| 2 | BTETPE702 | Program Elective 3 | Group A | 3 | 0 | 0 | 20 | 20 | 60 | 100 | 3 |
| 3 | BTETPE703 | Program Elective 4 | Group B | 3 | 0 | 0 | 20 | 20 | 60 | 100 | 3 |
| 4 | BTETPE704 | Program Elective 5 | Group C | 3 | 0 | 0 | 20 | 20 | 60 | 100 | 3 |
| 5 | BTHM705 | Humanities & Social Science including Management Courses | Financial Management | ρ | 0 | 0 | 20 | 20 | 60 | 100 | 2 |
| 6 | BTETL706 | Program Elective 3 Lab | | 0 | 0 | 2 | -- | 30 | 20 | 50 | 1 |
| 7 | BTETL707 | Program Elective 4 Lab | | 0 | 0 | 2 | -- | 30 | 20 | 50 | 1 |
| 8 | BTETL708 | Program Elective 5 Lab | | 0 | 0 | 2 | -- | 30 | 20 | 50 | 1 |
| 9 | BTETP709 | Project Part I | | 0 | 0 | 8 | -- | 50 | 50 | 100 | 4 |
| 10 | BTETF611 | Field Training/ Internship/Industrial Training Evaluation | | -- | -- | -- | -- | -- | 50 | 50 | 1 |
| | | | **Total** | **14** | **0** | **14** | **100** | **240** | **460** | **800** | **22** |

| **Program Elective- 5 (Group A)** | **Program Elective- 5 (Group B)** | **Program Elective- 5 (Group C)** |
|---|---|---|
| (A) Microwave Theory & Techniques | (A) Embedded System Design | (A) Consumer Electronics |
| (B) RF Circuit Design | (B) Artificial Intelligence Deep learning | (B) Analog Integrated Circuit Design |
| (C) Satellite Communication | (C) VLSI Design & Technology | (C) Soft Computing |
| (D) Fiber Optic Communication | (D) Data Compression & Encryption | (D) Advance Industrial Automation-1 |
| (E) Wireless Sensor Networks | (E) Big Data Analytics | (E) Mechatronics |
| (F) Mobile Computing | (F) Cyber Security | (F) Electronics in Smart City |

**B. Tech (Electronics & Telecommunication Engineering)**

**Course Structure for Semester VIII [Fourth Year] w.e.f. 2020-2021**

| Course Code | Type of Course | Course Title | Weekly Teaching Scheme | | | Evaluation Scheme | | | | Credits |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | L | T | P | MSE | CA | ESE | Total | |
| • Introduction to Internet of Things<br>• Computer Vision and Image Processing<br>• Biomedical Signal Processing<br>• Industrial Automation and Control<br>• Cryptography and Network Security<br>• Digital IC Design<br># Student to opt any two subjects from above list | | | 3 | - | -- | 20* | 20* | 60* | 100 | 3 |
| | | | 3 | - | -- | 20* | 20* | 60* | 100 | 3 |
| BTMEP803 | Project Part-II or Internship* | | -- | -- | 30 | -- | -- | 100 | 150 | 15 |
| | | Total | -- | -- | | | | 220 | 350 | 21 |

The department has well defined process in implementation to achieve the Program Outcomes (PO) and Program Specific Outcomes. If some components, to attain COs/POs are not included in the curriculum provided by DBATU, then department makes additional efforts to impart this knowledge.

Following processes are used to identify the extent of compliance for attaining the program outcomes and Program Specific Outcomes

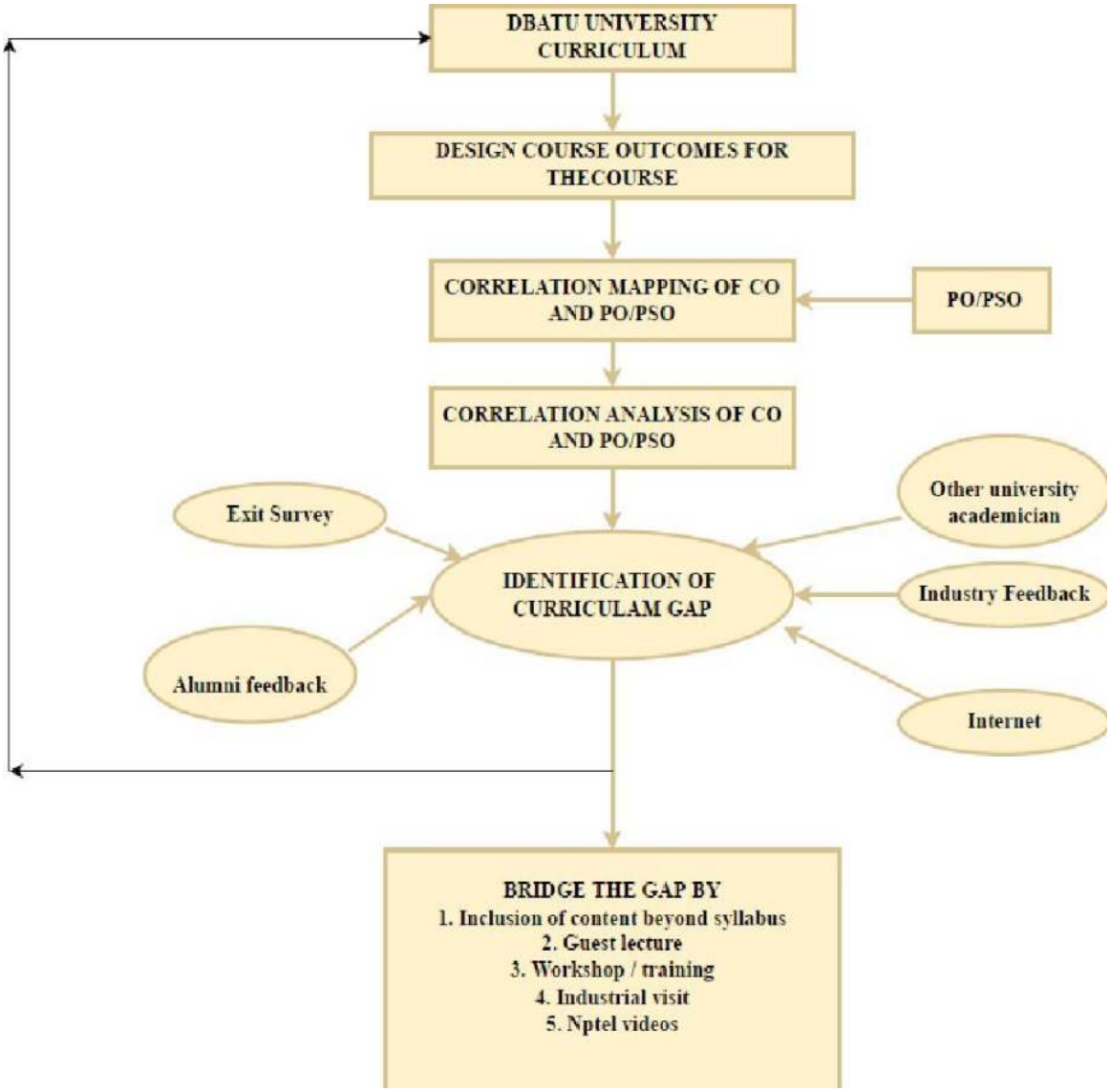



**Fig. 2.1.1 b Process to Identify Curriculum Gaps**

1. The University publishes the curriculum annually in June if changed or updated. The curriculum provides the syllabus of each course.
2. Faculty members design the course outcomes for the course allotted to them. The teaching plan with course objectives and course outcomes is prepared by the individual faculty member of the department before the commencement of a semester.
3. The plan is duly signed by the Head of the Department. The plan ensures the coverage of the complete syllabus before the end of the semester

4. For each course or subject, a course file is prepared by the concerned faculty member. The Co-relation matrix of CO with PO/ PSOs is also designed and analyzed Program Evaluation and Review Committee.
5. The feedback from the alumni, industry experts, and academicians from other Universities and students is regularly taken. Gaps are identified based on the CO attainment of individual courses and feedback from different stakeholders.
6. The data collected is then presented in front of the Program Evaluation and Review Committee. The gaps are discussed in the PERC meeting. To bridge gaps, seminars, workshops, guest lectures, industrial visits, etc. are occasionally arranged by our department/ institute as per convenience, and content beyond the syllabus is prepared accordingly.

**Table B.2.1.1.C mapping of the courses to Program Outcomes**

| Subject Code | Name of Subject | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **F.Y. B Tech Part-I Sem-I** | | | | | | | | | | | | | | | |
| BTBS101 | Engineering Mathematics- I | Y | Y | Y | Y | | Y | | | | | Y | Y | Y | Y |
| BTBS102 | Engineering Physics | Y | Y | Y | Y | | Y | Y | | | | | Y | Y | Y |
| BTES103 | Engineering Graphics | Y | Y | Y | Y | Y | | | | | Y | | Y | Y | |
| BTHM104 | Communication Skills | Y | | | | Y | Y | | Y | | Y | | Y | | Y |
| BTES105 | Energy and Environment Engineering | Y | Y | Y | Y | | Y | Y | Y | | Y | Y | | | |
| BTES106 | Basic Civil and Mechanical Engineering | Y | Y | Y | Y | | Y | Y | | | Y | Y | | | |
| BTBS107L | Engineering Physics Lab | Y | Y | Y | Y | | Y | Y | | Y | | | Y | Y | Y |
| BTES108L | Engineering Graphics Lab | Y | Y | Y | Y | Y | | | | Y | Y | | Y | Y | |
| BTHM109L | Communication Skills Lab. | Y | | | | Y | Y | | Y | | Y | | Y | | |
| **F. Y. B Tech Part-II Sem-II** | | | | | | | | | | | | | | | |
| **Subject Code** | **Name of Subject** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| BTBS201 | Engineering Mathematics-II | Y | Y | Y | Y | | Y | | | | | Y | Y | Y | Y |
| BTBS202 | Engineering Chemistry | Y | Y | | | | Y | Y | | Y | | | | | |
| BTES203 | Engineering Mechanics | Y | Y | Y | | | Y | | | Y | | | | | |
| BTES204 | Computer Programming in C | Y | Y | Y | | | | | | Y | Y | | | Y | |
| BTES205 | Workshop Practices | Y | | | | Y | | | | Y | Y | | | Y | Y |

| Subject Code | Name of Subject | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BTES206 | Basic Electrical and Electronics Engineering | Y | | | | | Y | Y | | | | | | Y | Y |
| BTES207L | Computer Programming Lab | Y | Y | Y | | | | | | Y | Y | | | Y | |
| BTBS208L | Engineering Chemistry Lab | Y | Y | | | | Y | Y | | Y | | | | | |
| BTES209L | Engineering Mechanics Lab | Y | Y | Y | | | Y | Y | | Y | Y | | | | |
| BTES210P | Mini Project | Y | Y | | | Y | Y | Y | Y | Y | Y | | | Y | Y |
| BTES211P | Field Training / Internship/Industrial Training (minimum of 4 weeks which can be completed partially in first semester and second Semester or in at one time). | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| **S.Y. B Tech Part-I Sem-III** | | | | | | | | | | | | | | | |
| **Subject Code** | **Name of Subject** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| BTBSC301 | Engineering Mathematics – III | Y | Y | | | | | | | | | | Y | Y | |
| BTEXC302 | Analog Circuits | Y | Y | Y | Y | | | | | | | | Y | Y | |
| BTEXC303 | Electronic Devices & Circuits | Y | Y | Y | Y | Y | | | | | | | Y | Y | |
| BTEXC304 | Network Analysis | Y | Y | | Y | Y | | | | | | | Y | Y | |
| BTEXC305 | Digital Logic Design | Y | Y | Y | Y | | | | | Y | Y | Y | | Y | Y |
| BTHM3401 | Basic Human Rights | Y | Y | | | | | | | Y | Y | Y | | Y | Y |
| BTEXL307 | Analog Circuits Lab | Y | Y | Y | | | | | | Y | Y | Y | Y | | Y |
| BTEXL308 | Electronic Devices & Circuits Lab | Y | Y | Y | | Y | | | | Y | Y | | | Y | Y |
| | | | | | | | | | | | | | | | |

| Subject Code | Name of Subject | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BTEXL309 | Network Analysis Lab | Y | Y | Y | | Y | | | | Y | Y | | | Y | Y |
| BTEXW311 | Electronics Workshop | Y | Y | Y | | Y | | | | Y | Y | | | Y | Y |
| BTEXL310 | Digital Logic Design Lab | Y | Y | Y | | Y | | | | Y | Y | | | Y | Y |
| BTES211P | Internship – 1 Evaluation | Y | Y | Y | | | | | | Y | Y | Y | Y | | Y |

**S.Y. B Tech Part-II Sem-IV**

| Subject Code | Name of Subject | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BTEXC401 | Electrical Machines and Instruments | Y | Y | Y | Y | | | | | | | | | Y | |
| BTEXC402 | Analog Communication Engineering | Y | Y | Y | Y | Y | | | | | | | | Y | |
| BTEXC403 | Microprocessor | | | | | | Y | Y | Y | Y | Y | | Y | | |
| BTEXC404 | Signals and Systems | Y | Y | Y | Y | | | | | Y | | | | Y | |
| BTID405 | Product Design Engineering | Y | Y | Y | | Y | | | | | | Y | | Y | Y |
| BTBSC406 | Numerical Methods and Computer Programming | Y | Y | Y | Y | | | | Y | Y | Y | | | Y | |
| BTEXL407 | Electrical Machines and Instruments Lab | Y | Y | Y | | | | | | Y | Y | Y | Y | | Y |
| BTEXL408 | Analog Communication Engineering Lab | Y | Y | Y | | Y | | | | Y | Y | | | Y | Y |
| BTEXL409 | Microprocessor Lab | Y | Y | Y | | Y | | | | Y | Y | | | Y | Y |
| BTEXL410 | Signals and Systems Lab | Y | Y | Y | | Y | | | | Y | Y | | | Y | Y |
| BTHML411 | Soft-Skill Development | Y | Y | Y | | Y | | | | Y | Y | | | Y | Y |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BTEXF412 (Internship – 2) | Field Training /Internship/Industrial Training (minimum of 4 weeks which can be completed partially in the third semester and fourth semester or at one time). | Y | Y | | | Y | | | | Y | Y | Y | Y | | Y |

**T.Y. Btech Part-I (Sem- V)**

| Subject Code | Name of Subject | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BTETC501 | Electromagnetic Field Theory | Y | Y | Y | Y | | | | Y | Y | Y | | | Y | |
| BTETC502 | Digital Signal Processing | Y | Y | Y | Y | | | | Y | | Y | | | Y | |
| BTETC503 | Analog Communication | Y | Y | Y | | Y | | | Y | Y | | | Y | Y | |
| BTETPE504 | Analog Circuits | Y | Y | Y | | Y | | | Y | Y | | | | Y | |
| BTETOE604 | Control System Engineering | Y | Y | Y | | Y | | | Y | Y | | | | Y | |
| BTETL506 | Digital Signal Processing Lab & Analog Communication Lab | Y | Y | Y | Y | | | | | | | | | Y | |
| BTETM507 | Mini Project – 1 | Y | Y | Y | Y | | | | | Y | Y | Y | Y | | Y |
| BTETP408 | Internship – 2 Evaluation | Y | Y | | Y | Y | | | | Y | Y | Y | Y | | Y |

**T.Y. Btech Part-II (Sem- VI)**

| Subject Code | Name of Subject | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BTETC601 | Antennas and Wave Propagation | Y | Y | Y | | Y | | | Y | | | | Y | Y | Y |
| BTETC602 | Digital Communication | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | | Y | Y | Y |
| BTETPE603 | Microprocessors and Microcontrollers | Y | Y | Y | Y | Y | | Y | Y | | Y | | Y | Y | Y |
| BTETOE604 | Computer Network | Y | Y | Y | | Y | | Y | Y | | Y | | Y | Y | |
| **Subject Code** | **Name of Subject** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BTHM605 | Employability and Skill Development | Y | Y | Y | | Y | | Y | Y | | Y | | Y | | Y |
| BTETL606 | Digital Communication Lab & Professional Elective Course 3 Lab | Y | | | | | Y | | Y | Y | Y | Y | Y | Y | |
| BTETM607 | Mini Project – 2 | Y | Y | Y | | Y | | | | Y | Y | Y | | | Y |
| BTETL608 | Program Elective 2 Lab | Y | Y | Y | | Y | | | | Y | Y | Y | | | Y |
| BTETP608 | Field Training / Internship/Industrial Training (minimum of 4 weeks which can be completed partially in third semester and fourth semester or in at one time). | Y | Y | Y | Y | Y | | | Y | Y | Y | Y | | | Y |
| **Final Year B.Tech (Sem- VII)** | | | | | | | | | | | | | | | |
| **Subject Code** | **Name of Subject** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| BTETC701 | Digital Communication | Y | Y | Y | Y | Y | | Y | | Y | Y | | Y | Y | |
| BTETPE702 - Group A | Wireless Sensor Networks | Y | Y | Y | | Y | Y | Y | | Y | Y | | Y | Y | |
| BTETPE703 - Group B | Embedded System Design | Y | Y | Y | | Y | Y | | | Y | Y | | Y | Y | |
| BTETPE704 - Group C | Mechatronics | Y | Y | Y | | Y | Y | | | Y | Y | | | Y | |
| BTHM705 | Financial Management | | Y | Y | | Y | | Y | Y | | | | Y | | Y |
| BTEEL706 | Wireless Sensor Networks -Program Elective 3 Lab | Y | Y | | | Y | Y | | Y | Y | Y | Y | Y | Y | Y |
| BTEEL707 | Embedded System Design -Program Elective 4 Lab | Y | Y | | | Y | Y | | Y | Y | Y | Y | | Y | Y |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BTEEL708 | Mechatronics - Program Elective 5 Lab | Y | Y | | | Y | Y | | Y | Y | Y | Y | Y | Y | Y |
| BTETP709 | Project Part I | Y | Y | Y | | Y | Y | Y | | Y | Y | Y | Y | | Y |
| BTETF611 | Field Training/ Internship/Industrial Training Evaluation | Y | Y | Y | Y | Y | | | | Y | Y | Y | Y | | Y |
| **Final Year BTech (Sem- VIII)** | | | | | | | | | | | | | | | |
| **Subject Code** | **Name of Subject** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| BTETPE802A | Introduction to Internet of Things | Y | Y | Y | | Y | | | | Y | Y | | Y | Y | |
| BTETPE802D | Industrial Automation and Control | Y | Y | Y | Y | Y | Y | | | | | Y | Y | Y | |
| BTMEP803 | Project Part-II | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | | Y |
| | **Total (75)** | 72 | 67 | 57 | 29 | 45 | 27 | 20 | 23 | 48 | 51 | 25 | 38 | 51 | 40 |
| | **Percentage** | 96 | 89.33 | 76 | 38.66 | 60 | 36 | 26.6 | 30.66 | 64 | 68 | 33.33 | 50.66 | 68 | 53.33 |
| | | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |

**Curricular Gaps**

The following table lists the identified gaps in the syllabus of DBATU University for the attainment of Program Outcomes and Program Specific Outcomes as per the above mapping.

**Table B 2.1.1.d Gaps in Program Outcomes of University Curriculum**

| Sr. No. | PO's | Description |
|---|---|---|
| 1 | PO4 | Investigation |
| 2 | PO6 | Energy & Society |
| 3 | PO7 | Environment & sustainability |
| 4 | PO8 | Ethics |
| 5 | PO11 | Project Management & Finance |

Following are the curriculum gap identified:

**Academic Year 2022-23**

**Table B.2.1.1 e Identified Curricular Gaps**

| Sr. No | Relevant Course/Area | Curriculum Gap Identified | Relevance to PO & PSO |
|---|---|---|---|
| 1 | Electronics Devices and Circuits | Performance Parameter of Transformers | PO2<br>PO3<br>PO4<br>PSO1 |
| 2 | Electromagnetic Field Theory | Static Magnetic Fields | PO1<br>PO2<br>PO3<br>PO4<br>PO11<br>PSO1 |
| 3 | Python Programming | Object-Oriented Programming OOP in Python | PO1<br>PO2<br>PO12<br>PSO1 |
| 4 | Internet of Things | Device Design ,Cloud Computing | PO1<br>PO2<br>PO3<br>PO4<br>PSO1<br>PSO2 |

**Academic Year 2021-22**

**Table B.2.1.1 f Identified Curricular Gaps**

| Sr. No | Relevant Course/Area | Curriculum Gap Identified | Relevance to PO & PSO |
|---|---|---|---|
| 1 | Probability Theory and Random Processes | Probability in EMIII | PO2<br>PO3<br>PSO1 |
| 2 | Embedded System | CAN Network Protocol | PO1<br>PO2<br>PO3<br>PO5<br>PO11<br>PO12 |
| 3 | Digital Communication | Digital Communication on(5G to 7G) | PO1<br>PO2<br>PO12 |
| 4 | Control System Engineering | Roll of control system & instrumentation engineering | PO1<br>PO8<br>PO9<br>PO11 |

**Academic Year 2020-21**

**Table B.2.1.1 g Identified Curricular Gaps**

| Sr. No | Relevant Course/Area | Curriculum Gap Identified | Relevance to PO & PSO |
|---|---|---|---|
| 1 | Numerical Methods and Computer Programming | C++ programming | PO4<br>PSO2 |
| 2 | Digital Signal Processing | Signaling Concept | PO1<br>PO2<br>PO3<br>PSO2 |

| | | | |
|---|---|---|---|
| 3 | Computer Network & Cloud Computing | Cloud Computing | PO1<br>PO5<br>PO9<br>PSO1 |

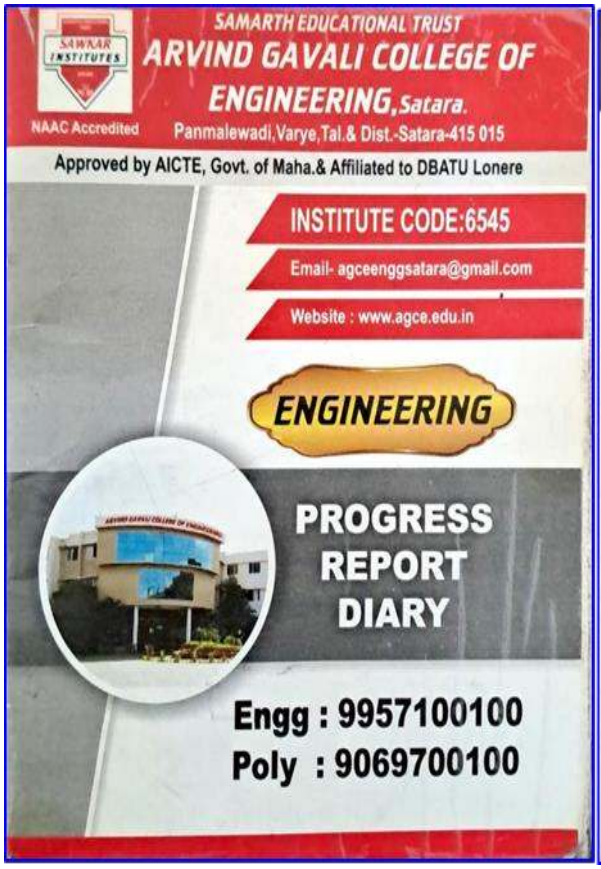
**Academic Year 2019-2020**

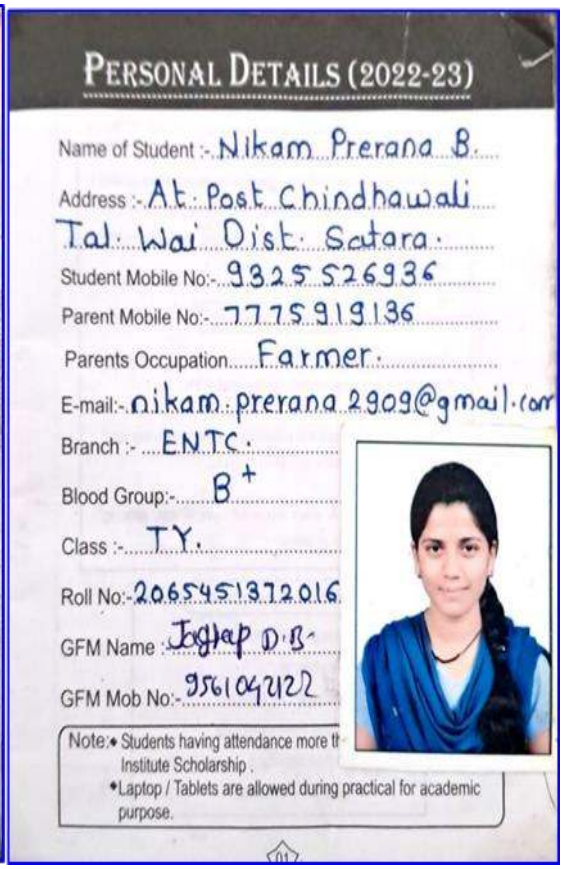
**Table B.2.1.1 h Identified Curricular Gaps**

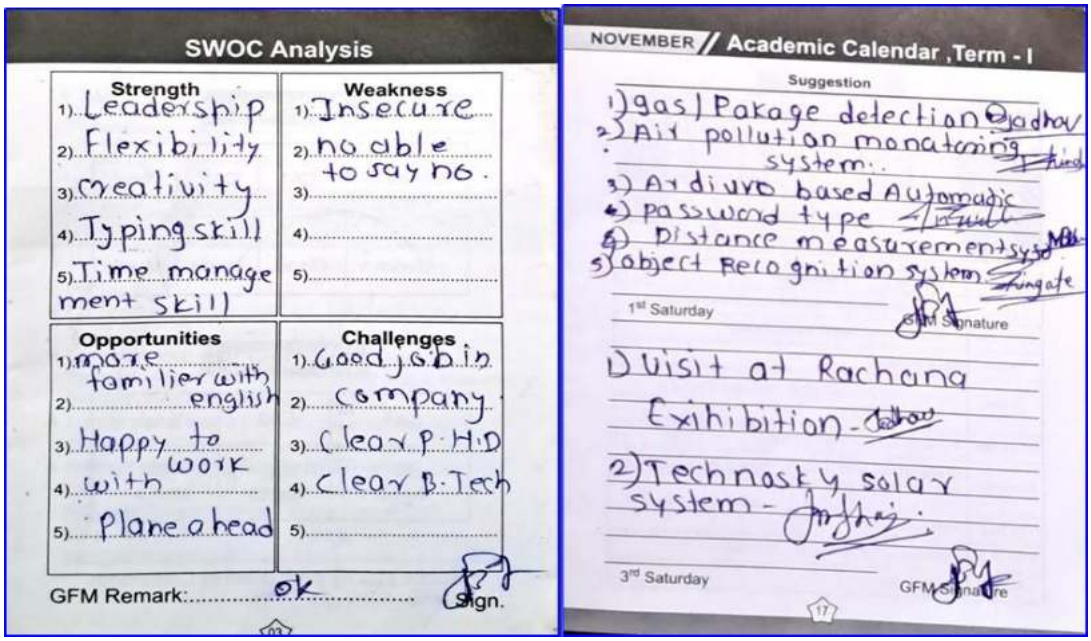
| **Sr. No** | **Relevant Course/Area** | **Curriculum Gap Identified (Content Beyond Syllabus)** | **Relevance to PO & PSO** |
|---|---|---|---|
| 1 | Electronics Devices & Circuits | Basic Fundamentals of Electronics | PO1<br>PO2 |
| 2 | Electrical Machines and Instruments | Measurement & Instrument | PO1<br>PO5<br>PSO1 |
| 3 | Python Programming | Library | PO5<br>PSO2 |
| 4 | Microcontroller and its Applications | Microprocessor 8085/8086 | PO1,<br>PO2,<br>PO3<br>PO5<br>PO11<br>PO12 |
| 5 | Employability & Skill Development | Communication & Presentation Skill | PO6<br>PO10<br>PO11<br>PSO2 |
| 6 | Digital Communication | Analog Communication Engineering | PO1<br>PO11<br>PSO1<br>PSO2 |
| 7 | Mechatronics | Analog Circuits | PO1<br>PO9<br>PSO2 |

### 2.2.1.C. Methodologies to support weak students and encourage bright students (4)

Departments have a proper mechanism to support the weak-performing student as well as encourage bright students. Identification of weak and bright students is carried out by considering their previous academic performance and feedback from Guardian Faculty members. For every batch of 20 students, one faculty is appointed as a guardian faculty member (GFM) who takes care of all these students as a guardian. This faculty member listens to all personal problems of student, council them, and help them to sort out their issues. Based on counseling department identifies areas of improvement and do the necessary plan which involves remedial classes, improvement test, and extra assignment, this enables the weak students to participate and perform better in understanding the concepts, internal assessment, and university exams.





SWOC Analysis

| Strength | Weakness |
|---|---|
| 1) Leadership | 1) Insecure |
| 2) Flexibility | 2) no able to say no. |
| 3) creativity | 3) |
| 4) Typing skill | 4) |
| 5) Time management skill | 5) |

| Opportunities | Challenges |
|---|---|
| 1) more familier with english | 1) Good job in company |
| 2) | 2) |
| 3) Happy to work with | 3) Clear P.H.D |
| 4) | 4) Clear B.Tech |
| 5) Plane ahead | 5) |

GFM Remark: ok Sign.

NOVEMBER // Academic Calendar ,Term - I

Suggestion

1) gas / Pakage detection
2) Air pollution monatoring system.
3) Arduino based Automatic
4) password type
5) Distance measurement sys
6) object Recognition system

1st Saturday GFM Signature

1) Visit at Rachana Exhibition -

2) Technosky solar system -

3rd Saturday GFM Signature

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**Fig. B.2.2.1 h: Student Progress Diary 2022-23**

SAMARTH EDUCATIONAL TRUST

ARVIND GAVALI COLLEGE OF ENGINEERING, SATARA

NAAC Accredited

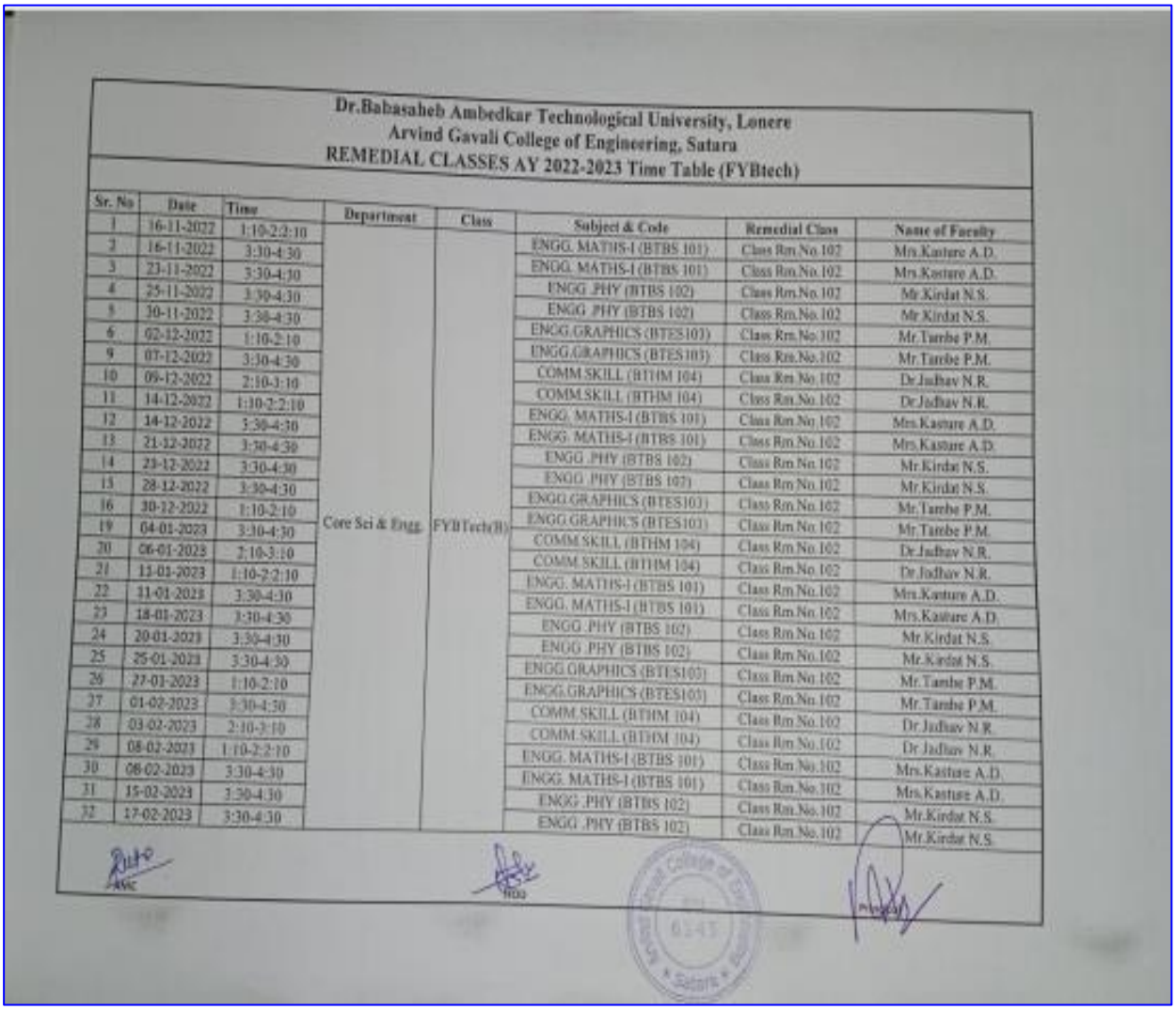
**Remedial Classes For**

**FYBTECH AY 2022-23**

- Remedial classes for the students have been planned in the timetable.
- Remedial Classes will conducted from 14 Nov 2022 to 28 Feb 2023 .
- Weekly 2Hrs of Classroom Coaching, practice sessions and doubt solving was done during semester I.
- All doubts of students were cleared by the subject teacher.
- Attendance was maintained for the same.

AMC HOD Principal

**Fig. B.2.2.1 i: Notice of Remedial Classes**



Dr.Babasaheb Ambedkar Technological University, Lonere
Arvind Gavali College of Engineering, Satara
REMEDIAL CLASSES AY 2022-2023 Time Table (FYBtech)

| Sr. No | Date | Time | Department | Class | Subject & Code | Remedial Class | Name of Faculty |
|---|---|---|---|---|---|---|---|
| 1 | 16-11-2022 | 1:10-2:2:10 | Core Sci & Engg. | FYBTech(B) | ENGG. MATHS-I (BTBS 101) | Class Rm.No.102 | Mrs.Kasture A.D. |
| 2 | 16-11-2022 | 3:30-4:30 | | | ENGG. MATHS-I (BTBS 101) | Class Rm.No.102 | Mrs.Kasture A.D. |
| 3 | 23-11-2022 | 3:30-4:30 | | | ENGG .PHY (BTBS 102) | Class Rm.No.102 | Mr.Kirdat N.S. |
| 4 | 25-11-2022 | 3:30-4:30 | | | ENGG .PHY (BTBS 102) | Class Rm.No.102 | Mr.Kirdat N.S. |
| 5 | 30-11-2022 | 3:30-4:30 | | | ENGG.GRAPHICS (BTES103) | Class Rm.No.102 | Mr.Tambe P.M. |
| 6 | 02-12-2022 | 1:10-2:10 | | | ENGG.GRAPHICS (BTES103) | Class Rm.No.102 | Mr.Tambe P.M. |
| 9 | 07-12-2022 | 3:30-4:30 | | | COMM.SKILL (BTHM 104) | Class Rm.No.102 | Dr.Jadhav N.R. |
| 10 | 09-12-2022 | 2:10-3:10 | | | COMM.SKILL (BTHM 104) | Class Rm.No.102 | Dr.Jadhav N.R. |
| 11 | 14-12-2022 | 1:10-2:2:10 | | | ENGG. MATHS-I (BTBS 101) | Class Rm.No.102 | Mrs.Kasture A.D. |
| 12 | 14-12-2022 | 3:30-4:30 | | | ENGG. MATHS-I (BTBS 101) | Class Rm.No.102 | Mrs.Kasture A.D. |
| 13 | 21-12-2022 | 3:30-4:30 | | | ENGG .PHY (BTBS 102) | Class Rm.No.102 | Mr.Kirdat N.S. |
| 14 | 23-12-2022 | 3:30-4:30 | | | ENGG .PHY (BTBS 102) | Class Rm.No.102 | Mr.Kirdat N.S. |
| 15 | 28-12-2022 | 3:30-4:30 | | | ENGG.GRAPHICS (BTES103) | Class Rm.No.102 | Mr.Tambe P.M. |
| 16 | 30-12-2022 | 1:10-2:10 | | | ENGG.GRAPHICS (BTES103) | Class Rm.No.102 | Mr.Tambe P.M. |
| 19 | 04-01-2023 | 3:30-4:30 | | | COMM.SKILL (BTHM 104) | Class Rm.No.102 | Dr.Jadhav N.R. |
| 20 | 06-01-2023 | 2:10-3:10 | | | COMM.SKILL (BTHM 104) | Class Rm.No.102 | Dr.Jadhav N.R. |
| 21 | 11-01-2023 | 1:10-2:2:10 | | | ENGG. MATHS-I (BTBS 101) | Class Rm.No.102 | Mrs.Kasture A.D. |
| 22 | 11-01-2023 | 3:30-4:30 | | | ENGG. MATHS-I (BTBS 101) | Class Rm.No.102 | Mrs.Kasture A.D. |
| 23 | 18-01-2023 | 3:30-4:30 | | | ENGG .PHY (BTBS 102) | Class Rm.No.102 | Mr.Kirdat N.S. |
| 24 | 20-01-2023 | 3:30-4:30 | | | ENGG .PHY (BTBS 102) | Class Rm.No.102 | Mr.Kirdat N.S. |
| 25 | 25-01-2023 | 3:30-4:30 | | | ENGG.GRAPHICS (BTES103) | Class Rm.No.102 | Mr.Tambe P.M. |
| 26 | 27-01-2023 | 1:10-2:10 | | | ENGG.GRAPHICS (BTES103) | Class Rm.No.102 | Mr.Tambe P.M. |
| 27 | 01-02-2023 | 3:30-4:30 | | | COMM.SKILL (BTHM 104) | Class Rm.No.102 | Dr.Jadhav N.R. |
| 28 | 03-02-2023 | 2:10-3:10 | | | COMM.SKILL (BTHM 104) | Class Rm.No.102 | Dr.Jadhav N.R. |
| 29 | 08-02-2023 | 1:10-2:2:10 | | | ENGG. MATHS-I (BTBS 101) | Class Rm.No.102 | Mrs.Kasture A.D. |
| 30 | 08-02-2023 | 3:30-4:30 | | | ENGG. MATHS-I (BTBS 101) | Class Rm.No.102 | Mrs.Kasture A.D. |
| 31 | 15-02-2023 | 3:30-4:30 | | | ENGG .PHY (BTBS 102) | Class Rm.No.102 | Mr.Kirdat N.S. |
| 32 | 17-02-2023 | 3:30-4:30 | | | ENGG .PHY (BTBS 102) | Class Rm.No.102 | Mr.Kirdat N.S. |

**Fig. B.2.2.1 j: Remedial Classes Time Table**

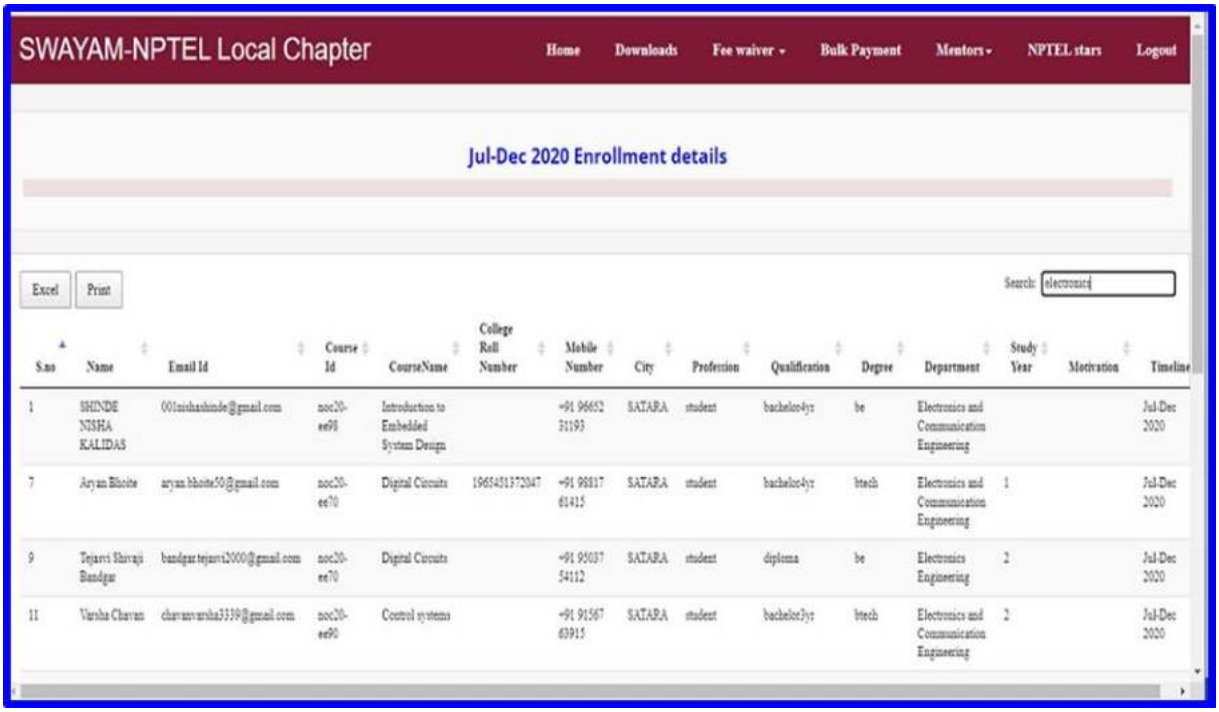
Brighten students are encouraged to learn content beyond the syllabus through MOOC platforms NPTEL courses, Coursera also MIT Open-source online education. Institute has a separate NPTEL Local Chapter (LC-ID 521), through which various advanced courses in various sectors like project management, software engineering, etc. are made available to bight students.

This enables the bright students:

a) Update themselves with the latest tools and technologies

b) Demonstrate critical thinking and take up innovative projects

c) Taking up higher studies in the field of research and development enhances their skill and managerial quality to become successful entrepreneurs/employees.



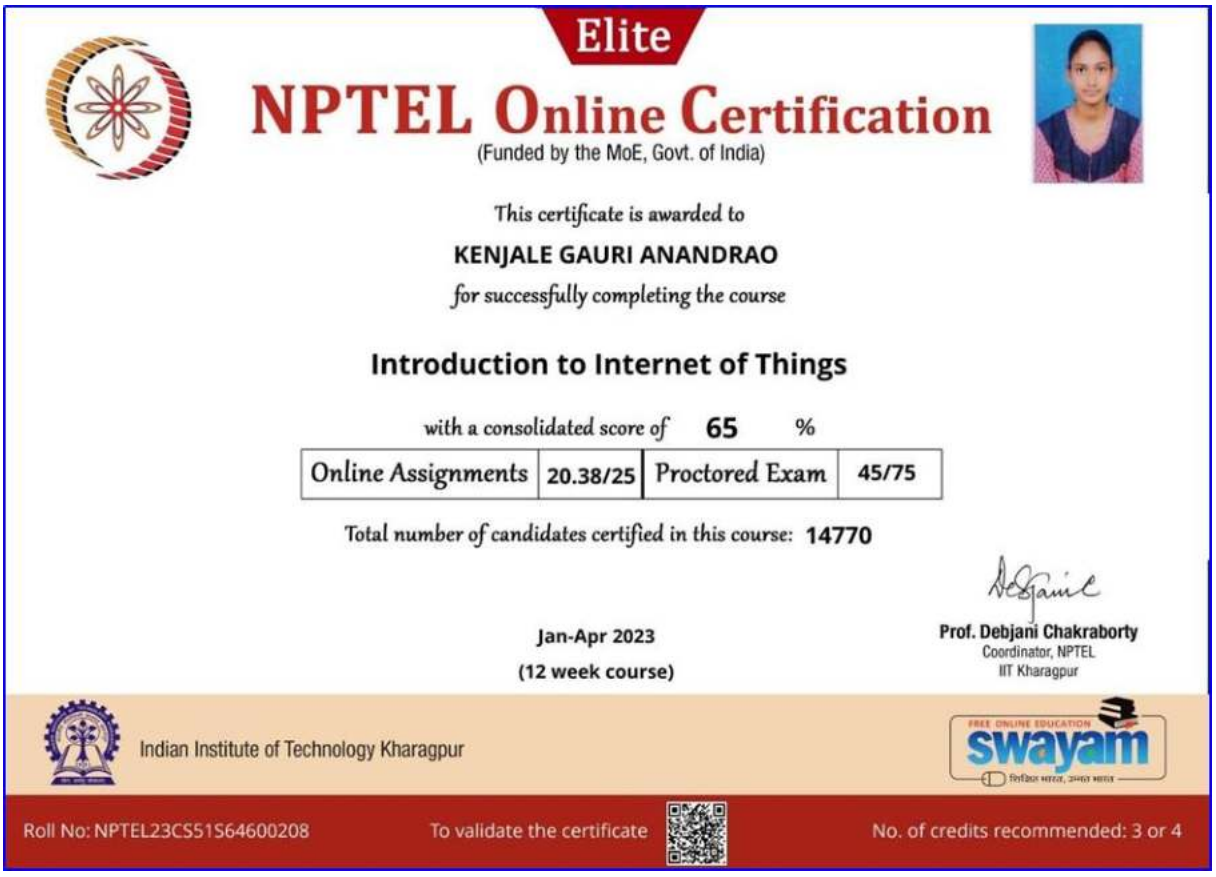
SWAYAM-NPTEL Local Chapter

Home | Downloads | Fee waiver | Bulk Payment | Mentors | NPTEL stars | Logout

Jul-Dec 2020 Enrollment details

Excel | Print | Search: electronics

| S.no | Name | Email Id | Course Id | CourseName | College Roll Number | Mobile Number | City | Profession | Qualification | Degree | Department | Study Year | Motivation | Timeline |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SHINDE NISHA KALIDAS | 001nishashinde@gmail.com | noc20-ee98 | Introduction to Embedded System Design | | +91 96652 31193 | SATARA | student | bachelor4yr | be | Electronics and Communication Engineering | | | Jul-Dec 2020 |
| 7 | Aryan Bhoite | aryan.bhoite50@gmail.com | noc20-ee70 | Digital Circuits | 1965451372047 | +91 98817 61415 | SATARA | student | bachelor4yr | btech | Electronics and Communication Engineering | 1 | | Jul-Dec 2020 |
| 9 | Tejasvi Shivaji Bandgar | bandgar.tejasvi2000@gmail.com | noc20-ee70 | Digital Circuits | | +91 95037 54112 | SATARA | student | diploma | be | Electronics Engineering | 2 | | Jul-Dec 2020 |
| 11 | Varsha Chavan | chavanvarsha3339@gmail.com | noc20-ee90 | Control systems | | +91 91567 63915 | SATARA | student | bachelor3yr | btech | Electronics and Communication Engineering | 2 | | Jul-Dec 2020 |



Elite

NPTEL Online Certification

(Funded by the MoE, Govt. of India)

This certificate is awarded to

KENJALE GAURI ANANDRAO

for successfully completing the course

Introduction to Internet of Things

with a consolidated score of 65 %

| Online Assignments | 20.38/25 | Proctored Exam | 45/75 |
|---|---|---|---|

Total number of candidates certified in this course: 14770

Jan-Apr 2023

(12 week course)

Prof. Debjani Chakraborty
Coordinator, NPTEL
IIT Kharagpur

Indian Institute of Technology Kharagpur

swayam

Roll No: NPTEL23CS51S64600208 To validate the certificate No. of credits recommended: 3 or 4

Department announces every year the "Best outgoing student" of the program. Selection is carried out based on one's continuous quality performance in all sorts of activities which include curricular, extracurricular, internships, competitions, innovative projects undertaken and completed, MOOC courses studied, and university marks, following table shows the last three years' best outgoing students.

**Table B.2.2.1a: Best outgoing student award**

| Sr. No. | Name of Student | Academic Year |
|---|---|---|
| 1 | Shinde Monika Ankush | 2022-23 |
| 2 | Chavan Varsha Kashinath | 2021-22 |
| 3 | Mali Bhagyashri Ragunath | 2020-21 |
| 4 | Shinde Prajakta Rajaram | 2019-20 |

**2.2.3. C. Process for project monitoring and evaluation (5)**

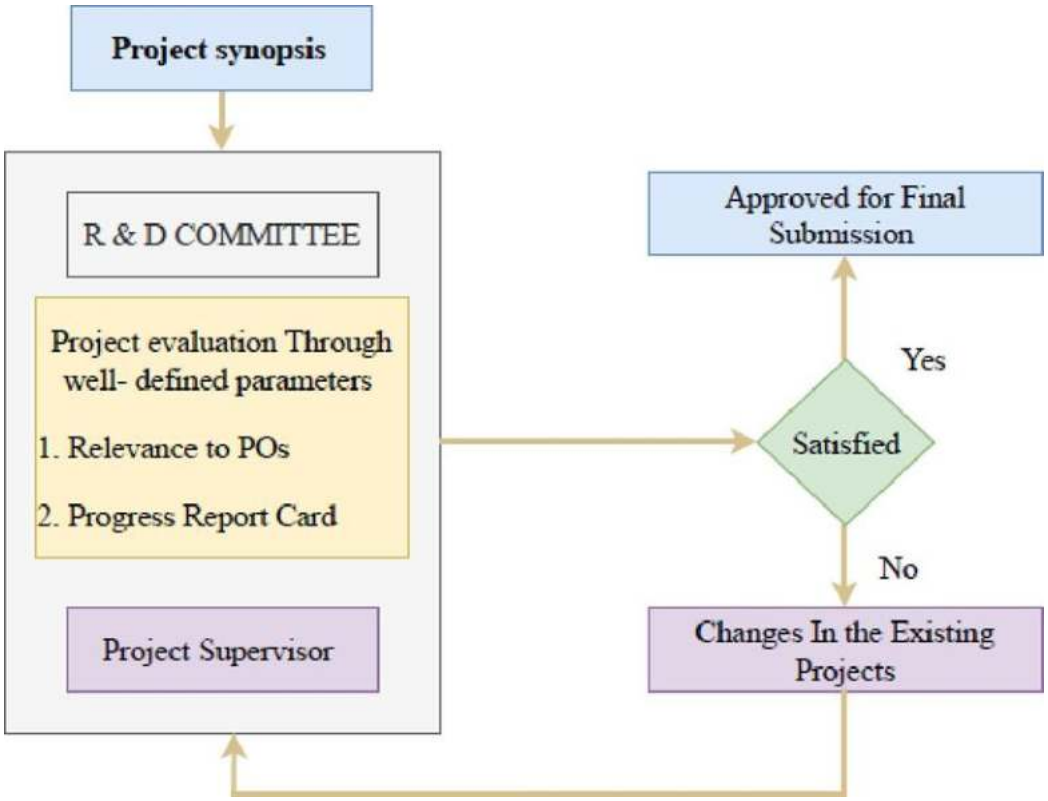



**Fig B.2.2.3.c: Project Assessment Mechanism**

**Procedure for monitoring & evaluation:**

**a.** Students have to submit the synopsis of the project work to the coordinators for feasibility checking.

b. The project work coordinators and the RR committee will scrutinize the synopsis and give suggestions for improvements in strengthening the synopsis.

c. In case, the group of students taking projects from the Public/Private sectors needs to take approval from the HOD and a Letter of Reference sent to the concerned sector. A faculty member of the department functions as an Internal Guide to such students and the scientist/researcher in the concerned sector functions as an External Guide.

d. Every week, the students should meet their concern guide and update their project work progress. The students/batch must give a presentation on the project in front of the project work review committee (RR Committee) as scheduled in Phase-1 & Phase-2.

Finally, the RR committee evaluates the projects for respective domains

**Evaluation by project assessment committee:**

**Phase 1:**

**Table B.2.2.3 f Project Evaluation Scheme**

| Sr. No | Performance Indicators/Rubrics | CO Mapping |
|---|---|---|
| 1 | Identification of Problem | CO1 |
| 2 | Literature Review/ Feasibility of Project | CO2 |
| 3 | Industry Sponsored/Research/Peer Review Paper Based | CO6 |
| 4 | Synopsis | CO1,CO2, CO6 |
| 5 | Objectives and Methodology of the Proposed Work | CO1,CO2 |
| 6 | Planning of the Project Work and Team Structure | CO4 |
| 7 | Presentation | CO6 |
| 8 | Technical Knowledge and Awareness Related to the Project | CO1,CO2 |
| 9 | Effectiveness of Communication | CO6 |
| 10 | Working Within a Team | CO4 |

All the above-mentioned performance indicators are evaluated on a

scale of 1-5. Excellent: 5

Very Good: 4

Good: 3

Satisfactory: 2

Not Satisfactory: 1

**Phase 2:**

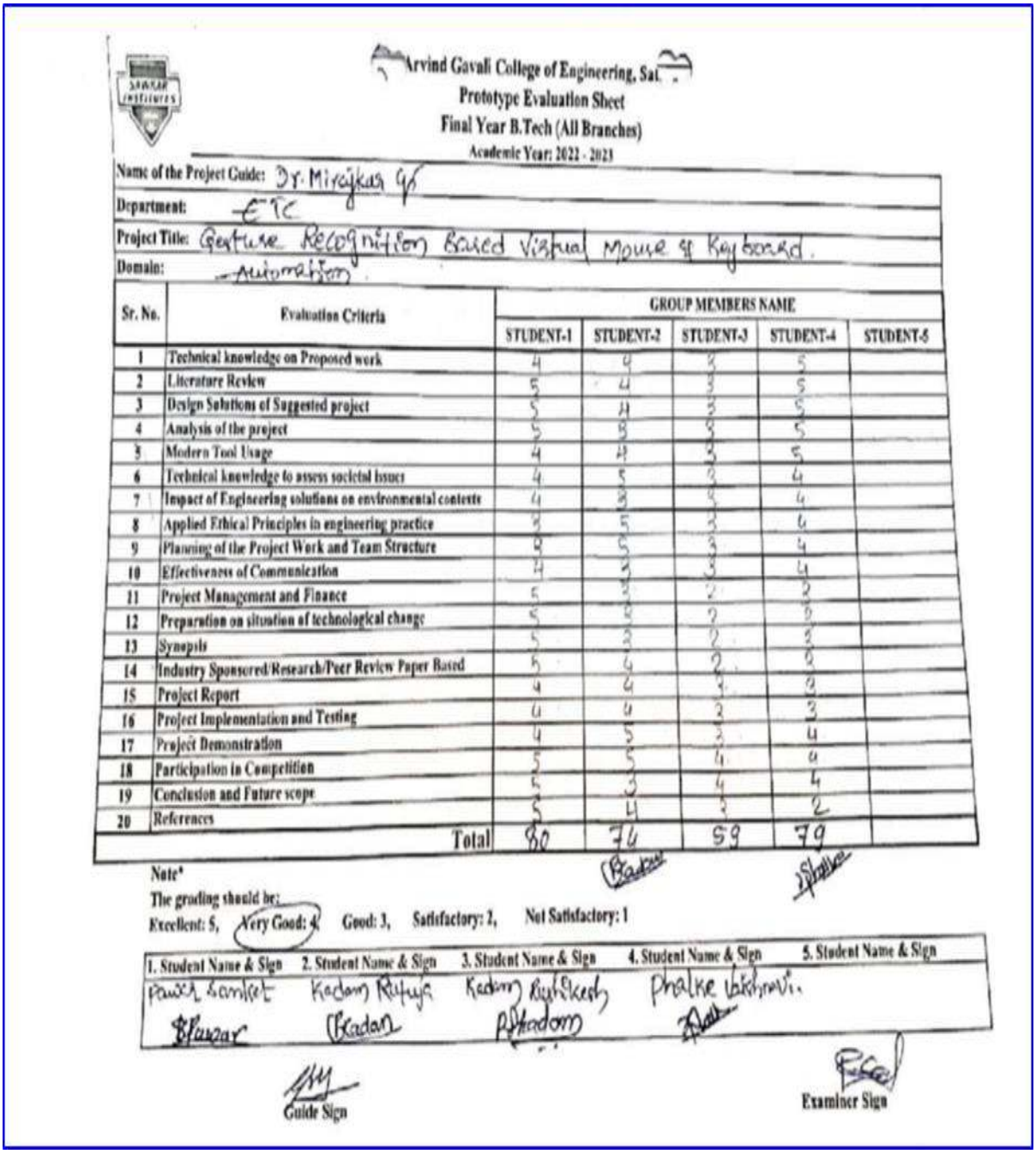
**Table B.2.2.3 g Project Evaluation Scheme**

| Sr. No | Performance Indicators/Rubrics | CO Mapping |
|---|---|---|
| 1 | Design Methodology | CO1,CO2 |
| 2 | Experimental Setup/Laboratory Tests/Validation | CO2 |
| 3 | Prototype Demonstration and Presentation | CO2 |
| 4 | Incorporation of Suggestions | CO3 |
| 5 | Project Budget and Finance | CO5 |
| 6 | Final Project Demonstration | CO4 |
| 7 | Effectiveness of Communication | CO6 |
| 8 | Impact on Environment and Sustainability | CO6 |
| 9 | Project Report | CO6 |
| 10 | Results | CO6 |
| 11 | Conclusion and Discussions | CO3 |
| 12 | Modern Tool Usage | CO2 |
| 13 | Participation in Competition | CO4 |
| 14 | Self-Motivation and Determination | CO6 |
| 15 | Working Within a Team | CO4 |
| 16 | Impact of Project on Society | CO6 |
| 17 | Regularity | CO6 |
| 18 | Applied Ethical Principles | CO6 |
| 19 | Future Scope | CO1 |
| 20 | References | CO1,CO2,CO3 |

All the above-mentioned performance indicators are evaluated on a
scale of 1-5. Excellent: 5
Very Good: 4
Good: 3
Satisfactory: 2
Not Satisfactory: 1

**Project Work Evaluation:**

a) **Internal Evaluation:** The project work and the report will be evaluated by the internal committee at Phase-1, Phase-2
b) **External Evaluation:** The project work and the report will be evaluated by internal and external examiners appointed by the University.
c) The examiners will take a presentation and demonstration followed by Viva-Voce on the project work carried out by students. The students need to defend their project work. Based on the presentation and Viva-Voce, the marks will be awarded to the students, which will be sent to the university



Arvind Gavali College of Engineering, Sat...

Prototype Evaluation Sheet

Final Year B.Tech (All Branches)

Academic Year: 2022 - 2023

Name of the Project Guide: Dr. Miraj Kar Gr

Department: E TC

Project Title: Gesture Recognition Based Virtual Mouse & Keyboard.

Domain: Automation

| Sr. No. | Evaluation Criteria | GROUP MEMBERS NAME | | | | |
|---|---|---|---|---|---|---|
| | | STUDENT-1 | STUDENT-2 | STUDENT-3 | STUDENT-4 | STUDENT-5 |
| 1 | Technical knowledge on Proposed work | 4 | 4 | 3 | 5 | |
| 2 | Literature Review | 5 | 4 | 3 | 5 | |
| 3 | Design Solutions of Suggested project | 5 | 4 | 3 | 5 | |
| 4 | Analysis of the project | 5 | 5 | 3 | 5 | |
| 5 | Modern Tool Usage | 4 | 4 | 3 | 5 | |
| 6 | Technical knowledge to assess societal issues | 4 | 5 | 3 | 4 | |
| 7 | Impact of Engineering solutions on environmental contexts | 4 | 5 | 3 | 4 | |
| 8 | Applied Ethical Principles in engineering practice | 3 | 5 | 3 | 4 | |
| 9 | Planning of the Project Work and Team Structure | 3 | 5 | 3 | 4 | |
| 10 | Effectiveness of Communication | 4 | 4 | 3 | 4 | |
| 11 | Project Management and Finance | 5 | 3 | 2 | 3 | |
| 12 | Preparation on situation of technological change | 5 | 5 | 2 | 3 | |
| 13 | Synopsis | 5 | 3 | 2 | 3 | |
| 14 | Industry Sponsored/Research/Peer Review Paper Based | 5 | 4 | 2 | 3 | |
| 15 | Project Report | 4 | 4 | 3 | 3 | |
| 16 | Project Implementation and Testing | 4 | 4 | 3 | 3 | |
| 17 | Project Demonstration | 4 | 5 | 3 | 4 | |
| 18 | Participation in Competition | 5 | 5 | 4 | 4 | |
| 19 | Conclusion and Future scope | 5 | 3 | 4 | 4 | |
| 20 | References | 5 | 4 | 3 | 2 | |
| | Total | 80 | 74 | 59 | 79 | |

Note'

The grading should be;

Excellent: 5, Very Good: 4, Good: 3, Satisfactory: 2, Not Satisfactory: 1

| 1. Student Name & Sign | 2. Student Name & Sign | 3. Student Name & Sign | 4. Student Name & Sign | 5. Student Name & Sign |
|---|---|---|---|---|
| Pawar Sanket | Kadam Rutuja | Kadam Rushikesh | Phalke Lakshmi. | |

Guide Sign

Examiner Sign

**Fig B.2.2.3.d Evaluation Record**

### 2.2.3. D. The process to assess individual and team performance (05)

Project assessment is the process of evaluating the performance of the individual and an entire team. Performance evaluation is done to get a clear idea of how well the individual and team's skills are working together, motivating them and providing a suggestion for improving individual and team performance.

The assessment evaluation can be done by using assessment methods like individual and team performance questionnaires and presented in front of the RR committee. Students need to score more than 60% for continuing content work otherwise consult with a guide. After reworking again need to present in front of the RR committee and will start to do further work. The process to assess individual and team performance is shown in Fig. 2.2.3e.

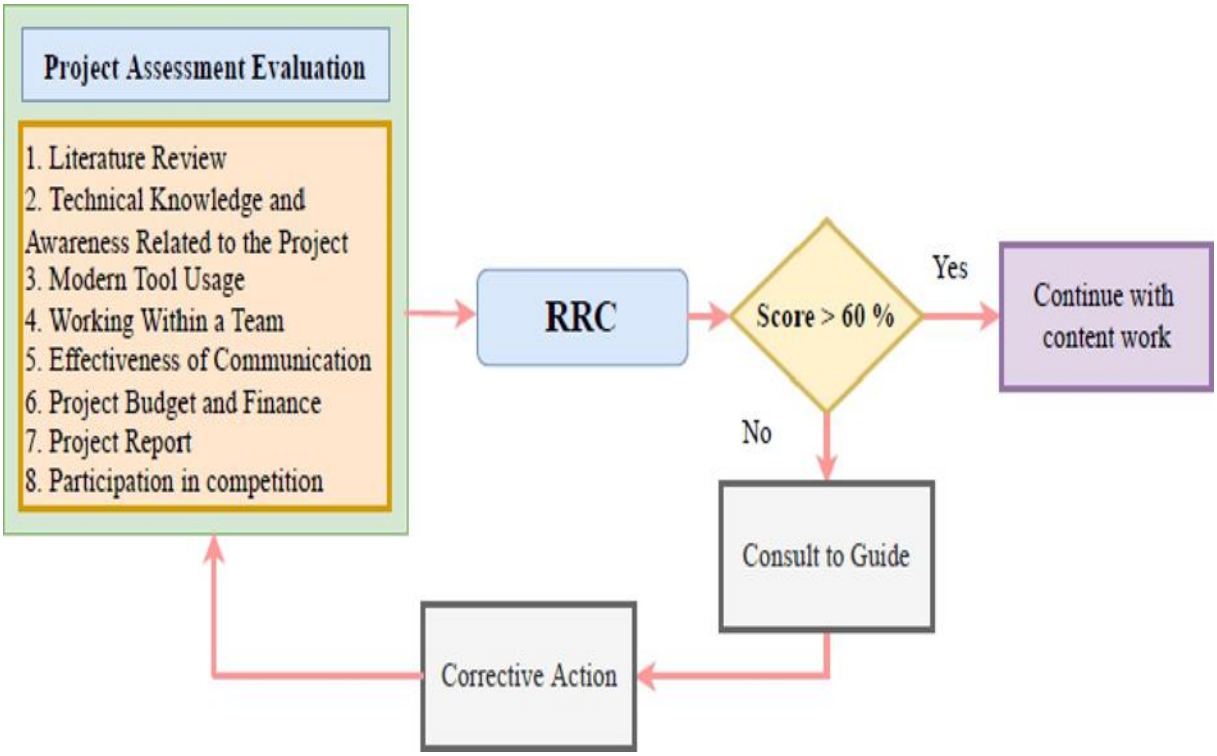



**Fig B.2.2.3.e: Student Performance Evaluation Mechanism**

| | | |
|---|---|---|
| **CRITERION 03** | **Course Outcomes and Program Outcomes** | **120** |

### 3.1. Establish the correlation between the courses and the Program Outcomes (POs) and Program Specific Outcomes (PSOs)

Program Outcomes as mentioned in Annexure-I and Program Specific Outcomes as defined by the Program.

## A. PROGRAM OUTCOMES (POs)

| The students of Electronics and Telecommunication Engineering will be able to: | |
|---|---|
| **PO1** | **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems. |
| **PO2** | **Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences. |
| **PO3** | **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations. |
| **PO4** | **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions. |
| **PO5** | **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations. |
| **PO6** | **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice. |
| **PO7** | **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development. |
| **PO8** | **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice. |
| **PO9** | **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings. |

| | |
|---|---|
| **PO10** | **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions. |
| **PO11** | **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments. |
| **PO12** | **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change. |

## B. PROGRAM SPECIFIC OUTCOMES (PSO)

| Electronics and Telecommunication Engineering graduates will be able to | |
|---|---|
| **PSO1** | Students will be able to analyse and design the electronics and telecommunication systems by understanding and applying the fundamental knowledge. |
| **PSO2** | Students will be able to contribute to projects in the core and associated domain by using modern tools like PCB design, embedded programming, etc. |

### 3.1.3 Program level Course-PO matrix of all courses INCLUDING first year courses (10)

CO-PO correlation matrix for all courses in the program is given below. Course code is mentioned in the first column and correlation with POs is indicated as 1) slight, 2) moderate and 3) High. Courses not having any correlation is indicated by '-'. This correlation is derived from CO-PO mapping of the individual course. Average of all COs is taken and mapped at level 1, 2 and 3.

| Class | Course Name | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FY SEM I | Engineering Mathematics-I (BTBS101) | 2.75 | 1.75 | 2 | 1 | | 1 | | | | | 1 | 1.5 |
| | Engineering Physics (BTBS102) | 1 | 2 | 1 | 1 | | 1 | 1 | | | | | 1 |
| | Engineering Graphics(BTES103) | 1.67 | 3 | 2.5 | 1 | 1.67 | | | | | 2.5 | | 2.5 |
| | Communication Skills(BTHM104) | 1 | | | | 1.67 | 1.67 | | 2 | | 3 | | 2.75 |
| | Energy and Environment Engineering (BTES105) | 2.33 | 1 | 2.5 | 1 | | 1.5 | 3 | 2 | | 2 | 1 | |
| | Basic Civil and Mechanical Engineering (BTES106) | 2.25 | 1 | 1.5 | 1 | | 1.5 | 1 | | | 1.67 | 1 | |
| | Engineering Physics Lab(BTBS107L) | 1 | 2 | 1 | 1 | | 1 | 1 | | 1 | | | 1 |
| | Engineering Graphics Lab(BTES108L) | 1.67 | 3 | 2.5 | 1 | 1.67 | | | | 2.5 | 2.5 | | 2.5 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Communication Skills Lab. ( BTHM109L) | 1 | | | | 1 | 1 | | 1.5 | | 2.75 | | 2 |
| FY SEM II | Engineering Mathematics- II (BTBS201) | 2.75 | 1.75 | 1 | 1.33 | | 1 | | | | | 1 | 1.25 |
| | Engineering Chemistry (BTBS202) | 2.25 | 2 | | | | 3 | 2 | | 2 | | | |
| | Engineering Mechanics (BTES203) | 2.67 | 3 | 2 | | | 1 | | | 2 | | | |
| | Computer Programming in C (BTES204) | 1.75 | 1 | 2 | | | | | | 2.5 | 2.5 | | |
| | Workshop Practices (BTES205) | 3 | | 1.67 | 2 | 2.33 | | | | 2 | 1 | 1 | 1.67 |
| | Basic Electrical and Electronics Engineering (BTES206) | 3 | | | | | 1 | 2 | | | | | |
| | Computer Programming Lab (BTES207L) | 1.75 | 1 | 2 | | | | | | 2.5 | 2.5 | | |
| | Engineering Chemistry Lab (BTBS208L) | 2.25 | 2 | | | | 3 | 2 | | 2 | | | |
| | Engineering Mechanics Lab (BTES209L) | 2.67 | 3 | 2 | | | 1 | | | 2 | | | |
| | Mini Project (BTES210P) | 2.5 | 2 | | | 2.5 | 1 | 1 | 2.25 | 2.75 | 3 | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SY SEM III | Engineering Mathematics-III (BTBSC301) | 1 | 1.5 | 2 | | 1.25 | | | | 2 | | 1 | 1.75 |
| | Analog Circuits (BTBSC302) | 2.5 | 1 | 1.5 | 1 | 1.33 | | | | | | 1 | |
| | Electronic Devices & Circuits (BTBSC303) | 2 | 1.67 | 2 | 1.33 | 2 | | | | | | 1 | |
| | Network Analysis (BTBSC304) | 2 | 1 | 2 | 2 | 2 | | | | | | 2.5 | |
| | Digital Logic Design (BTBSC305) | 2.5 | 2 | 3 | 1 | 2.33 | | | | | | 1 | |
| | Basic Human Rights (BTHM3401) | | | 3 | | 2 | | | 1 | 2 | 2 | | |
| | Analog Circuits Lab (BTEXL307) | 2.5 | 2 | 2.25 | 2.25 | 1.75 | | | | | | 1.5 | |
| | Electronic Devices & Circuits Lab (BTEXL308) | 2 | 1.67 | 2 | 1 | 1.5 | | | | | | 1 | |
| | Network Analysis Lab (BTEXL309) | 2 | 2 | 2 | 2 | 1.5 | | | | | | | 1 |
| | Digital Logic Design Lab (BTEXL310) | 2 | 2.33 | 3 | 2.33 | 2 | | | | | | | 1 |
| | Electronics Workshop (BTEXW311) | 2 | 2 | 2 | 2 | 1.5 | | | | | | | 1 |
| | Field Training/ Internship/Industrial Training Evaluation (BTES211P) | 2.67 | 3 | 3 | 2 | 2.5 | 3 | 2 | 3 | 2.67 | 2.5 | 3 | 3 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SY SEM IV | Electrical Machines and Instruments (BTEXC401) | 2.33 | 2 | 2 | | 3 | | | | | | | |
| | Analog Communication Engineering (BTEXC402) | 2.3 | 1.3 | 2.0 | 2.5 | | | | | | | | 1.0 |
| | Microprocessor (BTEXC403) | 2 | 1 | 1.75 | 1.5 | 1 | | | | | | | |
| | Signals and Systems (BTEXC404) | 3 | 1 | 1 | 1 | | | | | | | | 1.25 |
| | Product Design Engineering (BTID405) | 2 | 2 | 2 | 1 | | 2 | | | 2 | 2 | | |
| | Numerical Methods and Computer Programming (BTBSC406) | 1.33 | | 2 | 2 | | | | | | | | |
| | Electrical Machines and Instruments Lab (BTEXL407) | 1.33 | 2 | 2 | | 3 | | | | | | | |
| | Analog Communication Engineering Lab (BTEXL408) | 3 | 2 | 2 | 2 | 2.5 | | | | | | 2 | |
| | Microprocessor Lab (BTEXL409) | 1.5 | | 2.5 | 2 | | | | | | | | |
| | Signals and Systems Lab (BTEXL410) | 1.67 | 2 | 1.67 | 2.5 | 1.5 | | | | | | 2 | |
| | Soft-Skill Development (BTHML411) | 1.00 | | 2.00 | | 2.00 | | | 1.75 | | 2.25 | 2.00 | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Field Training/ Internship/Industrial Training (BTEXF412) | 2.33 | 2.5 | 3 | 2.5 | 2 | 2.5 | 1.5 | 3 | 2.67 | 2.5 | 2 | 2.33 |
| TY SEM V | Electromagnetic Field Theory (BTEXC501) | 3 | 2 | 2.5 | 2.5 | | | | | | | | 3 |
| | Control System Engineering (BTEXC502) | 3 | 2 | 2.5 | 1.75 | | | | | | | | 3 |
| | Computer Architecture (BTETC503) | 1.33 | 2.75 | 2 | 1 | 2.67 | 3 | | | | | 2 | |
| | Digital Signal Processing (BTEXC504) | 3 | 2 | 2 | 2 | 3 | | | | | | 2 | |
| | Microcontroller and its Applications (BTEXC505) | 1.75 | 2 | 1.5 | 2.25 | 2 | | | | | | 1 | |
| | Probability Theory and Random Processes (BTEXPE506A)) | 3 | 2 | 2 | 1.25 | | | | | | | | 2 |
| | Control System Engineering Lab (BTETL507) | 2.75 | 2 | 1 | 1 | | | 1 | | | | 1.33 | 2 |
| | Digital Signal Processing Lab (BTETL508) | 3 | 2.5 | 2 | 2.25 | 2 | 1 | | | 3 | 3 | 1 | 2 |
| | Microcontroller and its Applications Lab (BTETL509) | 3 | 2 | 2 | 2 | 2.5 | | | | | | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mini Project (BTETP510) | 1.75 | 1.33 | 2 | 1.25 | 1.67 | | 1 | 2 | 1 | 2 | | |
| | Seminar (BTETS511) | 2.33 | | 2.5 | | 1 | | | | | 1 | 3 | 2 |
| | Field Training/ Internship/Industrial Training Evaluation (BTEXF412) | 2.33 | 2.5 | 3 | 2.5 | 2 | 2.5 | 1.5 | 3 | 2.67 | 2.5 | 2 | 2.33 |
| TY SEM VI | Antennas and Wave Propagation (BTETC601) | 2 | | 2.33 | 2 | 2 | | | | | | 1.67 | |
| | Computer Network & Cloud Computing (BTETC602) | 1.33 | 3 | 2 | 1 | 3 | 3 | | | | | 2 | |
| | Digital Image Processing (BTETC603) | 3 | 2 | 2.5 | 2.25 | | | | | | | | 3 |
| | Android Programming (BTETPE604F) | 2.25 | 2 | 1.5 | 2 | 1.33 | | | | | | | 1 |
| | Python Programming (BTETOE605E) | 2 | 3 | 2.5 | | 2.75 | | | | | | 2 | 2 |
| | Employability & Skill Development (BTHM606) | 2 | 2 | | | | 2 | 2 | 2 | | 2 | | |
| | Computer Network & Cloud Computing Lab (BTETL607) | 1.5 | 1.75 | 1.67 | 1 | 1.33 | | | | | | 1 | |
| | Android Programming Lab (BTETPE604F) | 2.75 | 2.5 | 2 | 2 | | 1.25 | 1.25 | | 1.75 | 1.25 | | 1.25 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Python Programming Lab (BTETL609) | 2 | 3 | 2.5 | 3 | 2.75 | | | | | | 0 | 2 |
| | Mini-project (BTETP610) | 1.75 | 1.33 | 2 | 1.25 | 1.67 | | 1 | 2 | 1 | 2 | | |
| | Field Training/ Internship/ Industrial Training (BTETF611) | 2.33 | 2.5 | 3 | 2.5 | 2 | 2.5 | 1.5 | 3 | 2.67 | 2.5 | 2 | 2.33 |
| BTECH SEM VII | Digital Communication (BTETC701) | 2.25 | 1 | 1 | 2.33 | 2.33 | | | | | | 2 | |
| | Wireless Sensor Network (BTETC702) | 2 | | 2 | 2 | 2.5 | | | | 3 | | 2.5 | |
| | Embedded System Design (BTETPE703) | 2 | 2 | 1.5 | 2 | 3 | | | | 1 | | | 2 |
| | Mechatronics (BTETPE704) | 2.0 | | 2.0 | 2.0 | 2.5 | | | | 3.0 | | 2.5 | |
| | Financial Management (BTHM705) | 2.5 | 2.25 | 2.5 | | 2 | 2.5 | 2 | 2.5 | | 1.5 | 2 | 1.5 |
| | Satellite Communication Lab (BTETL706) | 2.75 | | 2 | 2 | 2 | 3 | | 2 | | | | |
| | Embedded System Design Lab (BTETL707) | 2.33 | 2 | 2 | 1.5 | 1 | | | | | | 1 | |
| | Mechatronics Lab (BTETL708) | 2.75 | | 2 | 2 | 2 | 3 | | 2 | | | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Project Part I (BTETP709) | 2.75 | 2 | 3 | 3 | 2.25 | 1.33 | 1.67 | 1 | 2 | 1.75 | 2 | 1.5 |
| | Field Training/ Internship/Industrial Training Evaluation (BTETF611) | 2 | 2 | 1.67 | 2 | 3 | | 2 | | 2 | 2 | 2 | 1.25 |
| BTECH SEM VIII | Introduction to Internet of Things (BTETPE801A) | 1 | 2 | 2 | 1 | 2 | | | | | | 1 | |
| | Industrial Automation and Control (BTETPE802A) | 3 | 3 | 3 | 2.5 | 2.5 | | | | | | | 2 |
| | **ACTUAL AVERAGE PO** | **2.2** | **2** | **2.1** | **1.7** | **2** | **1.9** | **1.6** | **2.1** | **2.1** | **2.2** | **1.6** | **1.8** |

## Program level Course- PSO matrix:

CO-PSO correlation matrix for all courses in the program is given below. Course code is mentioned in the first column and correlation with PSOs is indicated as 1) slight, 2) moderate and 3) High. Courses not having any correlation are indicated by-. This correlation is derived from CO-PSO mapping of the individual course. Average of all Cos is taken and mapped at level 1, 2 and 3.

| **Academic Year: 2022-23** | | **Programme Specific Outcome (PSO)** | |
|---|---|---|---|
| **Class** | **Class** | PSO1 | PSO2 |
| **FY SEM 1** | Engineering Mathematics-I(BTBS101) | 1.0 | 1.0 |
| | Engineering Physics(BTBS102) | 2.0 | 2.0 |
| | Engineering Graphics(BTES103) | 1.0 | |

| | | | |
|---|---|---|---|
| | Communication Skills(BTHM104) | | 1.0 |
| | Energy and Environment Engineering(BTES105) | | |
| | Basic Civil and Mechanical Engineering(BTES106) | | |
| | Engineering Physics Lab(BTBS107L) | 2.0 | 1.5 |
| | Engineering Graphics Lab(BTES108L) | 1.0 | |
| | Communication Skills Lab.( BTHM109L) | | |
| **FY SEM II** | Engineering Mathematics- II(BTBS201) | 1.0 | 1.0 |
| | Engineering Chemistry(BTBS202) | | |
| | Engineering Mechanics(BTES203) | | |
| | Computer Programming in C(BTES204) | 1.0 | |
| | Workshop Practices(BTES205) | | |
| | Basic Electrical and Electronics Engineering(BTES206) | 1.0 | 1.0 |
| | Computer Programminging Lab(BTES207L) | 1.0 | |
| | Engineering Chemistry Lab(BTBS208L) | | |
| | Engineering Mechanics Lab(BTES209L) | | |
| | Mini Project(BTES210P) | 1.0 | 1.0 |
| **SY-SEMIII** | Engineering Mathematics-III (BTBSC301) | 2.0 | 1.0 |
| | Analog Circuits (BTBSC302) | 1.5 | 1.5 |
| | Electronic Devices & Circuits (BTBSC303) | 1.0 | 1.0 |
| | Network Analysis (BTBSC304) | 2.0 | 3.0 |
| | Digital Logic Design (BTBSC305) | 2.3 | 3.0 |
| | Basic Human Rights (BTHM3401) | 2.0 | 1.0 |

| | | | |
|---|---|---|---|
| | Analog Circuits Lab (BTEXL307) | 2.0 | 2.0 |
| | Electronic Devices & Circuits Lab (BTEXL308) | 1.0 | 1.0 |
| | Network Analysis Lab (BTEXL309) | 1.0 | 1.0 |
| | Digital Logic Design Lab (BTEXL310) | 3.0 | 2.3 |
| **SY- SEM IV** | Electronics Workshop (BTEXW311) | 2.0 | 2.0 |
| | Field Training/ Internship/Industrial Training Evaluation (BTES211P) | 2.7 | 2.0 |
| | Electrical Machines and Instruments (BTEXC401) | 2.0 | 2.0 |
| | Analog Communication Engineering (BTEXC402) | 2.3 | 2.0 |
| | Microprocessor (BTEXC403) | 3.0 | 1.0 |
| | Signals and Systems (BTEXC404) | 3.0 | 2.0 |
| | Product Design Engineering (BTID405) | 1.0 | 1.0 |
| | Numerical Methods and Computer Programming (BTBSC406) | 3.0 | 1.0 |
| | Electrical Machines and Instruments Lab (BTEXL407) | | |
| | Analog Communication Engineering Lab (BTEXL408) | 2.0 | 2.0 |
| **TY- SEM V** | Microprocessor Lab (BTEXL409) | 1.5 | 1.8 |
| | Signals and Systems Lab (BTEXL410) | 2.0 | 1.3 |
| | Soft-Skill Development (BTHML411) | 1.0 | |
| | Field Training/ Internship/Industrial Training(BTEXF412) | 1.5 | 2.5 |
| | Electromagnetic Field Theory (BTEXC501) | 2.3 | 2.0 |

| | | | |
|---|---|---|---|
| | Control System Engineering (BTEXC502) | 2.0 | 1.5 |
| | Computer Architecture (BTETC503) | 1.7 | 1.5 |
| | Digital Signal Processing (BTEXC504) | 2.0 | |
| | Microcontroller and its Applications (BTEXC505) | 2.0 | |
| | Probability Theory and Random Processes (BTEXPE506A) | 2.0 | 1.8 |
| | Control System Engineering Lab (BTETL507) | 2.0 | 2.0 |
| | Digital Signal Processing Lab (BTETL508) | 1.8 | 1.5 |
| **TY- SEM VI** | Microcontroller and its Applications Lab (BTETL509) | 3.0 | 2.0 |
| | Mini Project (BTETP510) | 2.0 | 1.5 |
| | Seminar(BTETS511) | 1.5 | 2.7 |
| | Field Training/ Internship/Industrial Training Evaluation(BTEXF412) | 1.5 | 2.5 |
| | Antennas and Wave Propagation (BTETC601) | 1.7 | 2.0 |
| | Computer Network & Cloud Computing (BTETC602) | 2.0 | 1.5 |
| | Digital Image Processing(BTETC603) | 3.0 | 3.0 |
| | Android Programming(BTETPE604F) | 2.0 | 1.5 |
| | Python Programming (BTETOE605E) | 1.0 | 3.0 |
| | Employability & Skill Development (BTHM606) | 2.0 | 2.0 |
| | Computer Network & Cloud Computing Lab (BTETL607) | 1.3 | 1.0 |
| | Android Programming Lab (BTETPE604F) | 3.0 | 1.0 |

| | | | |
|---|---|---|---|
| **B Tech- SEM VII** | Python Programming Lab (BTETL609) | 2.0 | 2.0 |
| | Mini-project (BTETP610) | 2.0 | 1.5 |
| | Field Training/ Internship/ Industrial Training(BTETF611) | 1.5 | 2.5 |
| | Digital Communication(BTETC701) | 2.0 | 1.5 |
| | Wireless Sensor Network | 3.0 | 2.0 |
| | Embedded System Design (BTETPE703) | 1.8 | 2.0 |
| | Mechatronics (BTETPE704) | 3.0 | 2.0 |
| | Financial Management(BTHM705) | 2.5 | 1.3 |
| | Satellite Communication Lab (BTETL706) | 2.7 | 1.3 |
| | Embedded System Design Lab(BTETL707) | 3.0 | |
| | Mechatronics Lab(BTETL708) | 2.7 | 1.3 |
| **B Tech- SEM VIII** | Project Part I (BTETP709) | 2.8 | 1.5 |
| | Field Training/ Internship/Industrial Training Evaluation (BTETF611) | 2.3 | 1.0 |
| | Introduction to Internet of Things (BTETPE801A) | 1.0 | 2.8 |

## 3.2 Attainment of Course Outcomes (50)

### 3.2.1 Describe the assessment processes used to gather the data upon which the evaluation of Course Outcome is based. (10)

*(Examples of data collection processes may include, but are not limited to tutorial questions, assignments, laboratory tests, project evaluation, student portfolios(A portfolio is a collection of artifacts that demonstrate skills, personal characteristics andaccomplishmentscreatedbythestudentduringstudyperiod),internallydevelopedassessmentexams, project presentations, oral exams etc.)*

The key aspects in Outcome Based Education (OBE) are the assessment of course outcomes. At the initial stage of OBE implementation, the Course Outcomes (COs) for each course are defined based on the Program Outcome (POs) and other requirements. At the end of each course, the COs needs to be assessed and evaluated, to check whether it has been attained or not. Assessment is one more processes, carried out by the department, that identify, collect, and prepare data to evaluate the achievement of program educational objectives and program outcomes. Attainment is the action or fact of achieving a standard result towards accomplishment of desired goals. Primarily attainment is the standard of academic attainment as observed by test or examination result. Attainment of the COs can be measured by using direct and indirect tools. Direct attainment basically displays the student's knowledge and skills from their academic performance. It can be determined from the performance of the students in all the relevant assessment tools – like internal assessments, assignments, quiz and final university examination etc. These methods provide a sampling of what students know and /or actions they can perform, offering substantial.

This program consists of various types of courses for fulfillment of POs and PSOs. The process of data collection for attainment of COs is properly identified depending on the type of course. Major types of courses are

1. Practical/Oral/TW
2. Tutorial
3. Seminar
4. Project
5. Audit course

The Institution strives hard to ensure that the Learning across all the courses of the curriculum is Outcome oriented. There is continuous assessment of learning outcomes attainment and this procedure has been refined over a period of time.

The following are the two broadly classified tools used for assessment of Learning Outcome Attainment

• Direct Assessment Method:

Data collection mechanism includes direct assessment process which is

**Theory**

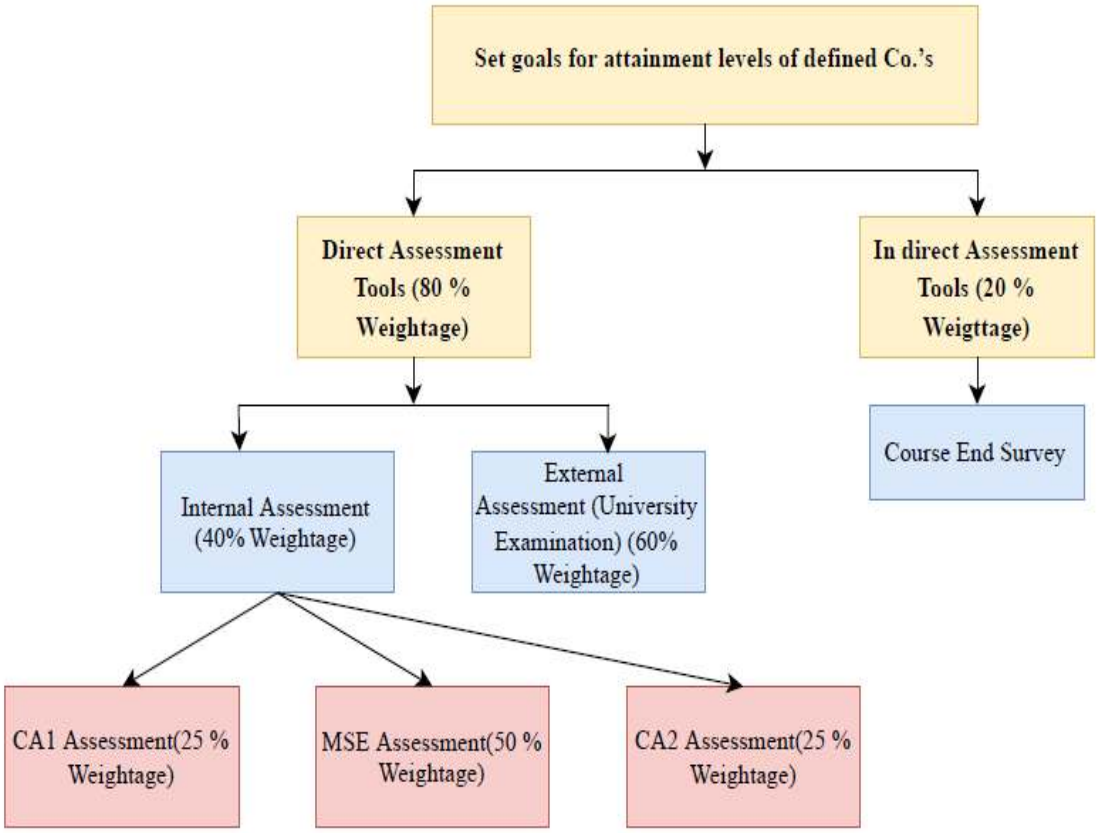



**Fig1.Process of defining CO attainment Theory examination**

| Sr. No. | Assessment tools | Tool type | Attainment Level |
|---|---|---|---|
| 1 | ContinuousAssessmentTest1[CA1] | Direct Assessment | 3 - 67%-100%<br>2 - 55%-66%<br>1 - 40%-54% |
| 2 | Mid Semester Examination [MSE] | | 3 - 67%-100%<br>2 - 55%-66%<br>1 - 40%-54% |
| 3 | Continuous Assessment Test 2[CA2] | | 3 - 67%-100%<br>2 - 55%-66%<br>1 - 40%-54% |
| 4 | End Semester Examination [ESE] | | 3 - 67%-100%<br>2 - 55%-66%<br>1 - 40%-54% |

**Laboratory**

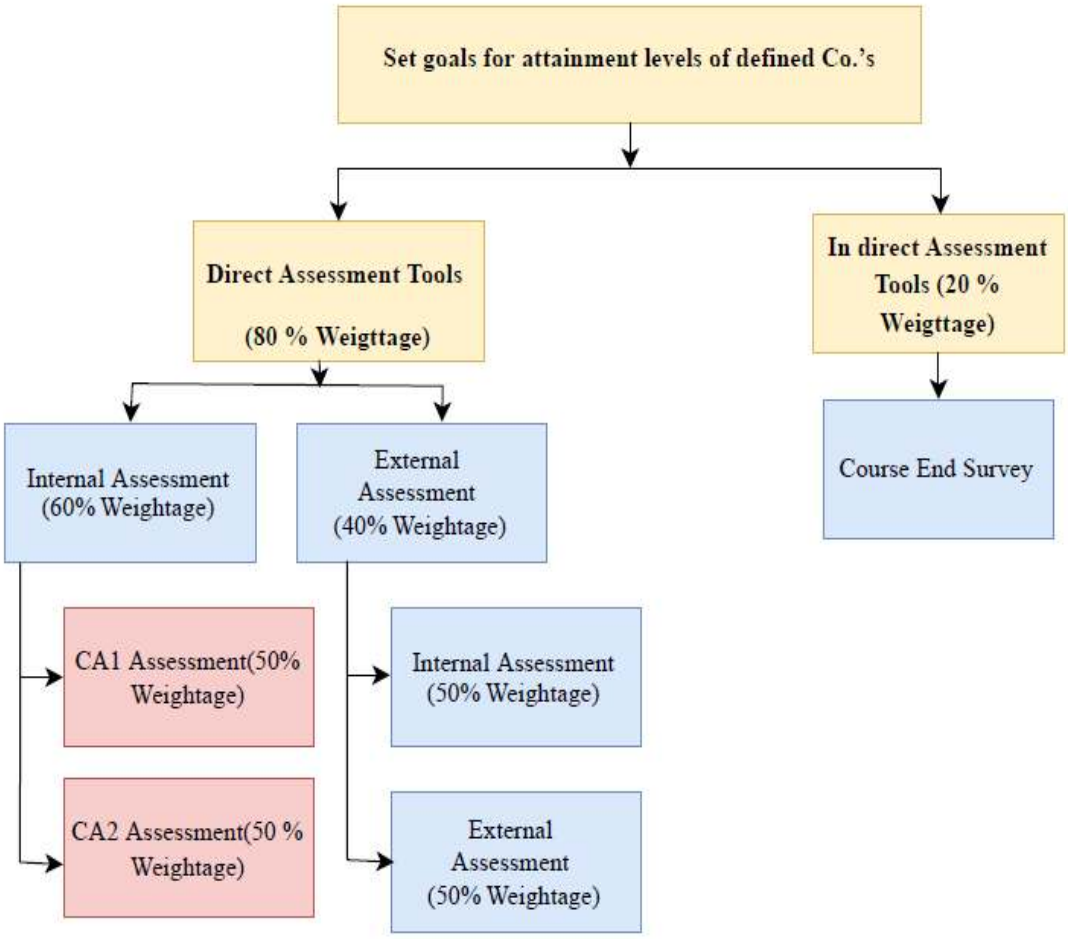



**Fig 2. Process of defining CO attainment practical examination**

| Sr. No. | Assessment tools | Tool type | Attainment Level |
|---|---|---|---|
| 1 | ContinuousAssessmentTest1 [CA1] | Direct Assessment | 3 - 81% -100%<br>2 - 61%-80%<br>1 - 40%-60% |
| 2 | Continuous Assessment Test 2 [CA2] | | 3 - 81%-100%<br>2 - 61%-80%<br>1 - 40%-60% |
| 3 | End Semester Examination [ESE] | | 3 - 81%-100%<br>2 - 61%-80%<br>1 - 40%-60% |

**Theory**

1. Continuous Assessment Test 1
2. Mid Semester Examination
3. Continuous Assessment Test 2
4. End Semester Examination

**Laboratory**

1. Continuous Assessment Test 1
2. Continuous Assessment Test 2
3. End Semester Examination

Data collection process for all above type of courses is clearly defined in table 3.2.1a given below.

**Table 3.2.1a: Assessment Tools**

**Theory**

| Sr. No. | Assessment tools | Tool type | Time Span |
|---|---|---|---|
| 1 | Continuous Assessment Test1[CA1] | Direct Assessment | One test/semester |
| 2 | Mid Semester Examination [MSE] | | One test/semester |
| 3 | Continuous Assessment Test 2 [CA2] | | One/Semester |
| 4 | End Semester Examination [ESE] | | One/Semester |

**Laboratory**

| Sr. No. | Assessment tools | Tool type | Time Span |
|---|---|---|---|
| 1 | Continuous Assessment Test1[CA1] | Direct Assessment | One test/semester |
| 2 | Continuous Assessment Test 2[CA2] | | One test/semester |
| 3 | End Semester Examination [ESE] | | One/Semester |

Course Outcomes for the entire course are defined and they are 4 in number. As the program is affiliated to DBATU, external assessment is done as per the evaluation scheme of university and internal assessment is done as per the policy of the program.

All courses are categorized into 2 categories

1. Courses with theory examination: CO attainment is calculated considering 60 % of university examination and 40% of internal semester evaluation (CA1, MSE CA2)
2. Courses with practical examination: CO attainment is calculated considering 60% internal evaluation and 40% university examination evaluation

Attainment levels are assigned based on performance in Internal Semester Evaluation and University examinations.

**3.2.2 Record of the attainment of Course Outcomes of all courses with respect to set attainment levels (40)**

**Course Name:** Digital Logic Design

**Year:** 2020-21

**Course Name:** BTEXC305 **Sem-**III

| **Course Outcomes** | Assessment Tools | Internal Assessment Attainment | University Result Attainment | Final Direct Course Attainment | Target | Remark |
|---|---|---|---|---|---|---|
| **C305.1** | [CA1]/ [CA2]/ [ESE] | 1.1 | 3 | 2.90 | 1.8 | Attained |
| **C305.2** | | 1.2 | 3 | 3.00 | 1.8 | Attained |
| **C305.3** | | 1.2 | 3 | 3.00 | 1.8 | Attained |
| **C305.4** | | 1.2 | 3 | 3.00 | 1.8 | Attained |

**Course Outcome Attainment: 2.98**

**Course Name:** Analog Communication Engineering

**Year: 2020-21**

**Course Code:** BTEXC402 **Sem-**IV

| Course Outcomes | Assessment Tools | Internal Assessment Attainment | University Result Attainment | Course Attainment | Target | Remark |
|---|---|---|---|---|---|---|
| **C402.1** | | 1.1 | 3 | 2.90 | 1.8 | Attained |
| **C402.2** | | 1.15 | 3 | 2.95 | 1.8 | Attained |

| | | | | | | |
|---|---|---|---|---|---|---|
| **C402.3** | [CA1]/ [CA2]/ [ESE] | 1.2 | 3 | 3.00 | 1.8 | Attained |
| **C402.4** | | 1.2 | 3 | 2.90 | 1.8 | Attained |

**Course Outcome Attainment: 2.96**

**Course Name:** Control System Engineering

**Year**: 2021-22

**Course Code:** BTEXC502 **Sem-**V

| **Course Outcomes** | Assessment Tools | Internal Assessment Attainment | University Result Attainment | Course Attainment | Target | Remark |
|---|---|---|---|---|---|---|
| **BTEXC502.1** | [CA1]/ [CA2]/ [ESE] | 1.2 | 2 | 2.40 | 1.9 | Attained |
| **C504.2** | | 1.2 | 2 | 2.40 | 1.9 | Attained |
| **C504.3** | | 1.2 | 2 | 2.40 | 1.9 | Attained |
| **C504.4** | | 1 | 2 | 2.20 | 1.9 | Attained |

**Course Outcome Attainment: 2.35**

**Course Name:** Antenna and wave propagation

**Year :** 2021-22

**Course Code:**BTETC601 **Sem-**VI

| Course Outcomes | Assessment Tools | Internal Assessment Attainment | University Result Attainment | Course Attainment | Target | Remark |
|---|---|---|---|---|---|---|
| **C603.1** | | 1.2 | 3 | 3.00 | 1.9 | Attained |
| **C603.2** | | 1.15 | 3 | 2.95 | 1.9 | Attained |

| | | | | | | |
|---|---|---|---|---|---|---|
| **C603.3** | [CA1]/ [CA2]/ [ESE] | 1.2 | 3 | 2.95 | 1.9 | Attained |
| **C603.4** | | 1.2 | 3 | 3.00 | 1.9 | Attained |

**Course Outcome Attainment: 2.98**

**Course Name:** Digital Communication

**Year: 2022-23**

**Course Code:** BTETC701 **Sem-VII**

| Course Outcomes | Assessment Tools | Internal Assessment Attainment | University Result Attainment | Course Attainment | Target | Remark |
|---|---|---|---|---|---|---|
| **C704B.1** | [CA1]/ [CA2]/ [ESE] | 1.2 | 2 | 2.40 | 2.1 | Attained |
| **C704B.2** | | 1.15 | 2 | 2.35 | 2.1 | Attained |
| **C704B.3** | | 1.1 | 2 | 2.30 | 2.1 | Attained |
| **C704B.4** | | 1 | 2 | 2.20 | 2.1 | Attained |

**Course Outcome Attainment: 2.31**

**Course Name:** Internet Of Things

**Year : 2022-23**

**Course Code:** BTETPE801A **Sem-**VIII

| Course Outcomes | Assessment Tools | Internal Assessment Attainment | University Result Attainment | Course Attainment | Target | Remark |
|---|---|---|---|---|---|---|
| E801A**.1** | | 1.2 | 3 | 3.00 | 2.1 | Attained |
| E801A **.2** | | 1.15 | 3 | 2.95 | 2.1 | Attained |

| | | | | | | |
|---|---|---|---|---|---|---|
| E801A.**3** | [CA1]/ [CA2]/ [ESE] | 1.2 | 3 | 2.95 | 2.1 | Attained |
| E801A.**4** | | 1.2 | 3 | 3.00 | 2.1 | Attained |

**Course Outcome**

**Attainment: 2.98**

| **Course No** | **Course Name** | **CO1** | **CO2** | **CO3** | **CO4** | **Average CO Attained** |
|---|---|---|---|---|---|---|
| BTBSC301 | Engineering Mathematics-III | 2.99 | 2.84 | 2.80 | 2.85 | 2.87 |
| | | Attained | Attained | Attained | Attained | Attained |
| BTEXC302 | Analog Circuits | 2.96 | 2.87 | 2.87 | 2.74 | 2.86 |
| | | Attained | Attained | Attained | Attained | Attained |
| BTEXC303 | Electronic Devices & Circuits | 2.88 | 2.89 | 2.81 | 2.81 | 2.85 |
| | | Attained | Attained | Attained | Attained | Attained |
| BTEXC304 | Network Analysis | 2.70 | 2.69 | 2.91 | 2.75 | 2.76 |
| | | Attained | Attained | Attained | Attained | Attained |
| BTEXC305 | Digital Logic Design | 2.68 | 2.75 | 2.93 | 2.83 | 2.8 |
| | | Attained | Attained | Attained | Attained | Attained |
| BTHM3401 | Basic Human | 2.95 | 2.85 | 2.85 | 2.12 | 2.90 |
| | | Attained | Attained | Attained | Attained | Attained |
| BTEXL307 | Analog Circuits Lab | 2.98 | 2.39 | 2.85 | 2.41 | 2.66 |
| | | Attained | Attained | Attained | Attained | Attained |
| BTEXL308 | Electronic Devices & Circuits Lab | 2.89 | 2.37 | 2.89 | 2.41 | 2.64 |
| | | Attained | Attained | Attained | Attained | Attained |

| | | | | | | |
|---|---|---|---|---|---|---|
| BTEXL309 | Network Analysis Lab | 2.90 | 2.41 | 2.86 | 2.35 | 2.63 |
| | | Attained | Attained | Attained | Attained | Attained |
| BTEXL310 | Digital Logic Design Lab | 2.91 | 2.39 | 2.85 | 2.34 | 2.62 |
| | | Attained | Attained | Attained | Attained | Attained |
| BTEXW311 | Electronics Workshop | 2.90 | 2.43 | 2.90 | 2.45 | 2.67 |
| | | Attained | Attained | Attained | Attained | Attained |
| BTES211P | Field Training /Internship /Industrial Training Evaluation | 2.11 | 2.55 | 2.07 | 2.50 | 2.33 |
| | | Attained | Attained | Attained | Attained | Attained |
| BTEXC401 | Electrical Machines and Instruments | 3.00 | 2.80 | 2.88 | 2.65 | 2.83 |
| | | Attained | Attained | Attained | Attained | Attained |
| BTEXC402 | Analog Communication Engineering | 2.84 | 2.82 | 2.82 | 2.66 | 2.79 |
| | | Attained | Attained | Attained | Attained | Attained |
| BTEXC403 | Microprocessor | 2.84 | 2.85 | 2.9 | 2.73 | 2.83 |
| | | Attained | Attained | Attained | Attained | Attained |
| BTEXC404 | Signals and Systems | 2.88 | 2.79 | 2.85 | 2.65 | 2.79 |
| | | Attained | Attained | Attained | Attained | Attained |
| BTID405 | Product Design Engineering | 2.94 | 2.83 | 2.38 | 2.83 | 2.74 |
| | | Attained | Attained | Attained | Attained | Attained |
| BTBSC406 | Numerical Methods and Computer Programming | 2.91 | 2.81 | 2.84 | 2.69 | 2.81 |
| | | Attained | Attained | Attained | Attained | Attained |
| BTEXL407 | Electrical Machines and Instruments Lab | 2.87 | 2.89 | 2.89 | 2.90 | 2.89 |
| | | Attained | Attained | Attained | Attained | Attained |

| | | | | | | |
|---|---|---|---|---|---|---|
| BTEXL408 | Analog Communication Engineering Lab | 2.98 | 2.91 | 2.83 | 2.81 | 2.88 |
| | | Attained | Attained | Attained | Attained | Attained |
| BTEXL409 | Microprocessor Lab | 2.9 | 2.44 | 2.94 | 2.46 | 2.68 |
| | | Attained | Attained | Attained | Attained | Attained |
| BTEXL410 | Signals and Systems Lab | 2.9 | 2.44 | 2.94 | 2.46 | 2.68 |
| | | Attained | Attained | Attained | Attained | Attained |
| BTHML411 | Soft-Skill Development | 1.07 | 1.08 | 1.08 | 1.12 | 1.09 |
| | | Attained | Attained | Attained | Attained | Attained |
| BTEXF412 | Field Training /Internship /Industrial Training Evaluation | 2.11 | 2.55 | 2.07 | 2.50 | 2.33 |
| | | Attained | Attained | Attained | Attained | Attained |
| BTEXC501 | Electromagnetic Field Theory | 2.85 | 2.85 | 2.89 | 2.87 | 2.86 |
| | | Attained | Attained | Attained | Attained | Attained |
| BTEXC502 | Control System Engineering | 2.77 | 2.84 | 2.86 | 2.63 | 2.78 |
| | | Attained | Attained | Attained | Attained | Attained |
| BTETC503 | Computer Architecture | 2.39 | 2.31 | 2.29 | 2.2 | 2.3 |
| | | Attained | Attained | Attained | Attained | Attained |
| BTEXC504 | Digital Signal Processing | 2.72 | 2.73 | 2.78 | 2.72 | 2.74 |
| | | Attained | Attained | Attained | Attained | Attained |
| | Microcontroller and its Applications | 2.89 | 2.84 | 2.89 | 2.86 | 2.87 |
| BTEXC505 | | Attained | Attained | Attained | Attained | Attained |
| BTEXPE506C | Data Structure &Algorithms Using Java Programming | 2.83 | 2.83 | 2.86 | 2.74 | 2.82 |
| | | Attained | Attained | Attained | Attained | Attained |

| | | | | | | |
|---|---|---|---|---|---|---|
| BTETL507 | Control System Engineering Lab | 2.95 | 2.4 | 2.91 | 2.4 | 2.66 |
| | | Attained | Attained | Attained | Attained | Attained |
| BTETL508 | Digital Signal Processing Lab | 2.94 | 2.46 | 2.93 | 2.47 | 2.7 |
| | | Attained | Attained | Attained | Attained | Attained |
| BTETL509 | Microcontroller and its Applications Lab | 2.94 | 2.46 | 2.95 | 2.48 | 2.71 |
| | | Attained | Attained | Attained | Attained | Attained |
| BTETP510 | Mini Project | 2.25 | 2.86 | 2.23 | 2.89 | 2.56 |
| | | Attained | Attained | Attained | Attained | Attained |
| BTETS511 | Seminar | 2.34 | 2.65 | 2.65 | 2.97 | 2.66 |
| | | Attained | Attained | Attained | Attained | Attained |
| BTEXF412 | Field Training /Internship /Industrial Training Evaluation | 2.86 | 2.88 | 2.87 | 3 | 2.9 |
| | | Attained | Attained | Attained | Attained | Attained |
| BTETC601 | Antennas and Wave Propagation | 2.85 | 2.85 | 2.85 | 2.85 | 2.85 |
| | | Attained | Attained | Attained | Attained | Attained |
| BTETC602 | Computer Network & Cloud Computing | 2.38 | 2.31 | 2.29 | 2.22 | 2.3 |
| | | Attained | Attained | Attained | Attained | Attained |
| BTETC603 | Digital Image Processing | 2.71 | 2.73 | 2.61 | 2.71 | 2.69 |
| | | Attained | Attained | Attained | Attained | Attained |
| BTETPE604C | Power Electronics | 2.78 | 2.8 | 2.91 | 2.77 | 2.82 |
| | | Attained | Attained | Attained | Attained | Attained |
| BTETOE605E | Python Programming | 2.39 | 2.31 | 2.29 | 2.21 | 2.3 |
| | | Attained | Attained | Attained | Attained | Attained |

| | | | | | | |
|---|---|---|---|---|---|---|
| BTHM606 | Employability & Skill Development | 2.81 | 2.85 | 2.89 | 2.89 | 2.86 |
| | | Attained | Attained | Attained | Attained | Attained |
| BTETL607 | Computer Network & Cloud Computing Lab | 2.39 | 2.32 | 2.29 | 2.22 | 2.3 |
| | | Attained | Attained | Attained | Attained | Attained |
| BTETOE605E | Python Programming | 2.39 | 2.31 | 2.29 | 2.21 | 2.3 |
| | | Attained | Attained | Attained | Attained | Attained |
| BTETL609 | Python Programming Lab | 2.39 | 2.31 | 2.29 | 2.21 | 2.3 |
| | | Attained | Attained | Attained | Attained | Attained |
| BTETP610 | Mini-project | 2.25 | 2.89 | 2.24 | 2.87 | 2.56 |
| | | Attained | Attained | Attained | Attained | Attained |
| BTETF611 | Field Training/Internship/ Industrial Training | 2.84 | 2.85 | 2.88 | 2.92 | 2.87 |
| | | Attained | Attained | Attained | Attained | Attained |
| BTETC701 | Digital Communication | 2.39 | 2.31 | 2.29 | 2.21 | 2.3 |
| | | Attained | Attained | Attained | Attained | Attained |
| BTETPE702 | Wireless Sensor Network | 2.64 | 2.84 | 2.58 | 2.94 | 2.75 |
| | | Attained | Attained | Attained | Attained | Attained |
| BTETPE703 | Embedded System Design | 2.56 | 2.76 | 2.51 | 2.9 | 2.68 |
| | | Attained | Attained | Attained | Attained | Attained |
| BTETPE704 | Mechatronics | 2.8 | 2.83 | 2.89 | 2.89 | 2.85 |
| | | Attained | Attained | Attained | Attained | Attained |
| BTHM705 | Financial Management | 2.39 | 2.31 | 2.29 | 2.21 | 2.3 |
| | | Attained | Attained | Attained | Attained | Attained |

| | | | | | | |
|---|---|---|---|---|---|---|
| BTETL706 | Wireless Sensor Network | 2.94 | 2.46 | 2.95 | 2.48 | 2.71 |
| | | Attained | Attained | Attained | Attained | Attained |
| BTETL707 | Embedded System Design Lab | 2.9 | 2.96 | 2.86 | 2.91 | 2.91 |
| | | Attained | Attained | Attained | Attained | Attained |
| BTETL708 | Mechatronics Lab | 2.91 | 2.9 | 2.45 | 2.43 | 2.67 |
| | | Attained | Attained | Attained | Attained | Attained |
| BTETP709 | Project Part I | 2.82 | 2.83 | 2.93 | 2.85 | 2.85 |
| | | Attained | Attained | Attained | Attained | Attained |
| BTETF611 | Field Training/ Internship/Industrial Training Evaluation | 2.82 | 2.83 | 2.93 | 2.85 | 2.85 |
| | | Attained | Attained | Attained | Attained | Attained |
| BTETPE801A | Introduction to the Internet of Things | 2.39 | 2.31 | 2.29 | 2.21 | 2.3 |
| | | Attained | Attained | Attained | Attained | Attained |
| BTETPE802A | Industrial Automation and Control | 2.92 | 2.9 | 2.94 | 2.85 | 2.9 |
| | | Attained | Attained | Attained | Attained | Attained |

### 3.3.2 Provide results of evaluation of each PO&PSO (40)

Program shall set Program Outcome attainment levels for all POs & PSOs.

(The attainment levels by direct (student performance) and indirect (surveys) are to be presented through Program level Course–PO & PSO matrix as indicated).

**PO Attainment:**

| Course Name & Code | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Engineering Mathematics-I | 2.89 | 2.89 | 2.85 | 2.85 | | 2.85 | | | | | 2.85 | 2.88 |
| Engineering Physics | 2.88 | 2.79 | 2.76 | 2.76 | | 2.96 | 2.96 | | | | | 2.76 |
| Engineering Graphics(BTES103) | 2.92 | 2.92 | 2.91 | 2.91 | 2.91 | | | | | 2.92 | | 2.92 |
| Communication Skills(BTHM104) | 2.93 | | | | 2.89 | 2.87 | | 2.88 | | 2.9 | | 2.89 |
| Energy and Environment Engineering (BTES105) | 2.89 | 2.92 | 2.83 | 2.92 | | 2.91 | 2.88 | 2.93 | | 2.86 | 2.92 | |
| Basic Civil and Mechanical Engineering (BTES106) | 2.87 | 2.93 | 2.73 | 2.73 | | 2.73 | 2.93 | | | 2.81 | 2.73 | |
| Engineering Physics Lab(BTBS107L) | 2.71 | 2.47 | 2.95 | 2.95 | | 2.94 | 2.94 | | 2.95 | | | 2.95 |
| Engineering Graphics Lab(BTES108L) | 2.42 | 2.29 | 2.33 | 2.37 | 2.42 | | | | 2.13 | 2.61 | | 2.33 |
| Communication Skills Lab ( BTHM109L) | 2.95 | | | | 2.45 | 2.95 | | 2.78 | | 2.68 | | 2.63 |
| Engineering Mathematics-II(BTBS201) | 2.7 | 2.7 | 2.81 | 2.67 | | 2.87 | | | | | 2.87 | 2.72 |
| Engineering Chemistry (BTBS202) | 2.72 | 2.57 | | | | 2.85 | 2.67 | | 2.57 | | | |
| Engineering Mechanics (BTES203) | 2.89 | 2.89 | 2.91 | | | 2.85 | | | 2.85 | | | |
| Computer Programming in C(BTES204) | 2.85 | 2.89 | 2.71 | | | | | | 2.78 | 2.87 | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Workshop Practices(BTES205) | 2.93 | | 2.93 | 2.93 | 2.93 | | | | 2.93 | 2.93 | 2.93 | 2.93 |
| Basic Electrical and Electronics Engineering (BTES206) | 2.85 | | | | | 2.85 | 2.85 | | | | | |
| Computer Programming Lab(BTES207L) | 2.64 | 2.45 | 2.93 | | | | | | 2.74 | 2.45 | | |
| Engineering Chemistry Lab(BTBS208L) | 3 | 3 | | | | 3 | 3 | | 3 | | | |
| Engineering Mechanics Lab(BTES209L) | 2.5 | 2.5 | 2.45 | | | 2.52 | | | 2.52 | | | |
| Mini Project(BTES210P) | 2.94 | 2.86 | | | 2.84 | 2.84 | 2.72 | 2.84 | 2.85 | 2.85 | | |
| Engineering Mathematics-III (BTBSC301) | 2.8 | 2.95 | 2.84 | | 2.87 | | | | 2.84 | | 2.84 | 2.88 |
| Analog Circuits (BTBSC302) | 2.86 | 2.86 | 2.84 | 2.86 | 2.89 | | | | | | 2.81 | |
| Electronic Devices & Circuits (BTBSC303) | 2.86 | 2.84 | 2.85 | 2.83 | 2.81 | | | | | | 2.81 | |
| Network Analysis (BTBSC304) | 2.79 | 2.77 | 2.69 | 2.81 | 2.74 | | | | | | 2.72 | |
| Digital Logic Design (BTBSC305) | 2.88 | 2.86 | 2.88 | 2.88 | 2.86 | | | | | | 2.88 | |
| Basic Human Rights (BTHM3401) | | | 2.85 | | 2.95 | | | 2.95 | 2.85 | 2.95 | | |
| Analog Circuits Lab (BTEXL307) | 2.73 | 2.68 | 2.65 | 2.71 | 2.71 | | | | | | 2.76 | |
| Electronic Devices & Circuits Lab (BTEXL308) | 2.82 | 2.75 | 2.7 | 2.62 | 2.61 | | | | | | 2.79 | |
| Network Analysis Lab (BTEXL309) | 2.95 | 2.45 | 2.94 | 2.47 | 2.78 | | | | | | | 2.48 |
| Digital Logic Design Lab (BTEXL310) | 2.95 | 2.67 | 2.62 | 2.67 | 2.65 | | | | | | | 2.71 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Electronics Workshop (BTEXW311) | 2.95 | 2.45 | 2.94 | 2.47 | 2.78 | | | | | | | 2.48 |
| Field Training/ Internship/Industrial Training Evaluation (BTES211P) | 2.37 | 2.3 | 2.55 | 2.55 | 2.37 | 2.33 | 2.55 | 2.33 | 2.45 | 2.24 | 2.52 | 2.3 |
| Electrical Machines and Instruments (BTEXC401) | 2.92 | 2.73 | 2.84 | | 2.88 | | | | | | | |
| Analog Communication Engineering (BTEXC402) | 2.8 | 2.8 | 2.8 | 2.7 | | | | | | | | 2.7 |
| Microprocessor (BTEXC403) | 2.82 | 2.77 | 2.8 | 2.75 | 2.8 | | | | | | | |
| Signals and Systems (BTEXC404) | 2.79 | 2.79 | 2.79 | 2.88 | | | | | | | | 2.81 |
| Product Design Engineering (BTID405) | 2.46 | 2.48 | 2.95 | 2.94 | | 2.95 | | | 2.46 | 2.95 | 0 | 0 |
| Numerical Methods and Computer Programming (BTBSC406) | 2.82 | | 2.84 | 2.82 | | | | | | | | |
| Electrical Machines and Instruments Lab (BTEXL407) | 2.82 | 2.6 | 2.7 | | 2.94 | | | | | | | |
| Analog Communication Engineering Lab (BTEXL408) | 2.45 | 2.6 | 2.82 | 2.47 | 2.75 | | | | | | 2.45 | |
| Microprocessor Lab (BTEXL409) | 2.94 | | 2.76 | 2.55 | | | | | | | | |
| Signals and Systems Lab (BTEXL410) | 2.84 | 2.45 | 2.66 | 2.47 | 2.61 | | | | | | 2.7 | |
| Soft-Skill Development (BTHML411) | 1.09 | | 1.09 | | 1.09 | | | 1.08 | | 1.09 | 1.08 | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Field Training/ Internship/Industrial Training (BTEXF412) | 2.38 | 2.38 | 2.42 | 2.26 | 2.41 | 2.24 | 2.38 | 2.29 | 2.27 | 2.38 | 2.27 | 2.41 |
| Electromagnetic Field Theory (BTEXC501) | 3 | 2 | 2.5 | 2.5 | | | | | | | | 3 |
| Control System Engineering (BTEXC502) | 2.0 | 2.3 | 1.5 | 1.3 | 1.7 | | | | | | 1.0 | 1.0 |
| Computer Architecture (BTETC503) | 1.33 | 2.75 | 2 | 1 | 2.67 | 3 | | | | | 2 | |
| Digital Signal Processing (BTEXC504) | 3 | 2 | 2 | 2 | 3 | | | | | | 2 | |
| Microcontroller and its Applications (BTEXC505) | 1.75 | 2 | 1.5 | 2.25 | 2 | | | | | | 1 | |
| Probability Theory and Random Processes (BTEXPE506A) | 2.96 | 2.96 | 2.96 | 2.96 | | | | | | | | 2.96 |
| Control System Engineering Lab (BTETL507) | 2.75 | 2 | 1 | 1 | | | 1 | | | | 1.33 | 2 |
| Digital Signal Processing Lab (BTETL508) | 2.75 | 2.73 | 2.75 | 2.76 | 2.75 | 2.75 | | | 2.75 | 2.75 | 2.75 | 2.75 |
| Microcontroller and its Applications Lab (BTETL509) | 2.74 | 2.79 | 2.82 | 2.82 | 2.76 | | | | | | | |
| Mini Project (BTETP510) | 1.75 | 1.33 | 2 | 1.25 | 1.67 | | 1 | 2 | 1 | 2 | | |
| Seminar (BTETS511) | 2.33 | | 2.5 | | 1 | | | | | 1 | 3 | 2 |
| Field Training/ Internship/Industrial Training Evaluation (BTEXF412) | 2.38 | 2.38 | 2.42 | 2.26 | 2.41 | 2.24 | 2.38 | 2.29 | 2.27 | 2.38 | 2.27 | 2.41 |
| Antennas and Wave Propagation | 2 | 3 | 2.33 | 2 | 2 | | | | | | 1.67 | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (BTETC601) | | | | | | | | | | | | |
| Computer Network & Cloud Computing (BTETC602) | 1.33 | 3 | 2 | 1 | 3 | 3 | | | | | 2 | |
| Digital Image Processing (BTETC603) | 3 | 2 | 2.5 | 2.25 | | | | | | | | 3 |
| Android Programming (BTETPE604F) | 2.25 | 2 | 1.5 | 2 | 1.33 | | | | | | | 1 |
| Python Programming (BTETOE605E) | 2.83 | 2.83 | 2.83 | | 2.83 | | | | | | 2.85 | 2.85 |
| Employability & Skill Development (BTHM606) | 2 | 2 | | | | 2 | 2 | 2 | | 2 | | |
| Computer Network & Cloud Computing Lab (BTETL607) | 1.5 | 1.75 | 1.67 | 1 | 1.33 | | | | | | 1 | |
| Android Programming Lab (BTETPE608F) | 2.75 | 2.5 | 2 | 2 | | 1.25 | 1.25 | | 1.75 | 1.25 | | 1.25 |
| Python Programming Lab (BTETL609) | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | | | | | | | 2.5 |
| Mini-project (BTETP610) | 1.75 | 1.33 | 2 | 1.25 | 1.67 | | 1 | 2 | 1 | 2 | | |
| Field Training/ Internship/ Industrial Training (BTETF611) | 2.38 | 2.38 | 2.42 | 2.26 | 2.41 | 2.24 | 2.38 | 2.29 | 2.27 | 2.38 | 2.27 | 2.41 |
| Digital Communication (BTETC701) | 3.0 | 3.0 | 3.0 | 2.5 | 2.5 | | | | | | | 2.0 |
| Wireless Sensor Network (BTETPE702) | 2.0 | | 2.0 | 2.0 | 2.5 | | | | 3.0 | | 2.5 | |
| Embedded System Design (BTETPE703) | 2.0 | 2.0 | 1.5 | 2.0 | 3.0 | | | | 1.0 | | | 2.0 |
| Mechatronics (BTETPE704) | 2.0 | | 2.0 | 2.0 | 2.5 | | | | 3.0 | | 2.5 | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Financial Management(BTHM705) | 2.5 | 2.3 | 2.5 | | 2.0 | 2.5 | 2.0 | 2.5 | | 1.5 | 2.0 | 1.5 |
| Wireless Sensor Network | 2.6 | | 2.5 | 2.5 | 2.4 | 2.9 | | 2.4 | | | | |
| Embedded System Design Lab (BTETL707) | 2.8 | 2.7 | 2.7 | 2.6 | 2.7 | | | | | | 2.9 | |
| Mechatronics Lab (BTETL708) | 2.6 | | 2.5 | 2.5 | 2.4 | 2.9 | | 2.4 | | | | |
| Project Part I (BTETP709) | 2.75 | 2 | 3 | 3 | 2.25 | 1.33 | 1.67 | 1 | 2 | 1.75 | 2 | 1.5 |
| Field Training/ Internship/Industrial Training Evaluation (BTETF611) | 2.4 | 2.4 | 2.4 | 2.3 | 2.4 | | 2.4 | | 2.3 | 2.4 | 2.3 | 2.4 |
| Introduction to Internet of Things (BTETPE801A) | 1 | 2 | 2 | 1 | 2 | | | | | | 1 | |
| Industrial Automation and Control (BTETPE802A) | 3 | 3 | 3 | 2.5 | 2.5 | | | | | | | 2 |
| **Approximate Attainment** | **2.56** | **2.53** | **2.51** | **2.36** | **2.47** | **2.63** | **2.25** | **2.29** | **2.41** | **2.34** | **2.24** | **2.33** |
| | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** |

| Course | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **CO Attainment** | 2.52 | 2.45 | 2.38 | 2.33 | 2.42 | 2.56 | 2.19 | 2.21 | 2.32 | 2.26 | 2.21 | 2.31 |
| **Direct Attainment** | 2.56 | 2.53 | 2.51 | 2.36 | 2.47 | 2.63 | 2.25 | 2.29 | 2.41 | 2.34 | 2.24 | 2.33 |
| **Indirect Attainment** | 2.41 | 2.28 | 1.97 | 2.21 | 2.33 | 2.36 | 2.20 | 1.95 | 2.17 | 1.97 | 2.16 | 2.28 |

| Year & Semester | Course code | Course | PSO1 | PSO2 |
|---|---|---|---|---|
| FY SEM1 | BTBS101 | Engineering Mathematics-I | 2.93 | 2.85 |
| | BTBS102 | Engineering Physics | 2.96 | 2.83 |
| | BTES103 | Engineering Graphics | 2.92 | |
| | BTHM104 | Communication Skills | | 2.93 |
| | BTES105 | Energy and Environment Engineering | | |
| | BTES106 | Basic Civil and Mechanical Engineering | | |
| | BTBS107L | Engineering Physics Lab | 2.94 | 2.94 |
| | BTES108L | Engineering Graphics Lab | 2.13 | |
| | BTHM109L | Communication Skills Lab. | | |
| FY SEMII | BTBS201 | Engineering Mathematics- II | 2.87 | 2.87 |
| | BTBS202 | Engineering Chemistry | | |
| | BTES203 | Engineering Mechanics | | |
| | BTES204 | Computer Programming in C | 2.85 | |

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|---|---|---|---|---|
| | BTES205 | Workshop Practices | | |
| | BTES206 | Basic Electrical and Electronics Engineering | 2.93 | 2.85 |
| | BTES207L | Computer Programminging Lab | 2.45 | |
| | BTBS208L | Engineering Chemistry Lab | | |
| | BTES209L | Engineering Mechanics Lab | | |
| | BTES210P | Mini Project | 2.84 | 2.72 |
| | BTES211P | Field Training/ Internship/Industrial Training Evaluation | 2.42 | 2.33 |
| **SY- SEMIII** | BTBSC301 | Engineering Mathematics-III | 2.92 | 2.88 |
| | BTBSC302 | Analog Circuits | 2.88 | 2.87 |
| | BTBSC303 | Electronic Devices & Circuits | 2.85 | 2.89 |
| | BTBSC304 | Network Analysis | 2.77 | 2.70 |
| | BTBSC305 | Digital Logic Design | 2.88 | 2.84 |
| | BTHM3401 | Basic Human Rights | 2.95 | 2.85 |
| | BTEXL307 | Analog Circuits Lab | 2.45 | 2.43 |
| | BTEXL308 | Electronic Devices & Circuits Lab | 2.70 | 2.70 |
| | BTEXL309 | Network Analysis Lab | 2.95 | 2.45 |
| | BTEXL310 | Digital Logic Design Lab | 2.62 | 2.60 |

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|---|---|---|---|---|
| | BTEXW311 | Electronics Workshop | 2.45 | 2.94 |
| **SY- SEM IV** | BTEXC401 | Electrical Machines and Instruments | 2.80 | 2.90 |
| | BTEXC402 | Analog Communication Engineering | 2.83 | 2.82 |
| | BTEXC403 | Microprocessor | 2.84 | 2.86 |
| | BTEXC404 | Signals and Systems | 2.82 | 2.82 |
| | BTID405 | Product Design Engineering | 2.70 | 2.71 |
| | BTBSC406 | Numerical Methods and Computer Programming | 2.76 | 2.86 |
| | BTEXL407 | Electrical Machines and Instruments Lab | 2.78 | 2.62 |
| | BTEXL408 | Analog Communication Engineering Lab | 2.94 | 2.45 |
| | BTEXL409 | Microprocessor Lab | 2.70 | 2.74 |
| | BTEXL410 | Signals and Systems Lab | 2.71 | 2.66 |
| | BTHML411 | Soft-Skill Development | 1.07 | |
| | BTEXF412 | Field Training/ Internship/Industrial Training | 2.20 | 2.34 |
| **TY- SEM V** | BTEXC501 | Electromagnetic Field Theory | 2.25 | 2.00 |
| | BTEXC502 | Control System Engineering | 1.33 | 2.00 |
| | BTETC503 | Computer Architecture | 1.67 | 1.50 |
| | BTEXC504 | Digital Signal Processing | 2.00 | |
| | BTEXC505 | Microcontroller and its Applications | 1.75 | |
| | BTEXPE506A | Probability Theory and Random Processes | 2.96 | 2.96 |
| | BTETL507 | Control System Engineering Lab | 2.00 | 2.00 |

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|---|---|---|---|---|
| | BTETL508 | Digital Signal Processing Lab | 2.73 | 2.71 |
| | BTETL509 | Microcontroller and its Applications Lab | 2.74 | 2.72 |
| | BTETP510 | Mini Project | 2.00 | 1.50 |
| | BTETS511 | Seminar | 1.50 | 2.67 |
| | BTEXF412 | Field Training/ Internship/Industrial Training Evaluation | 2.20 | 2.34 |
| **TY- SEM VI** | BTETC601 | Antennas and Wave Propagation | 1.67 | 2.00 |
| | BTETC602 | Computer Network & Cloud Computing | 2.00 | 1.50 |
| | BTETC603 | Digital Image Processing | 3.00 | 3.00 |
| | BTETPE604F | Android Programming | 2.00 | 1.50 |
| | BTETOE605E | Python Programming | 2.87 | 2.83 |
| | BTHM606 | Employability & Skill Development | 2.00 | 2.00 |
| | BTETL607 | Computer Network & Cloud Computing Lab | 1.25 | 1.00 |
| | BTETPEL608 | Android Programming Lab | 3.00 | 1.00 |
| | BTETL609 | Python Programming Lab | 2.73 | 2.71 |
| | BTETP610 | Mini-project | 2.00 | 1.50 |
| | BTETF611 | Field Training/ Internship/ Industrial Training | 2.20 | 2.34 |
| **BTech- SEM VII** | BTETC701 | Digital Communication | 2.00 | 1.50 |
| | BTETC702 | Wireless Sensor Network | 3.00 | 2.00 |
| | BTETC703 | Embedded System Design | 1.79 | 2.00 |

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|---|---|---|---|---|
| | BTETC704 | Mechatronics | 3.00 | 2.00 |
| | BTHM705 | Financial Management | 2.50 | 1.25 |
| | BTETL706 | Wireless Sensor Network Lab | 2.55 | 2.65 |
| | BTETL707 | Embedded System Design Lab | 2.71 | |
| | BTETL708 | Mechatronics Lab | 2.56 | 2.66 |
| | BTETP709 | Project Part I | 2.75 | 1.50 |
| | BTETF611 | Field Training/ Internship/Industrial Training Evaluation | 2.20 | 2.34 |
| **B Tech- SEM VIII** | BTETPE801A | Introduction to Internet of Things | 2.00 | 1.00 |
| | BTETPE802A | Industrial Automation and Control | 1.00 | 2.75 |

| **Course** | **PSO1** | **PSO2** |
|---|---|---|
| **CO Attainment** | 2.44 | 2.34 |
| **Direct Attainment** | 2.46 | 2.38 |
| **Indirect Attainment** | 2.37 | 2.19 |

| | | |
|---|---|---|
| **CRITERION 04** | **Students' Performance** | **150** |

## 4.5. Placement, Higher Studies and Entrepreneurship (40)

| Item | CAY*m1* (2021-22) | CAY*m2* (2020-21) | CAY*m3* (2019-20) |
|---|---|---|---|
| Total No. of Final Year Students(N) | **54** | **57** | **20** |
| No of students placed in companies or Government Sector(x) | **49** | **54** | **15** |
| No. of students admitted to higher studies with valid qualifying scores (GATE or equivalent State or National Level Tests, GRE, GMAT etc.) (y) | **0** | **0** | **0** |
| No. of students turned entrepreneur in engineering/technology (z) | **0** | **0** | **0** |
| x +y +z = | **49** | **54** | **15** |
| Placement Index:(x+y+z)/N | **0.90** | **0.94** | **0.75** |
| Average placement=(P1+P2+P3)/3 | **0.86** | | |

**TableB.4.5**

**4.5a Provide the placement data in the below mentioned format with the name of the program and the assessment year:**

**Program Year 2021-22**

**Placement Details**

| Sr.no. | Name of student | Name of the company | Designation | Salary (Per Annum) | Ref Number |
|---|---|---|---|---|---|
| 1 | KADAM SANCHITA HANMANT | APTRON TECHNOLOGY, SATARA | TRAINEE ENGINEER | 1.5 L | APT-SO/2021-22/11-05 |
| 2 | CHAVAN MAHESH TANAJI | SURYAURJAA TECHNOLOGY, SATARA | SALES-TRAINEE | 1.25L | SURYA-OL/2223/08-04 |
| 3 | PATEL SIMRAN ALLAUDDIN | HCL TECHNOLOGIES LTD., NOIDA | GRADUATE ENGINEER TRAINEE | 4.25L | HCL-GE/REC/201-22/05 |
| 4 | POTEKAR SNEHAL SANJAY | TATA MOTORS, PUNE | APPERNTICE TRAINEE | 1.44L | HR-TRG/TA/REC/2021-22/ |
| 5 | SHAIKH FARIYAD RASHID) | LEAN QUALITY SOLUTIONS PVT LTD PUNE | Junior SQL Developer | 2.5L | LQS-SQ-2022-23/REC/06 |
| 6 | JADHAV TRUPTI SANDIP | CAPGEMINI TECHNOLOGY, MUMBAI | ANALYST/A4 | 4.0 L | 6227576/449401 |
| 7 | KADAM OMKAR NAVNATH | WIPRO PUNE | PROJECT ENGINEER | 3.5L | WIPRO-PE/2122/05 |
| 8 | SAWANT PRATIKSHA SHANKAR | TATA MOTORS, PUNE | TECHNICIAN APPRNTICE | 1.44 L | HR-TRG/TA/REC/2021-22/ |
| 9 | JADHAV KOMAL SANJAY | WELLNESS FOREVER MEDICARE LTD.,MUMBAI | INTERNSHIP TRAINEE | 1.44 L | WFM-TA/REC/2122/06 |

| | | | | | |
|---|---|---|---|---|---|
| 10 | MAHADIK OMKAR SANJAY | APTRON TECHNOLOGY, SATARA | TRAINEE Engineer | 1.26L | APT-SO/2022/11-07 |
| 11 | GHORPADE PRANALII RAMCHANDRA | RELIEANCE SMSL PUNE | SALES ASSOCIATE | 1.75 L | HR/FEB/23/K2/60599331/1001411098 |
| 12 | KUMBHAR DHANASHREE SHARAD | TATA AUTOCOMM SYSTEM LTD PUNE | AUTOMOTIVE ASSEMBLY OPERATOR | 2.26 L | 073-14613690 |
| 13 | CHAVAN VARSHA KASHINATH | HUDI INDIS PVT LTD PUNE | SPORTS ANALYST | 2.88 L | HUDI/2021-22/6633 |
| 14 | KHAN MISBA KHALIL | INFOSYS PUNE | ANALYST | 2.25 L | HRD/3T/1003303427/22-23 |
| 15 | KADAM VAISHNAVI RAJENDRA | SURYAURJAA TECHNOLOGY, SATARA | Sales-Trainee | 1.25L | SURYA-OL/2223/08-04 |
| 16 | KADAM SHIVANI VIJAY | TATA MOTOR PUNE | TECHNICIAN APPRNTICE | 1.44 L | HR-TRG/TA/REC/2021-22/ |
| 17 | KADAM SHRIHARI VIJAY | DEQUODE PUNE | SOLUTION ENGINEER | 3.40 L | DE-SE/REC/2021-22 |
| 18 | BHOSALE POOJA GORAKH | HR OUTPROFF TECH PUNE | INTERNSHIP TRAINEE | 2.5 L | HR/IT-2021-22 |
| 19 | CHAVAN SANDHYA RANI SHASHIKANT (print) | TATA MOTOR PUNE | TECHNICIAN APPRNTICE | 1.44 L | HR-TRG/TA/REC/2021-22/ |
| 20 | KHAMKAR POOJA SHANKAR | APTRON TECH, SATARA | TRAINEE ENGINEER | 1.5 L | APT-SO/2021-22/11-06 |

| | | | | | |
|---|---|---|---|---|---|
| 21 | SAYYAD MUSKAN TAIYAB | QUANTIFY MUMBAI | TEST AUTOMATION ENGINEER | 2.44 L | QP/REC/2021-22 |
| 22 | PAWAR ARATI TATYA | CODE SOFT TECH | WEB DEVELOPER | 1.44 L | C507WX3963 |
| 23 | LAVAND MRUNALI SHIVAJI | SURYAURJAA TECHNOLOGY, SATARA | Sales-Trainee | 1.25L | SURYA-OL/2223/08-06 |
| 24 | MORE SHREYASH DILIP | ROCKWELL AUTOMATION | SOFTWARE ENGINEER TRAINEE | 6.34 L | ROCK/RE/2021-22 |
| 25 | SAPTE VIPUL SHASHIKANT | SURYAURJAA TECHNOLOGY, SATARA | SALES-TRAINEE | 1.25L | SURYA-OL/2223/08-07 |
| 26 | SAWANT POOJA KRISHNAT | RSL SOLUTIONS PVT LTD, PUNE | SOFTWARE DEVELOPER | 2.44 L | RSL/REC/021-22 |
| 27 | JADHAV GHANSHYAM VIKAS | SAI TECHNOLOGY, SATARA | TRAINEE Engineer | 1.44 L | SAI/ REC/ 2021-22 |
| 28 | VIBHUTE PRADNYA GAJANAN | YASHAWI ACADEMY FOR SKILLS | ASSEMBLY LINE SUPERVISOR | 1.59 L | YASHAWI/REC/2021-22 |
| 29 | ANJALI SAHEBRAO SANAS | INYATRA TECH PVT LTD | PCB TESTING | 1.22 L | INYANTRA/REC/2021-22 |
| 30 | GOUDANAVARU SHIVANAND AMASIDDH | OMKAR LECTRONICS | GRADUATE TRAINEE ENGINEER | 2.25 L | OMKAR/REC/2021-22 |
| 31 | SAVAKHANDE TEJAS | OMKAR LECTRONICS | GRADUATE TRAINEE ENGINEER | 2.25 L | OMKAR/REC/2021-22 |

| | | | | | |
|---|---|---|---|---|---|
| 32 | RAJESHIRKE ABHISHEK PRADIP | OMKAR LECTRONICS | GRADUATE TRAINEE ENGINEER | 2.25 L | OMKAR/REC/2021-22 |
| 33 | BABAR HEMA SURESH | SAI TECHNOLOGY, SATARA | TRAINEE Engineer | 1.44 L | SAI/ REC/ 2021-22 |
| 34 | PHARANDE ROHAN HANMANT | OMKAR LECTRONICS | GRADUATE TRAINEE ENGINEER | 2.25 L | OMKAR/REC/2021-22 |
| 35 | NIMBALKAR ANIKET MAHESH | SAI TECHNOLOGY, SATARA | TRAINEE Engineer | 1.44 L | SAI/ REC/ 2021-22 |
| 36 | BHANDARE AISHWARYA SANJAY | ABHAY SINGH BHOSALE NSTITUTE TECHNOLOGY, SATARA | ASSI. PROF | 1.8 L | 2023-24/205 |
| 37 | CHAVAN KAJAL BALU | INYANTRA TECH PVT LTD SHINDEWADI | TRAINEE Engineer | 1.8 L | INYANTRA/REC/2021-22 |
| 38 | BHILARE PRIYANKA RAVINDRA | INYANTRA TECH PVT LTD SHINDEWADI | TRAINEE Engineer | 1.8 L | INYANTRA/REC/2021-22 |
| 39 | PAWAR ANKITA VILAS | OMKAR LECTRONICS | GRADUATE TRAINEE ENGINEER | 2.25 L | OMKAR/REC/2021-22 |
| 40 | JADHAV VAISHNAVI SUHAS | APTE MANUFACTURING LTD SATARA | SALES COORDINATOR | 2.40 L | AMSPL/HR/F20 |
| 41 | VIDHATE PRANALI SURESH | PROMPT PERSONNEL | AGENCY CONTRACTOR PROVISIONING & CONFIGURATION MANAGEMENT | 2.37 L | PR/REC/2021-22 |
| 42 | MADIWAL NILRAJ BASURAJ | CEM ELECTROTECH PVT LTD | PROCESS QUALITY ENGINEER | 3.20 L | CEM0REC02021-22 |

| | | | | | |
|---|---|---|---|---|---|
| 43 | SAKUNDE SACHEEN RAMCHANDRA | FLASH ELECTRONICS | SENIOR PCB DESIGNER-R&D | 1.80 L | FEIPL/HR/APPT/1906 |
| 44 | HAWALE SUVARNA SOMNATH | SAI TECHNOLOGY, SATARA | TRAINEE Engineer | 1.30 L | SAI/ REC/ 2021-22 |
| 45 | SAWANT GOURI ASHOK | BSA NEEM | TRAINEE Engineer | 1.50 L | BSA/PUN/NT/7874 |
| 46 | NIKAM SAYALI DHANAJI | HCL TECHNOLOGIES | SOFTWARE ENGINEER TRAINEE | 2.52 L | HCL/REC/2021-22 |
| 47 | DHAYGUDE HARSHADA ABHAY | APTRON TECH, SATARA | TRAINEE ENGINEER | 1.80 L | APT-SO/2021-22/11-07 |
| 48 | KADAM MADHAVI PRAKASH | CLEAN MOBILITY TECH | TRAINEE Engineer | 2.87 L | PVCMT/HR/APP/2023/007 |
| 49 | SHAIKH ASIF RAFIK | INFINITY PUNE | QUALITY CONTROL ENGINEER | 2.16 L | INFINITY/22-23/CF/03 |

**Program Year 2020-21**

**Placement Record**

| S.no. | Name of student | Name of the company | Designation | Salary (Per Annum) | Ref Number |
|---|---|---|---|---|---|
| 1 | ATUL MADHUKAR SALUNKHE | PRICOL TECHNOLOGIES PUNE | ASSEMBLY LINE OPERATOT | 1.88 L | PRE/REC/2020-21 |
| 2 | JAMDADE SHRAVANI RAMESH | INYATRA TECH PVT LTD | PRODUCTIO N ENGINEER | 1.80 L | INYANTRA/REC/20 21-22 |
| 3 | RAJASHRI DAJIRAM DESHMUKH | VIDHYATI TECH KOLHAPUR | TRAINEE ENGINEER GRADE-T | 2.70 L | VIDHYATI/REC/20 20-21 |
| 4 | MANKAR KOMAL RAMCHANDRA | SAI TECHNOLOGY | GRADUATE TRAINEE | 2.5L | SAI/REC/2022 |
| 5 | ROHIT PANDURANG DESHMUKH | VIDHYATI TECH KOLHAPUR | TRAINEE ENGINEER GRADE-T | 2.70 L | VIDHYATI/REC/20 20-21 |
| 6 | MAHADIK SAYALI YASHAWANT | SUN AND TECH AND SERVICES PVT LTD. | ASSOCIATE ENGI TRAINEE | 1.20 L | SUN/REC/2020-21 |
| 7 | PRAJAKTA PRATAP SURYAVANSHI | INFOSIS, MYSORE | SYSTEM ENGINEER | 3.00 L | INFOSYS/REC/2020 -21 |

| | | | | | |
|---|---|---|---|---|---|
| 8 | AVINASH SHAHAJI WAGHMARE | PROCOL PUNE | JUNIOR ENGI | 3.1 L | PRL-HRD-151-PROB-RECT-2021 |
| 9 | BANDAL TUSHAR JAYWANT | SURESH INDU LASERS PVT. LTD, PUNE | PRODUCTIO N AND SERVICE TRAINEE | 2.5 L | SIL-HR/REC/2020-21 |
| 10 | BHINGARE RAKSHATA MAHADEV | DANA INDIA TECHNICAL CENTER, PVT LTD, RATNAGIRI | POST GRADUATE TRAINEE ENGI | 2.5 L | DANA/ENGI/22-23 |
| 11 | BHOITE AKASH PRATAPRAO | PROMPT PERSONNEL, MUMBAI | ASSOCIATE ENGINEER | 2.1 L | PROMPT-HRD/REC/2020-21 |
| 12 | BHOSALE JYOTI RAJKUMAR | VIDHYATI TECH KOLHAPUR | TRAINEE ENGINEER GRADE-T | 2.70 L | VIDHYATI/REC/2020-21 |
| 13 | CHAVAN NAMRTA RAMDAS | TOOL TECH GLOBAL ENGINEERING | GET-SOFTWARE ENGI | 3.00 L | TOOLTECH-HR/REC/2020-21 |
| 14 | CHAVAN POONAM MADHUKAR | INSTMOJO PUNE | OPERATOR ENGINEER | 4.8 L | INTA/REC/2020-21 |
| 15 | CHAVAN PRIYANKA RAJENDRA | STELLANTIS FACAIT AUTOMOTIVE INDIA PVT LTD | GRADUATE ENGINEER TRAINEE | 5.5 L | FCAIT-HR/REC/2020-21 |
| 16 | CHAVAN TANUJA VISHWAS | WIPRO, PUNE | PROJECT ENGINEER | 3.5 L | WIPRO-HR/REC/2020-21 |
| 17 | | | | 2.70 L | |

| | | | | | |
|---|---|---|---|---|---|
| | CHOUGULE AKASH BHIMRAO | VIDHYATI TECH KOLHAPUR | TRAINEE ENGINEER GRADE-T | | VIDHYATI/REC/2020-21 |
| 18 | DONGHARE MRUNALI KISHORE | INFOSIS, MYSORE | SYSTEM ENGINEER TRAINEE | 3.5 L | HRD/1003892506/21-22 |
| 19 | GAVALI MANISHA KRUSHNKANT | VIDHYATI TECH KOLHAPUR | TRAINEE ENGINEER GRADE-T | 2.70 L | VIDHYATI/REC/2020-21 |
| 20 | GOVARKAR RUTVIK AJIT | ELECTRAA SOLAR SYSTEM | PRODUCTION AND SERVICE ENGI | 1.8 L | ELECTRA;HRD/REC/2020-21 |
| 21 | JADHAV AKSHAY ARUN | PRICOL TECHNOLOGIES PUNE | ASSEMBLY LINE OPERATOT | 1.88 L | PRE/REC/2020-21 |
| 22 | JADHAV ALPESH ANADRAO | SAGITEC SOLUTIONS PVT LTDPUNE | TRAINEE ENGINEER | 1.2 L | HR/SAGITEC/SP/TL/015/08/22 |
| 23 | JADHAV ANURADHA NARENDRA | DHRUVA AUTOMATION AND CONTROL PVT LTD | TRAINEE ENGINEER | 2.2 L | DRHUV/REC/2020-21 |
| 24 | JADHAV ASHWINI SUDHAKAR | PRICOL TECHNOLOGIES PUNE | ASSEMBLY LINE OPERATOT | 2.2 L | PRE/REC/2020-21 |
| 25 | JAGADALE KAJAL SOMNATH | TCS , CHENNAI | ASSISTANT SYSTEM ENGINEER-TRAINEE | 3.4 L | TCSL/DT20219300033/CHENNAI |
| 26 | JAYANT SANJAY PAWAR | QLOGICIEL | SOFTWARE TESTER | 1.8 L | QLOGIC-HRD/REC/2020-21 |

| | | | | | |
|---|---|---|---|---|---|
| 27 | KALE KSHITIJ SURYKANT | LUEWINT TECH PVT LTD | JUNIOR ENOVIA DEVELOPER | 1.5 L | LUWINT/REC/2020-21 |
| 28 | KHARAT SHITAL SHASHIKANT | OMKAR ELECTRONICS | PCB DEVELOPER | 1.8 L | OMKAR/REC/020-21 |
| 29 | KULKARNI VISHWJEET AMOL | APTRON TECH SATARA | TRAINEE ENGINEER | 3.0 L | APT-SO/2021-22/11-05 |
| 30 | MALI BHAGYASHRI RAGHUNATH | TATA TECHNOLOGIES , PUNE | SOFTWARE DEVELOPER | 4.7 L | TCS-HR/REC/2020-21 |
| 31 | MORE PRATHAMESH ANANDRAO | VODAFONE PUNE | MANAGER-MOBILITY | 7.2 L | VODA/REC/2020-21 |
| 32 | MULANI MOHASIN | CEM ELECTROMECH PVT LTD, SANGALI | PROJECT ENGINEER | 1.9 L | CEM/REC/2020-21 |
| 33 | NIKAM PRIYANKA CHANDRAKANT | VIDHYATI TECH KOLHAPUR | TRAINEE ENGINEER | 1.8 L | VIDHYATI/REC/2020-21 |
| 34 | PARAG DILIP BABAR | SVAKARMA FINANCE PVT LTD | FINANCE OFFICER | 3.8 L | SVAKARMA/REC/2020-21 |

| | | | | | |
|---|---|---|---|---|---|
| 35 | PAWAR KULDEEP SHIVAJI | CDAC, THIRUVANANTPURAM | PROJECT ENGINEER | 2.2 L | HR/714/2022 |
| 36 | PAWAR POOJA | CAIT EDUSIS PVT LTD | PROCESS ENGINEER | 2.8 L | CAIT/REC/2021 |
| 37 | PAWAR PRASAD SANJAY | SAI ELECTRONICS SATARA | TRAINEE ENGINEER | 2.25 L | SAI/REC/2022 |
| 38 | PHARANDE TEJASWEENI | INTANGLES LAB PVT LTD | HERDWARE ENGINEER | 2.8 L | INTANGLES/REC/2020 |
| 39 | PUJA SURESH DESHMUKH | VIDHYATI TECH KOLHAPUR | TRAINEE ENGINEER | 1.8 L | VIDHYATI/REC/2020-21 |
| 40 | RAJPURE ABHIJEET | SAGITECH PUNE | TRAINEE ENGINEER | 1.2 L | SAGITECH/REC/2020 |
| 41 | RANKHAMBE MEGHA JALINDAR | SPACE AUTOMATION | SYSTEM ENGINEER | 1.2L | SA-HRA/REC/22-05 |
| 42 | SALUNKHE ABHISHEK | GOLDSQUIRREL | SOFTWARE TESTER | 2.8 L | GOLDSQL/REC/2020 |
| 43 | SALUNKHE MAYURI | SURYAURJAA TECH | SALES TRAINEE | 1.25 | SURYA/REC/2020 |
| 44 | | | | 2.25 L | SAI/REC/2022 |

| | | | | | |
|---|---|---|---|---|---|
| | SALUNKHE RUSHIKESH | SAI TECHNOLOGY | GRADUATE ENGINEER TRAINEE | | |
| 45 | SAWANT SHITAL | FAURECIA, PUNE | GRADUATE ENGINEER TRAINEE | 5.5 L | FAURECA/REC/2020 |
| 46 | SHINDE AKSHAY SANJAY | YASH TECHNOLOGY | GRADUATE ENGINEER TRAINEE | 3.5 L | YASH/REC/2020 |
| 47 | SHINDE GANESH SANJAY | ACME INFOVISION | SOFTWARE DEVELOPER | 1.95 L | ACME/REC/2020 |
| 48 | SHINDE MAYURI KRUSHNKANT | VIVEKANAND ACADEMY,SATARA | STEM LAB TECH ASSITANT | 1.8 L | VAHE/APPORD/DOC/2021-22/43 |
| 49 | SHINDE PRAJAKTA | SAI TECHNOLOGY | GRADUATE TRAINEE | 2.5L | SAI/REC/2022 |
| 50 | SHIRKE AMIT KRISHNA | SAI TECHNOLOGY | GRADUATE TRAINEE | 1.9 L | SAI/REC/2022 |
| 51 | AKSHATA URANE | INFOSIS, MYSORE | SYSTEM ENGINEER TRAINEE | 3.6 L | INFO/REC/2020-21 |
| 52 | VINCHU SONAM | SURYAURJAA TECH | SALES TRAINEE | 1.25 L | SURYA/REC/2020 |
| 53 | WAYADANDE VIDYA | CENTURION UNIVERSITY OF TECHNOLOGY AND MANAGEMENT | NEEM TRAINEE ENGINEER | 2.5 L | NEEM/REC/2020-21 |

| | | | | | |
|---|---|---|---|---|---|
| 54 | PRIYANKA YADAV | SAI TECHNOLOGY | GRADUATE TRAINEE | 2.5L | SAI/REC/2022 |

**Programs Name and Assessment**

**Year (2019-20)**

| S. no. | Name of student | Name of the company | Designation | Salary (Per Annum) | Ref Number |
|---|---|---|---|---|---|
| 1 | KADAM KIRANVIKAS | LOBO STAFFING SOLUTIONS PVT LTD | NOC ENGINEER | 2.7 L | TCT00749 |
| 2 | SHINDE PRAJAKTA RAJARAM | VIDHYATI TECH KOLHAPUR | TRAINEE ENGINEER | 1.8 L | VIDHYATI/REC/2020-21 |
| 3 | YADAV NIKITA SANJAY | ATOS GLOBAL,PUNE | TRAINEE ENGINEER | 2.70 L | AG/REC/2020 |
| 4 | BANKAR NILAM P | TCS, PUNE | SOFTWARE DEVELOPER | 3.5 L | TCS/HR/REC/2019-20 |
| 5 | NIKAM AISHVARYA S. | VIDHYATI TECH KOLHAPUR | TRAINEE ENGINEER GRADE-T | 2.70 L | VIDHYATI/REC/2020-21 |
| 6 | BHOSALE SNEHAL S. | PHEONIX MICROSYSTEMS,PUNE | ASSOCIATE ENGI TRAINEE | 3.00 L | PHONIX/REC/2019-20 |

| | | | | | |
|---|---|---|---|---|---|
| 7 | DESHPANDE AISHWARYA RAJENDRA | SAI INDUSTRIES SATARA | SYSTEM ENGINEER | 1.50 L | SAI/HRD/REC/2019-20 |
| 8 | BHOSALE POOJA ASHOK | VIDHYATI TECH KOLHAPUR | TRAINEE ENGINEER GRADE-T | 2.70 L | VIDHYATI/REC/2020-21 |
| 9 | BANE SHUBHANGI | MANSHU COMTEL PVT LTD, SATARA | PRODUCTION AND SERVICE TRAINEE | 2.5 L | MANSHU-HR/REC/2020-21 |
| 10 | BHOSALE DHANASHREE MANOJ | MANSHU COMTEL PVT LTD, SATARA | PRODUCTION AND SERVICE TRAINEE | 2.5 L | MANSHU-HR/REC/2020-21 |
| 11 | MENGANE NANDINI P. | KINETIC COMMUNICATIONS LTD, PUNE | PRODUCTION TRAINEE | 2.1 L | KC/REC/2019-20/005 |
| 12 | JADHAV VISHAKHA S. | OMKAR ELCETRONICS, SATARA | TRAINEE ENGINEER GRADE-T | 1.5 L | OMKAR/REC/2020 |
| 13 | SANDE NISHAD S. | OMKAR ELCETRONICS, SATARA | TRAINEE ENGINEER GRADE-T | 1.5 L | OMKAR/REC/2020 |
| 14 | CHABUKSWAR SANOVAR M. | SAI INDUSTRIES SATARA | TECHNOCAL SUPPORT ENGINEER | 2.44 L | SAI/HRD/REC/2019-20 |

| | | | | | |
|---|---|---|---|---|---|
| 15 | MOHITE CHAITANYA D. | PROMPT PERSONNEL | NOC ENGINEER | 2.5 L | PROMPT/REC/2020 |

| | | |
|---|---|---|
| **CRITERION 05** | **Faculty Information and Contributions** | **200** |

**5.8 Faculty Performance Appraisal and Development System (FPADS) (30)**

Faculty members of Higher Educational Institutions today have to perform a variety of tasks pertaining to diverse roles. In addition to instruction, faculty members need to innovate and conduct research for their self-renewal, keep abreast with changes in technology, and develop expertise for effective implementation of curricula. They are also expected to provide services to the industry and community for understanding and contributing to the solution of real-life problems in industry. Another role relates to the shouldering of administrative responsibilities and co-operation with other Faculty, Heads-of-Department and the Head of Institute. An effective performance appraisal system for Faculty is vital for optimizing the contribution of individual Faculty to institutional performance.

The assessment is based on:
A well-defined system for faculty appraisal for all the assessment years (10)
Its implementation and effectiveness (20)

**1. Performance appraisal system of the faculty:**

Annual self-assessment for the performance-based appraisal system is adopted as per the UGC notification 30th June 2010 approved by the Govt. of Maharashtra state vide GR dated 15th February 2011. Hence it is ensured that information on multiple activities is appropriately captured.

**Category I: Teaching, Learning and Evaluation Related Activities**

**Brief Explanation:**

Based on the teacher's self-assessment, API scores are proposed for (a) teaching related activities, (b) domain knowledge, (c) participation in examination and evaluation, (d) contribution to innovative teaching, new courses, etc. The minimum API score required by teachers from this category is 75. The self-assessment score should be based on objectively verifiable criteria wherever possible and will be finalized by the screening/selection committee.

**Category II: Co-curricular, Extension and Professional Development Related Activities**

**Brief Explanation:**

Based on the teacher's self-assessment, category II API scores are proposed for co-curricular and extension activities and Professional development related contributions. The minimum API required by teachers for eligibility for promotion is 15. A list of items and proposed scores is given below. It will be noticed that all teachers can earn scores from a number of items, whereas some activities will be carried out only by one or a few teachers. The list of activities is broad enough for the minimum API score required (15) in this category to accrue to all teachers. As before, the self-assessment score should be based on objectively verifiable criteria and will be finalized by the screening/selection committee.

**Category III: Research and Academic Contributions**

**Brief Explanation:**

Based on the teacher's self-assessment, API scores are proposed for research and academic contributions. The minimum API score required by teachers from this category is different for different levels of promotion and between university and colleges. The self-assessment score will be based on verifiable criteria and will be finalized by the screening/selection committee.

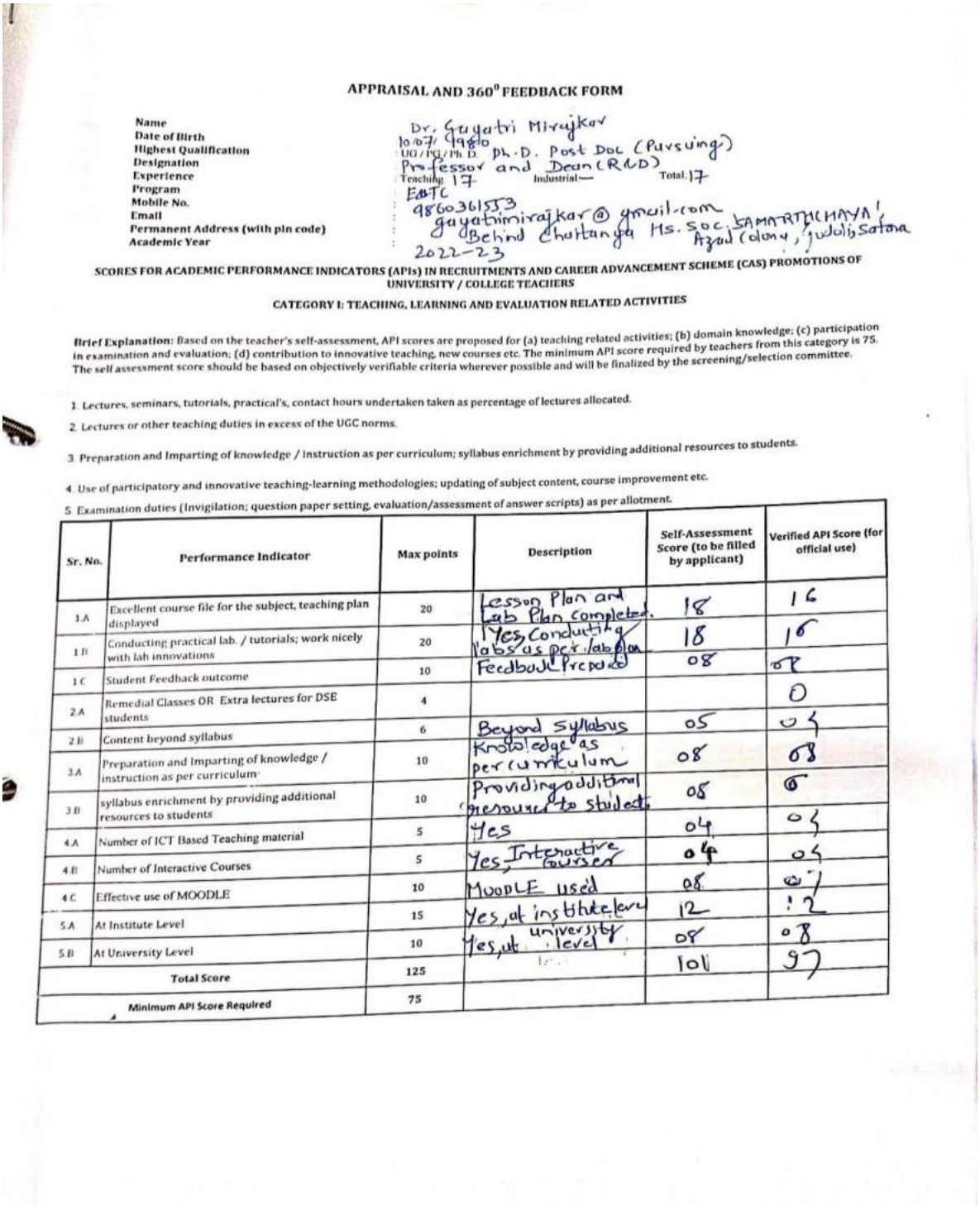
**Review of Performance Appraisal:**

The Performance-based Appraisal System (PBAS) forms are submitted through the Head of Department to the Academic Monitoring Committee (AMC), R&D and IPR Committee, and IQAC Committee. The Head of Department along with the AMC, R&D and IPR Committee, and IQAC form the review committee.

The advantage of PBAS is that each faculty becomes aware of his/her self-weakness and tries to improve oneself in those areas so that he/she can score better in the next year.

The faculty with good API scores are given letters of appreciation and the faculty members having low API scores are personally counseled by the Head of the Institute.

**Annual Self-assessment for the Performance-Based Appraisal System (PBAS) 2022 – 2023**



APPRAISAL AND 360° FEEDBACK FORM

Name : Dr. Gayatri Mirajkar
Date of Birth : 10/07/1980
Highest Qualification : UG / PG / Ph.D. Ph.D. Post Doc (Pursuing)
Designation : Professor and Dean (R&D)
Experience : Teaching 17 Industrial — Total 17
Program : E&TC
Mobile No. : 9860361553
Email : gayatrimirajkar@gmail.com
Permanent Address (with pin code) : Behind Chaitanya Ms. Soc. SAMARTHCHAYA, Azad Colony, Gudli, Satara
Academic Year : 2022-23

SCORES FOR ACADEMIC PERFORMANCE INDICATORS (APIs) IN RECRUITMENTS AND CAREER ADVANCEMENT SCHEME (CAS) PROMOTIONS OF UNIVERSITY / COLLEGE TEACHERS

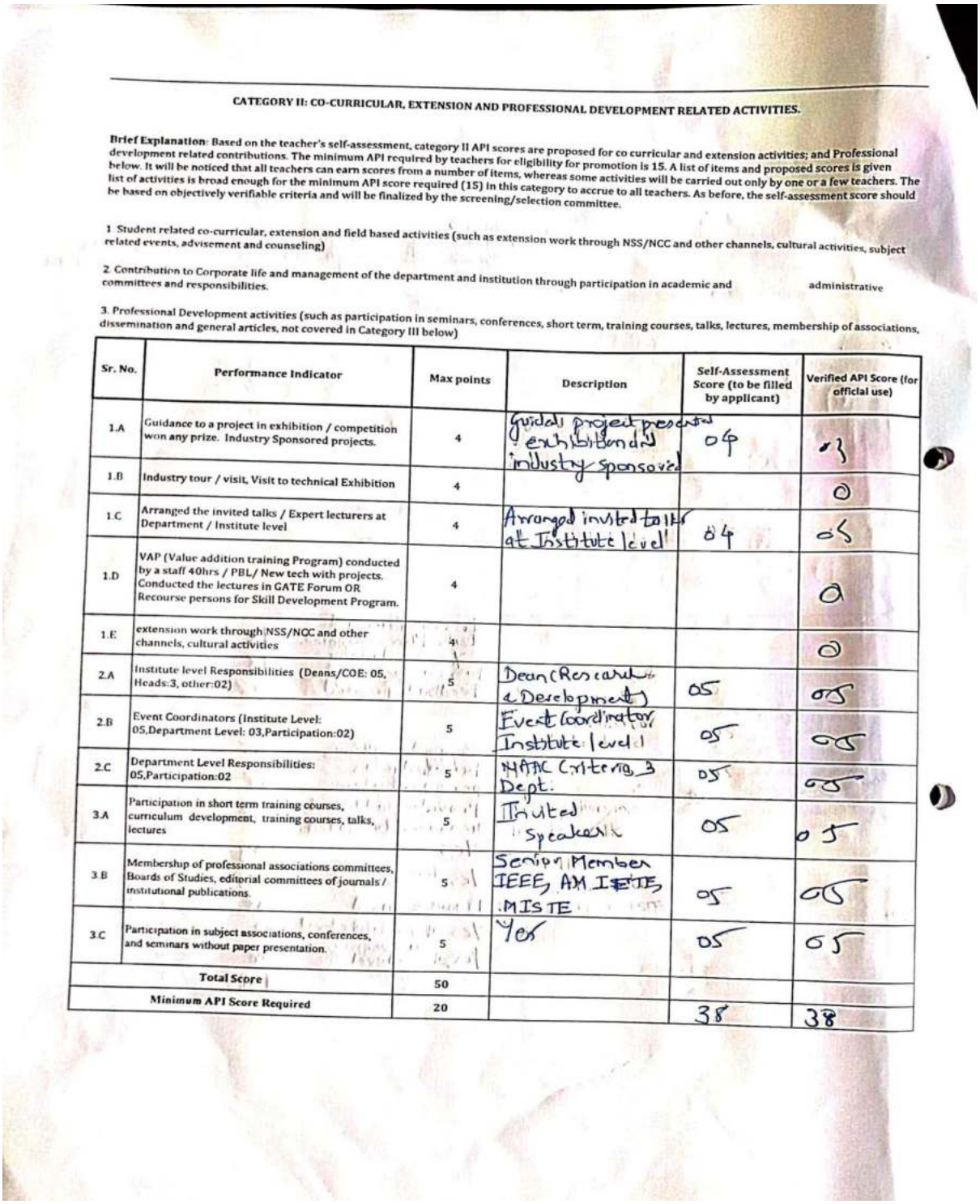
CATEGORY I: TEACHING, LEARNING AND EVALUATION RELATED ACTIVITIES

**Brief Explanation:** Based on the teacher's self-assessment, API scores are proposed for (a) teaching related activities; (b) domain knowledge; (c) participation in examination and evaluation; (d) contribution to innovative teaching, new courses etc. The minimum API score required by teachers from this category is 75. The self assessment score should be based on objectively verifiable criteria wherever possible and will be finalized by the screening/selection committee.

1. Lectures, seminars, tutorials, practical's, contact hours undertaken taken as percentage of lectures allocated.
2. Lectures or other teaching duties in excess of the UGC norms.
3. Preparation and Imparting of knowledge / instruction as per curriculum; syllabus enrichment by providing additional resources to students.
4. Use of participatory and innovative teaching-learning methodologies; updating of subject content, course improvement etc.
5. Examination duties (Invigilation; question paper setting, evaluation/assessment of answer scripts) as per allotment.

| Sr. No. | Performance Indicator | Max points | Description | Self-Assessment Score (to be filled by applicant) | Verified API Score (for official use) |
|---|---|---|---|---|---|
| 1.A | Excellent course file for the subject, teaching plan displayed | 20 | Lesson Plan and Lab Plan completed. | 18 | 16 |
| 1.B | Conducting practical lab. / tutorials; work nicely with lab innovations | 20 | Yes, Conducting labs as per lab plan | 18 | 16 |
| 1.C | Student Feedback outcome | 10 | Feedback Prepared | 08 | 08 |
| 2.A | Remedial Classes OR Extra lectures for DSE students | 4 | | | 0 |
| 2.B | Content beyond syllabus | 6 | Beyond Syllabus | 05 | 05 |
| 3.A | Preparation and Imparting of knowledge / instruction as per curriculum | 10 | Knowledge as per curriculum | 08 | 08 |
| 3.B | syllabus enrichment by providing additional resources to students | 10 | Providing additional resources to students | 08 | 06 |
| 4.A | Number of ICT Based Teaching material | 5 | Yes | 04 | 04 |
| 4.B | Number of Interactive Courses | 5 | Yes, Interactive Courses | 04 | 04 |
| 4.C | Effective use of MOODLE | 10 | MOODLE used | 08 | 08 |
| 5.A | At Institute Level | 15 | Yes, at institute level | 12 | 12 |
| 5.B | At University Level | 10 | Yes, at university level | 08 | 08 |
| | Total Score | 125 | | 101 | 97 |
| | Minimum API Score Required | 75 | | | |

**Figure 5.8.1.a Performance Appraisal Form Page 1**



**CATEGORY II: CO-CURRICULAR, EXTENSION AND PROFESSIONAL DEVELOPMENT RELATED ACTIVITIES.**

**Brief Explanation**: Based on the teacher's self-assessment, category II API scores are proposed for co curricular and extension activities; and Professional development related contributions. The minimum API required by teachers for eligibility for promotion is 15. A list of items and proposed scores is given below. It will be noticed that all teachers can earn scores from a number of items, whereas some activities will be carried out only by one or a few teachers. The list of activities is broad enough for the minimum API score required (15) in this category to accrue to all teachers. As before, the self-assessment score should be based on objectively verifiable criteria and will be finalized by the screening/selection committee.

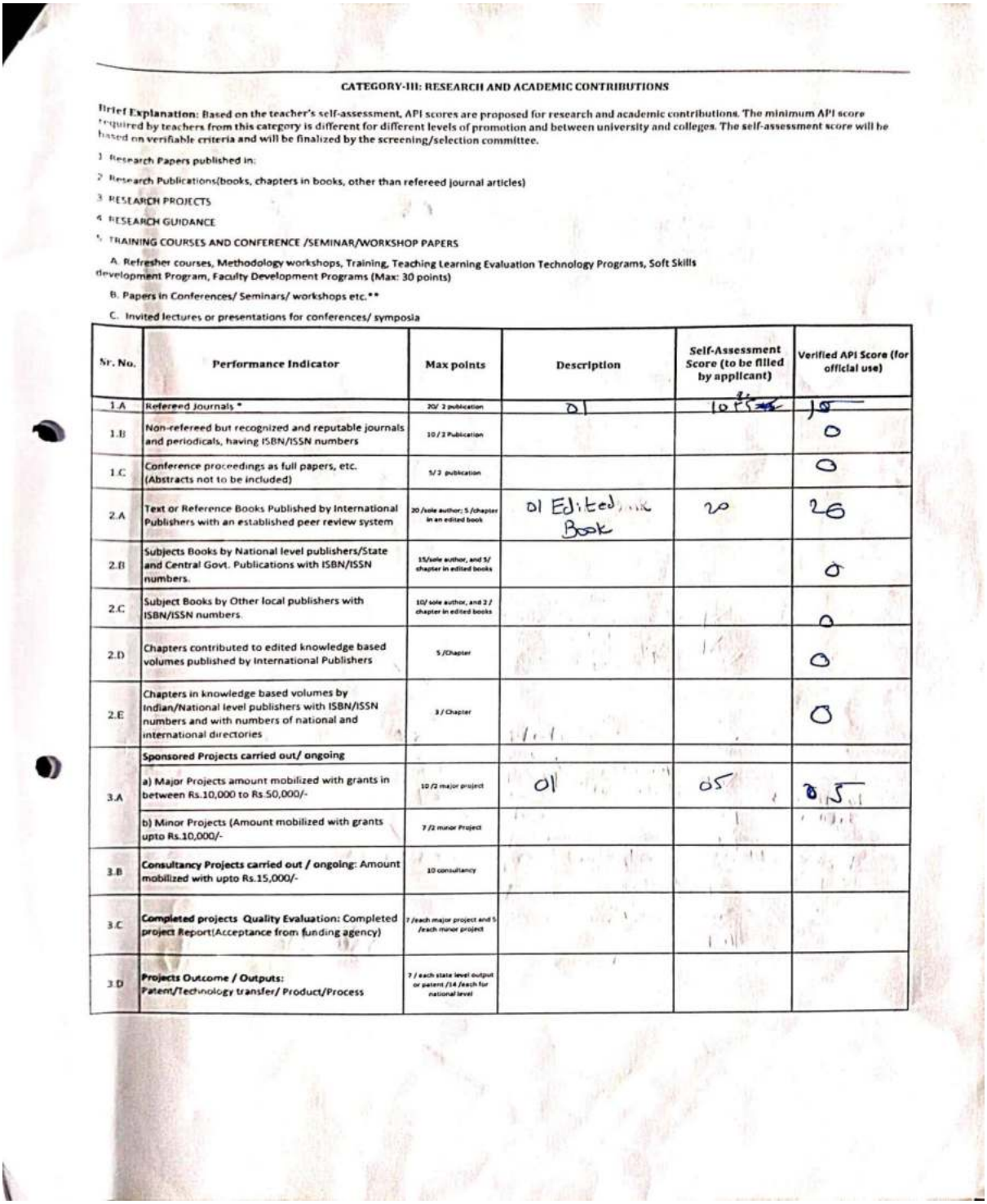
1 Student related co-curricular, extension and field based activities (such as extension work through NSS/NCC and other channels, cultural activities, subject related events, advisement and counseling)

2 Contribution to Corporate life and management of the department and institution through participation in academic and administrative committees and responsibilities.

3. Professional Development activities (such as participation in seminars, conferences, short term, training courses, talks, lectures, membership of associations, dissemination and general articles, not covered in Category III below)

| Sr. No. | Performance Indicator | Max points | Description | Self-Assessment Score (to be filled by applicant) | Verified API Score (for official use) |
|---|---|---|---|---|---|
| 1.A | Guidance to a project in exhibition / competition won any prize. Industry Sponsored projects. | 4 | Guided project presented exhibition and industry sponsored | 04 | 03 |
| 1.B | Industry tour / visit, Visit to technical Exhibition | 4 | | | 0 |
| 1.C | Arranged the invited talks / Expert lecturers at Department / Institute level | 4 | Arranged invited talks at Institute level | 04 | 05 |
| 1.D | VAP (Value addition training Program) conducted by a staff 40hrs / PBL/ New tech with projects. Conducted the lectures in GATE Forum OR Recourse persons for Skill Development Program. | 4 | | | 0 |
| 1.E | extension work through NSS/NCC and other channels, cultural activities | 4 | | | 0 |
| 2.A | Institute level Responsibilities (Deans/COE: 05, Heads:3, other:02) | 5 | Dean (Research & Development) | 05 | 05 |
| 2.B | Event Coordinators (Institute Level: 05,Department Level: 03,Participation:02) | 5 | Event Coordinator Institute level | 05 | 05 |
| 2.C | Department Level Responsibilities: 05,Participation:02 | 5 | NAAC Criteria 3 Dept. | 05 | 05 |
| 3.A | Participation in short term training courses, curriculum development, training courses, talks, lectures | 5 | Invited Speaker | 05 | 05 |
| 3.B | Membership of professional associations committees, Boards of Studies, editorial committees of journals / institutional publications. | 5 | Senior Member IEEE, AM IETE, MISTE | 05 | 05 |
| 3.C | Participation in subject associations, conferences, and seminars without paper presentation. | 5 | Yes | 05 | 05 |
| | **Total Score** | 50 | | | |
| | **Minimum API Score Required** | 20 | | 38 | 38 |

**Figure 5.8.1.a Performance Appraisal Form Page 2**



**CATEGORY-III: RESEARCH AND ACADEMIC CONTRIBUTIONS**

**Brief Explanation:** Based on the teacher's self-assessment, API scores are proposed for research and academic contributions. The minimum API score required by teachers from this category is different for different levels of promotion and between university and colleges. The self-assessment score will be based on verifiable criteria and will be finalized by the screening/selection committee.

1. Research Papers published in:
2. Research Publications(books, chapters in books, other than refereed journal articles)
3. RESEARCH PROJECTS
4. RESEARCH GUIDANCE
5. TRAINING COURSES AND CONFERENCE /SEMINAR/WORKSHOP PAPERS

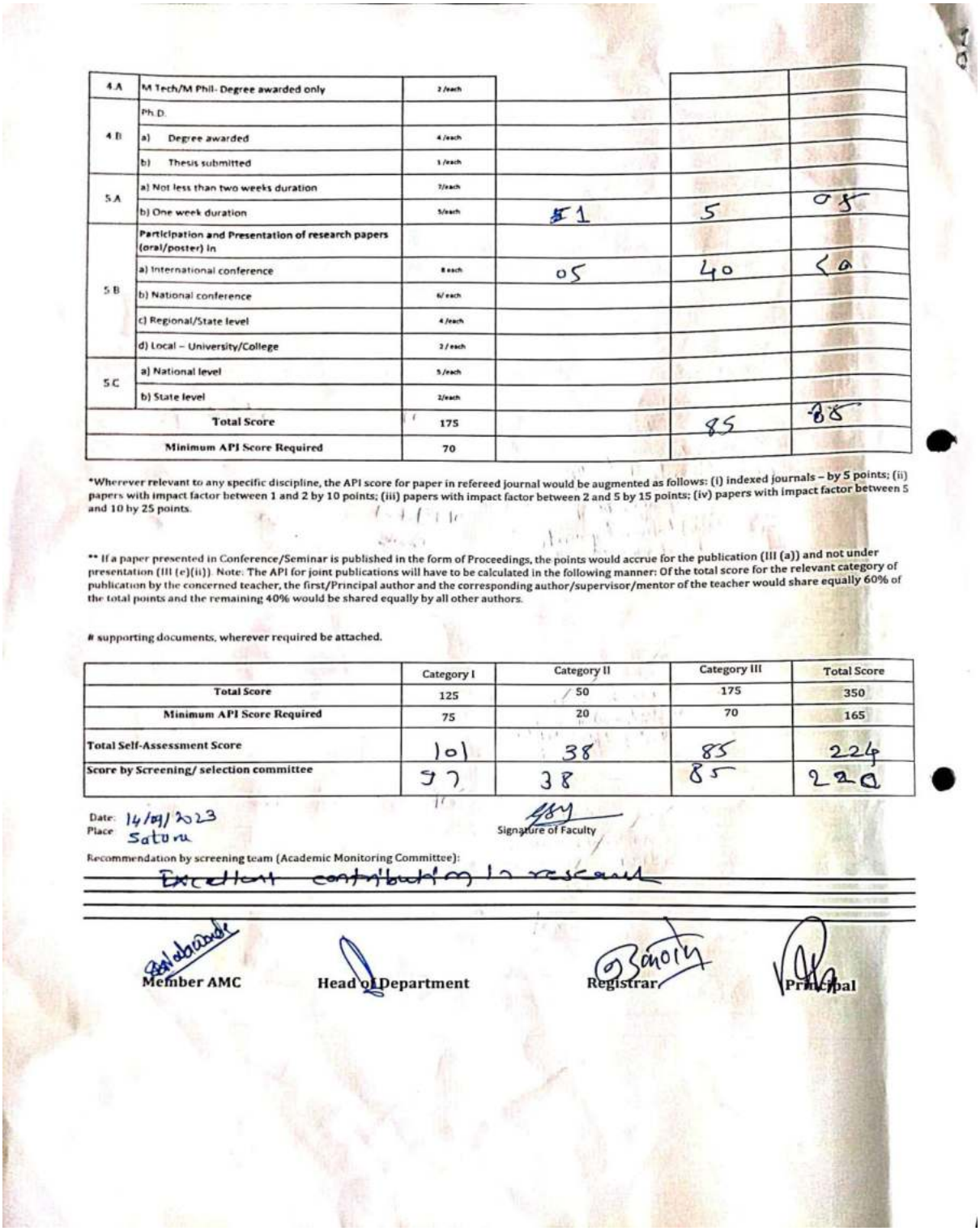
A. Refresher courses, Methodology workshops, Training, Teaching Learning Evaluation Technology Programs, Soft Skills development Program, Faculty Development Programs (Max: 30 points)

B. Papers in Conferences/ Seminars/ workshops etc.**

C. Invited lectures or presentations for conferences/ symposia

| Sr. No. | Performance Indicator | Max points | Description | Self-Assessment Score (to be filled by applicant) | Verified API Score (for official use) |
|---|---|---|---|---|---|
| 1.A | Refereed Journals * | 20/ 2 publication | 01 | 10 | 10 |
| 1.B | Non-refereed but recognized and reputable journals and periodicals, having ISBN/ISSN numbers | 10 / 2 Publication | | | 0 |
| 1.C | Conference proceedings as full papers, etc. (Abstracts not to be included) | 5/ 2 publication | | | 0 |
| 2.A | Text or Reference Books Published by International Publishers with an established peer review system | 20 /sole author; 5 /chapter in an edited book | 01 Edited Book | 20 | 20 |
| 2.B | Subjects Books by National level publishers/State and Central Govt. Publications with ISBN/ISSN numbers. | 15/sole author, and 5/ chapter in edited books | | | 0 |
| 2.C | Subject Books by Other local publishers with ISBN/ISSN numbers. | 10/ sole author, and 2 / chapter in edited books | | | 0 |
| 2.D | Chapters contributed to edited knowledge based volumes published by International Publishers | 5 /Chapter | | | 0 |
| 2.E | Chapters in knowledge based volumes by Indian/National level publishers with ISBN/ISSN numbers and with numbers of national and international directories | 3 / Chapter | | | 0 |
| 3.A | **Sponsored Projects carried out/ ongoing** | | | | |
| | a) Major Projects amount mobilized with grants in between Rs.10,000 to Rs.50,000/- | 10 /2 major project | 01 | 05 | 05 |
| | b) Minor Projects (Amount mobilized with grants upto Rs.10,000/- | 7 /2 minor Project | | | |
| 3.B | **Consultancy Projects carried out / ongoing**: Amount mobilized with upto Rs.15,000/- | 10 consultancy | | | |
| 3.C | **Completed projects Quality Evaluation**: Completed project Report(Acceptance from funding agency) | 7 /each major project and 5 /each minor project | | | |
| 3.D | **Projects Outcome / Outputs:** Patent/Technology transfer/ Product/Process | 7 / each state level output or patent /14 /each for national level | | | |

**Figure 5.8.1.a Performance Appraisal Form Page 3**



| | | | | | |
|---|---|---|---|---|---|
| 4.A | M Tech/M Phil- Degree awarded only | 2/each | | | |
| 4.B | Ph.D. | | | | |
| | a) Degree awarded | 4/each | | | |
| | b) Thesis submitted | 1/each | | | |
| 5.A | a) Not less than two weeks duration | 7/each | | | |
| | b) One week duration | 5/each | 01 | 5 | 05 |
| 5.B | Participation and Presentation of research papers (oral/poster) in | | | | |
| | a) International conference | 8 each | 05 | 40 | 40 |
| | b) National conference | 6/each | | | |
| | c) Regional/State level | 4/each | | | |
| | d) Local – University/College | 2/each | | | |
| 5.C | a) National level | 5/each | | | |
| | b) State level | 2/each | | | |
| Total Score | | 175 | | 85 | 85 |
| Minimum API Score Required | | 70 | | | |

*Wherever relevant to any specific discipline, the API score for paper in refereed journal would be augmented as follows: (i) indexed journals – by 5 points; (ii) papers with impact factor between 1 and 2 by 10 points; (iii) papers with impact factor between 2 and 5 by 15 points; (iv) papers with impact factor between 5 and 10 by 25 points.

** If a paper presented in Conference/Seminar is published in the form of Proceedings, the points would accrue for the publication (III (a)) and not under presentation (III (e)(ii)). Note: The API for joint publications will have to be calculated in the following manner: Of the total score for the relevant category of publication by the concerned teacher, the first/Principal author and the corresponding author/supervisor/mentor of the teacher would share equally 60% of the total points and the remaining 40% would be shared equally by all other authors.

# supporting documents, wherever required be attached.

| | Category I | Category II | Category III | Total Score |
|---|---|---|---|---|
| Total Score | 125 | 50 | 175 | 350 |
| Minimum API Score Required | 75 | 20 | 70 | 165 |
| Total Self-Assessment Score | 101 | 38 | 85 | 224 |
| Score by Screening/ selection committee | 97 | 38 | 85 | 220 |

Date: 14/09/2023
Place Satara

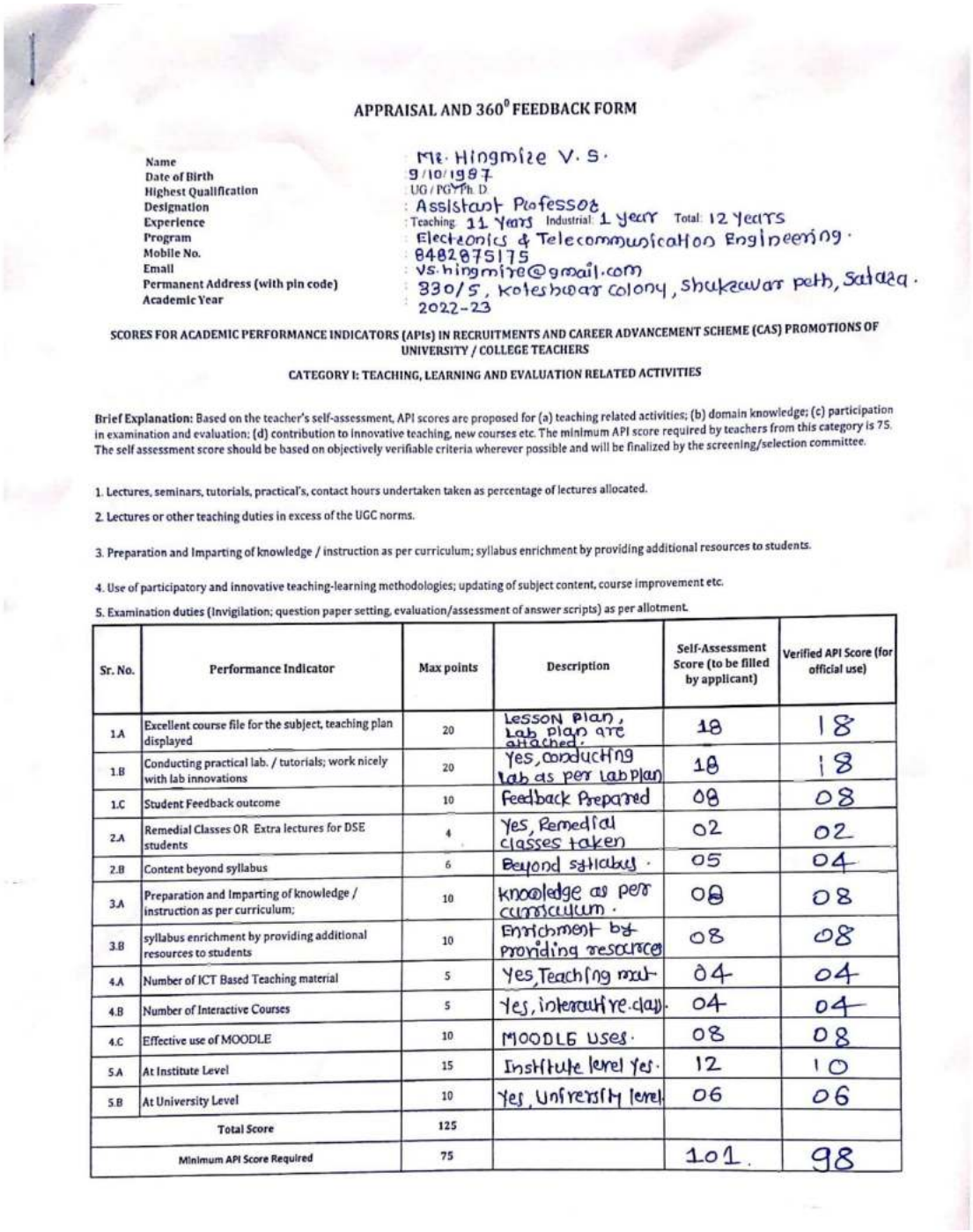
Signature of Faculty

Recommendation by screening team (Academic Monitoring Committee):

Excellent contribution in research

Member AMC Head of Department Registrar Principal

**Figure 5.8.1.a Performance Appraisal Form Page 4**



APPRAISAL AND 360° FEEDBACK FORM

| | |
|---|---|
| Name | Mr. Hingmire V. S. |
| Date of Birth | 9/10/1987 |
| Highest Qualification | UG / PG / Ph. D |
| Designation | Assistant Professor |
| Experience | Teaching: 11 Years Industrial: 1 year Total: 12 Years |
| Program | Electronics & Telecommunication Engineering. |
| Mobile No. | 8482875175 |
| Email | vs.hingmire@gmail.com |
| Permanent Address (with pin code) | 330/5, Koteshwar Colony, Shukrawar peth, Satara. |
| Academic Year | 2022-23 |

SCORES FOR ACADEMIC PERFORMANCE INDICATORS (APIs) IN RECRUITMENTS AND CAREER ADVANCEMENT SCHEME (CAS) PROMOTIONS OF UNIVERSITY / COLLEGE TEACHERS

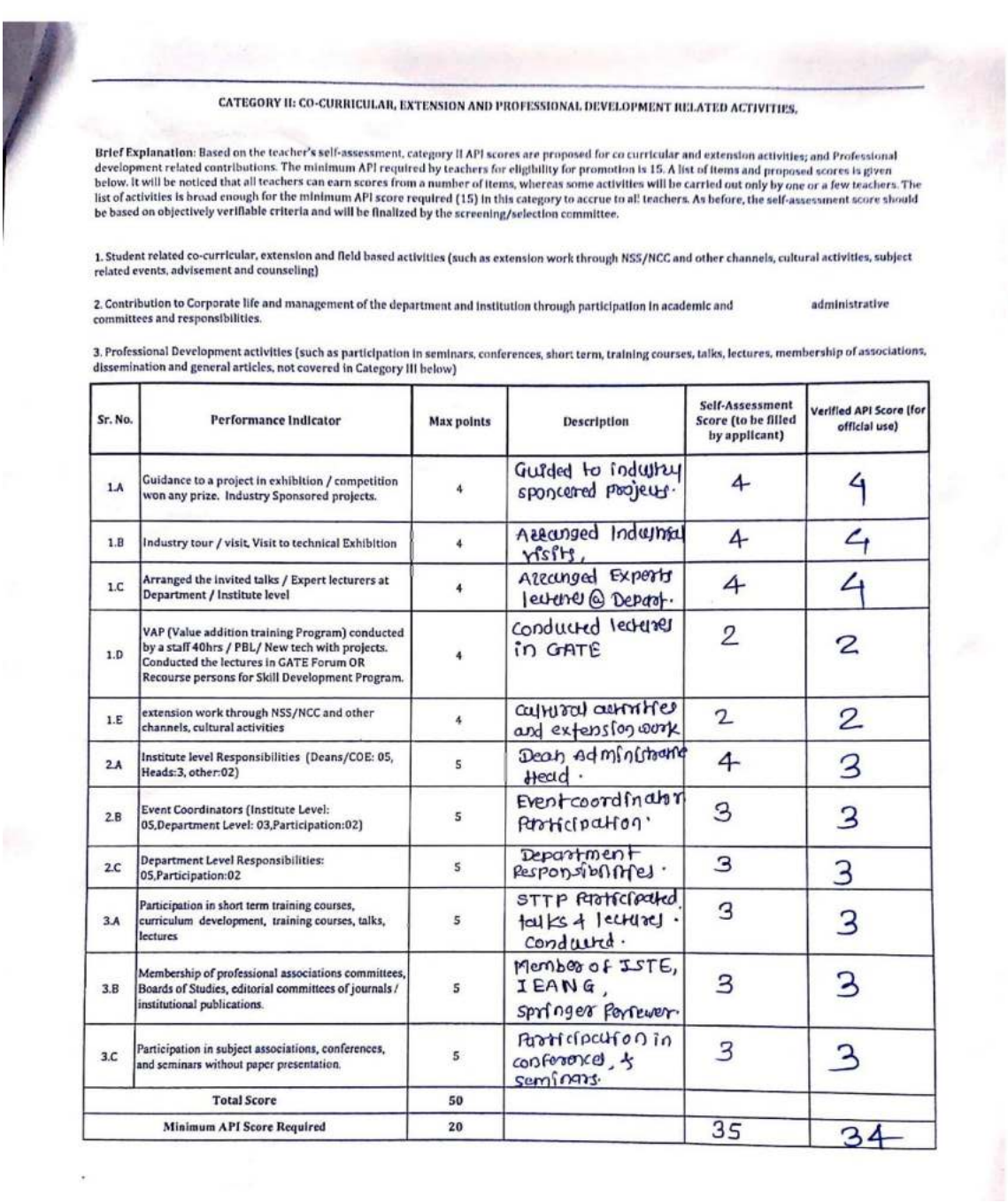
CATEGORY I: TEACHING, LEARNING AND EVALUATION RELATED ACTIVITIES

**Brief Explanation:** Based on the teacher's self-assessment, API scores are proposed for (a) teaching related activities; (b) domain knowledge; (c) participation in examination and evaluation; (d) contribution to innovative teaching, new courses etc. The minimum API score required by teachers from this category is 75. The self assessment score should be based on objectively verifiable criteria wherever possible and will be finalized by the screening/selection committee.

1. Lectures, seminars, tutorials, practical's, contact hours undertaken taken as percentage of lectures allocated.
2. Lectures or other teaching duties in excess of the UGC norms.
3. Preparation and Imparting of knowledge / instruction as per curriculum; syllabus enrichment by providing additional resources to students.
4. Use of participatory and innovative teaching-learning methodologies; updating of subject content, course improvement etc.
5. Examination duties (Invigilation; question paper setting, evaluation/assessment of answer scripts) as per allotment.

| Sr. No. | Performance Indicator | Max points | Description | Self-Assessment Score (to be filled by applicant) | Verified API Score (for official use) |
|---|---|---|---|---|---|
| 1.A | Excellent course file for the subject, teaching plan displayed | 20 | Lesson plan, Lab plan are attached. | 18 | 18 |
| 1.B | Conducting practical lab. / tutorials; work nicely with lab innovations | 20 | Yes, conducting lab as per lab plan | 18 | 18 |
| 1.C | Student Feedback outcome | 10 | Feedback Prepared | 08 | 08 |
| 2.A | Remedial Classes OR Extra lectures for DSE students | 4 | Yes, Remedial classes taken | 02 | 02 |
| 2.B | Content beyond syllabus | 6 | Beyond syllabus. | 05 | 04 |
| 3.A | Preparation and Imparting of knowledge / instruction as per curriculum; | 10 | knowledge as per curriculum. | 08 | 08 |
| 3.B | syllabus enrichment by providing additional resources to students | 10 | Enrichment by providing resource | 08 | 08 |
| 4.A | Number of ICT Based Teaching material | 5 | Yes, Teaching mat- | 04 | 04 |
| 4.B | Number of Interactive Courses | 5 | Yes, interactive.class. | 04 | 04 |
| 4.C | Effective use of MOODLE | 10 | MOODLE uses. | 08 | 08 |
| 5.A | At Institute Level | 15 | Institute level Yes. | 12 | 10 |
| 5.B | At University Level | 10 | Yes, University level | 06 | 06 |
| Total Score | | 125 | | | |
| Minimum API Score Required | | 75 | | 101. | 98 |

**Figure 5.8.1.b Performance Appraisal Form Page 1**



CATEGORY II: CO-CURRICULAR, EXTENSION AND PROFESSIONAL DEVELOPMENT RELATED ACTIVITIES.

**Brief Explanation:** Based on the teacher's self-assessment, category II API scores are proposed for co curricular and extension activities; and Professional development related contributions. The minimum API required by teachers for eligibility for promotion is 15. A list of items and proposed scores is given below. It will be noticed that all teachers can earn scores from a number of items, whereas some activities will be carried out only by one or a few teachers. The list of activities is broad enough for the minimum API score required (15) in this category to accrue to all teachers. As before, the self-assessment score should be based on objectively verifiable criteria and will be finalized by the screening/selection committee.

1. Student related co-curricular, extension and field based activities (such as extension work through NSS/NCC and other channels, cultural activities, subject related events, advisement and counseling)

2. Contribution to Corporate life and management of the department and institution through participation in academic and administrative committees and responsibilities.

3. Professional Development activities (such as participation in seminars, conferences, short term, training courses, talks, lectures, membership of associations, dissemination and general articles, not covered in Category III below)

| Sr. No. | Performance Indicator | Max points | Description | Self-Assessment Score (to be filled by applicant) | Verified API Score (for official use) |
|---|---|---|---|---|---|
| 1.A | Guidance to a project in exhibition / competition won any prize. Industry Sponsored projects. | 4 | Guided to industry sponcered projects. | 4 | 4 |
| 1.B | Industry tour / visit, Visit to technical Exhibition | 4 | Arranged Industrial visits, | 4 | 4 |
| 1.C | Arranged the invited talks / Expert lecturers at Department / Institute level | 4 | Arranged Experts lectures @ Depart. | 4 | 4 |
| 1.D | VAP (Value addition training Program) conducted by a staff 40hrs / PBL/ New tech with projects. Conducted the lectures in GATE Forum OR Recourse persons for Skill Development Program. | 4 | Conducted lectures in GATE | 2 | 2 |
| 1.E | extension work through NSS/NCC and other channels, cultural activities | 4 | cultural activities and extension work | 2 | 2 |
| 2.A | Institute level Responsibilities (Deans/COE: 05, Heads:3, other:02) | 5 | Dean Administrative Head. | 4 | 3 |
| 2.B | Event Coordinators (Institute Level: 05,Department Level: 03,Participation:02) | 5 | Event coordinator Participation. | 3 | 3 |
| 2.C | Department Level Responsibilities: 05,Participation:02 | 5 | Department Responsibilities. | 3 | 3 |
| 3.A | Participation in short term training courses, curriculum development, training courses, talks, lectures | 5 | STTP Participated talks & lectures. Conducted. | 3 | 3 |
| 3.B | Membership of professional associations committees, Boards of Studies, editorial committees of journals / institutional publications. | 5 | Member of ISTE, IEANG, Springer Forever. | 3 | 3 |
| 3.C | Participation in subject associations, conferences, and seminars without paper presentation. | 5 | Participation in conferences & seminars. | 3 | 3 |
| | **Total Score** | **50** | | | |
| | **Minimum API Score Required** | **20** | | 35 | 34 |



**Figure 5.8.2.b Performance Appraisal Form Page 2**

**CATEGORY-III: RESEARCH AND ACADEMIC CONTRIBUTIONS**

**Brief Explanation:** Based on the teacher's self-assessment, API scores are proposed for research and academic contributions. The minimum API score required by teachers from this category is different for different levels of promotion and between university and colleges. The self-assessment score will be based on verifiable criteria and will be finalized by the screening/selection committee.

1. Research Papers published in:
2. Research Publications(books, chapters in books, other than refereed journal articles)
3. RESEARCH PROJECTS
4. RESEARCH GUIDANCE
5. TRAINING COURSES AND CONFERENCE /SEMINAR/WORKSHOP PAPERS

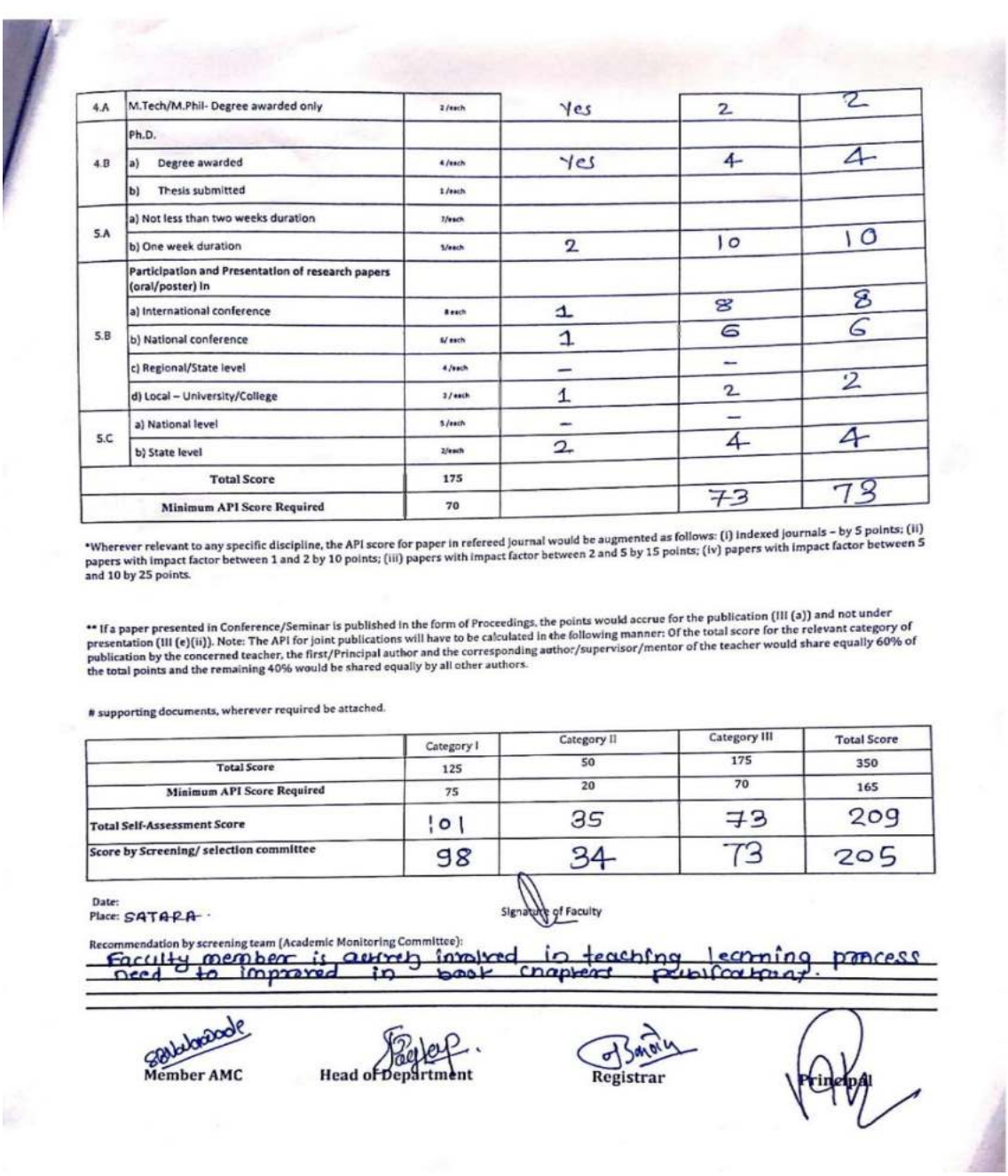
A. Refresher courses, Methodology workshops, Training, Teaching Learning Evaluation Technology Programs, Soft Skills development Program, Faculty Development Programs (Max: 30 points)

B. Papers in Conferences/ Seminars/ workshops etc.**

C. Invited lectures or presentations for conferences/ symposia

| Sr. No. | Performance Indicator | Max points | Description | Self-Assessment Score (to be filled by applicant) | Verified API Score (for official use) |
|---|---|---|---|---|---|
| 1.A | Refereed Journals * | 20/ 2 publication | 1 | 10 | 10 |
| 1.B | Non-refereed but recognized and reputable journals and periodicals, having ISBN/ISSN numbers | 10 / 2 Publication | – | – | – |
| 1.C | Conference proceedings as full papers, etc. (Abstracts not to be included) | 5/2 publication | 1 | 3 | 3 |
| 2.A | Text or Reference Books Published by International Publishers with an established peer review system | 20 /sole author; 5 /chapter in an edited book | – | – | – |
| 2.B | Subjects Books by National level publishers/State and Central Govt. Publications with ISBN/ISSN numbers. | 15/sole author, and 5/ chapter in edited books | – | – | – |
| 2.C | Subject Books by Other local publishers with ISBN/ISSN numbers. | 10/ sole author, and 2 / chapter in edited books | – | – | – |
| 2.D | Chapters contributed to edited knowledge based volumes published by International Publishers | 5/Chapter | – | – | – |
| 2.E | Chapters in knowledge based volumes by Indian/National level publishers with ISBN/ISSN numbers and with numbers of national and international directories | 3 / Chapter | – | – | — |
| 3.A | **Sponsored Projects carried out/ ongoing** | | | | |
| | a) Major Projects amount mobilized with grants in between Rs.10,000 to Rs.50,000/- | 10 /2 major project | 1 | 5 | 5 |
| | b) Minor Projects (Amount mobilized with grants upto Rs.10,000/- | 7 /2 minor Project | 1 | 3 | 3 |
| 3.B | **Consultancy Projects carried out / ongoing:** Amount mobilized with upto Rs.15,000/- | 10 consultancy | 1 | 10 | 10 |
| 3.C | **Completed projects Quality Evaluation:** Completed project Report(Acceptance from funding agency) | 7 /each major project and 5 /each minor project | 2 | 06 | 6 |
| 3.D | **Projects Outcome / Outputs:** Patent/Technology transfer/ Product/Process | 7 / each state level output or patent /14 /each for national level | – | – | – |

**Figure 5.8.3.b Performance Appraisal Form Page 3**



| | | | | | |
|---|---|---|---|---|---|
| 4.A | M.Tech/M.Phil- Degree awarded only | 2/each | Yes | 2 | 2 |
| 4.B | Ph.D. | | | | |
| | a) Degree awarded | 4/each | Yes | 4 | 4 |
| | b) Thesis submitted | 1/each | | | |
| 5.A | a) Not less than two weeks duration | 7/each | | | |
| | b) One week duration | 5/each | 2 | 10 | 10 |
| 5.B | Participation and Presentation of research papers (oral/poster) in | | | | |
| | a) International conference | 8 each | 1 | 8 | 8 |
| | b) National conference | 6/ each | 1 | 6 | 6 |
| | c) Regional/State level | 4/each | – | – | |
| | d) Local – University/College | 2/ each | 1 | 2 | 2 |
| 5.C | a) National level | 5/each | – | – | |
| | b) State level | 2/each | 2 | 4 | 4 |
| Total Score | | 175 | | | |
| Minimum API Score Required | | 70 | | 73 | 73 |

*Wherever relevant to any specific discipline, the API score for paper in refereed journal would be augmented as follows: (i) indexed journals – by 5 points; (ii) papers with impact factor between 1 and 2 by 10 points; (iii) papers with impact factor between 2 and 5 by 15 points; (iv) papers with impact factor between 5 and 10 by 25 points.

** If a paper presented in Conference/Seminar is published in the form of Proceedings, the points would accrue for the publication (III (a)) and not under presentation (III (e)(ii)). Note: The API for joint publications will have to be calculated in the following manner: Of the total score for the relevant category of publication by the concerned teacher, the first/Principal author and the corresponding author/supervisor/mentor of the teacher would share equally 60% of the total points and the remaining 40% would be shared equally by all other authors.

# supporting documents, wherever required be attached.

| | Category I | Category II | Category III | Total Score |
|---|---|---|---|---|
| Total Score | 125 | 50 | 175 | 350 |
| Minimum API Score Required | 75 | 20 | 70 | 165 |
| Total Self-Assessment Score | 101 | 35 | 73 | 209 |
| Score by Screening/ selection committee | 98 | 34 | 73 | 205 |

Date:
Place: SATARA

Signature of Faculty

Recommendation by screening team (Academic Monitoring Committee):
Faculty member is actively involved in teaching learning process need to improved in book chapters publications.

Member AMC | Head of Department | Registrar | Principal

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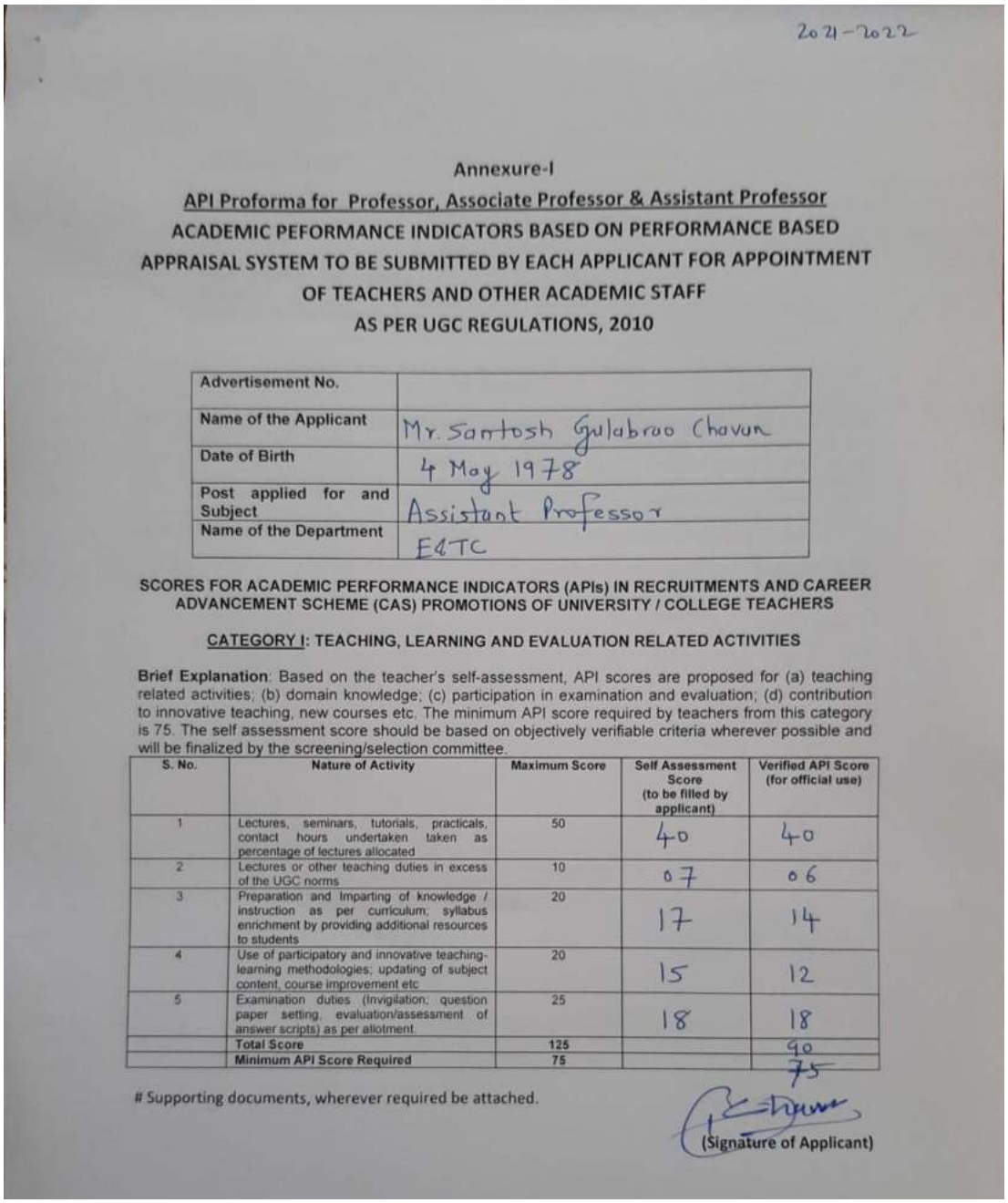
**Figure 5.8.4.b Performance Appraisal Form Page 4**

## Annual Self-assessment for the Performance-Based Appraisal System (PBAS) 2021 – 2022



2021-2022

Annexure-I

API Proforma for Professor, Associate Professor & Assistant Professor

ACADEMIC PEFORMANCE INDICATORS BASED ON PERFORMANCE BASED APPRAISAL SYSTEM TO BE SUBMITTED BY EACH APPLICANT FOR APPOINTMENT OF TEACHERS AND OTHER ACADEMIC STAFF AS PER UGC REGULATIONS, 2010

| | |
|---|---|
| Advertisement No. | |
| Name of the Applicant | Mr. Santosh Gulabrao Chavan |
| Date of Birth | 4 May 1978 |
| Post applied for and Subject | Assistant Professor |
| Name of the Department | E&TC |

SCORES FOR ACADEMIC PERFORMANCE INDICATORS (APIs) IN RECRUITMENTS AND CAREER ADVANCEMENT SCHEME (CAS) PROMOTIONS OF UNIVERSITY / COLLEGE TEACHERS

CATEGORY I: TEACHING, LEARNING AND EVALUATION RELATED ACTIVITIES

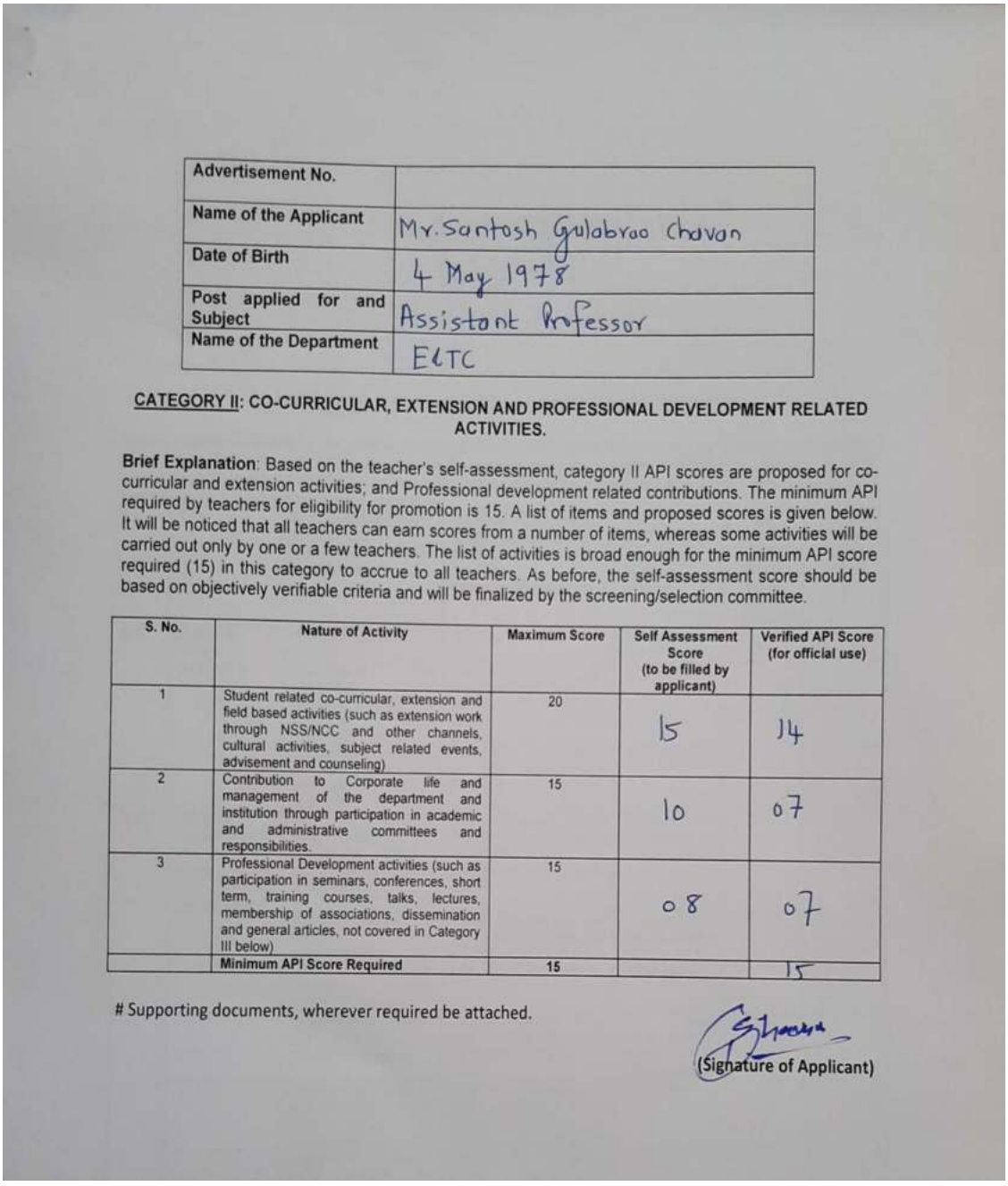
**Brief Explanation**: Based on the teacher's self-assessment, API scores are proposed for (a) teaching related activities; (b) domain knowledge; (c) participation in examination and evaluation; (d) contribution to innovative teaching, new courses etc. The minimum API score required by teachers from this category is 75. The self assessment score should be based on objectively verifiable criteria wherever possible and will be finalized by the screening/selection committee.

| S. No. | Nature of Activity | Maximum Score | Self Assessment Score (to be filled by applicant) | Verified API Score (for official use) |
|---|---|---|---|---|
| 1 | Lectures, seminars, tutorials, practicals, contact hours undertaken taken as percentage of lectures allocated | 50 | 40 | 40 |
| 2 | Lectures or other teaching duties in excess of the UGC norms | 10 | 07 | 06 |
| 3 | Preparation and Imparting of knowledge / instruction as per curriculum; syllabus enrichment by providing additional resources to students | 20 | 17 | 14 |
| 4 | Use of participatory and innovative teaching-learning methodologies; updating of subject content, course improvement etc | 20 | 15 | 12 |
| 5 | Examination duties (Invigilation; question paper setting, evaluation/assessment of answer scripts) as per allotment | 25 | 18 | 18 |
| | **Total Score** | **125** | | 90 |
| | **Minimum API Score Required** | **75** | | 75 |

# Supporting documents, wherever required be attached.

(Signature of Applicant)

**Figure 5.8.5 Performance Appraisal Form Page 1**



| | |
|---|---|
| Advertisement No. | |
| Name of the Applicant | Mr. Santosh Gulabrao Chavan |
| Date of Birth | 4 May 1978 |
| Post applied for and Subject | Assistant Professor |
| Name of the Department | E&TC |

**CATEGORY II: CO-CURRICULAR, EXTENSION AND PROFESSIONAL DEVELOPMENT RELATED ACTIVITIES.**

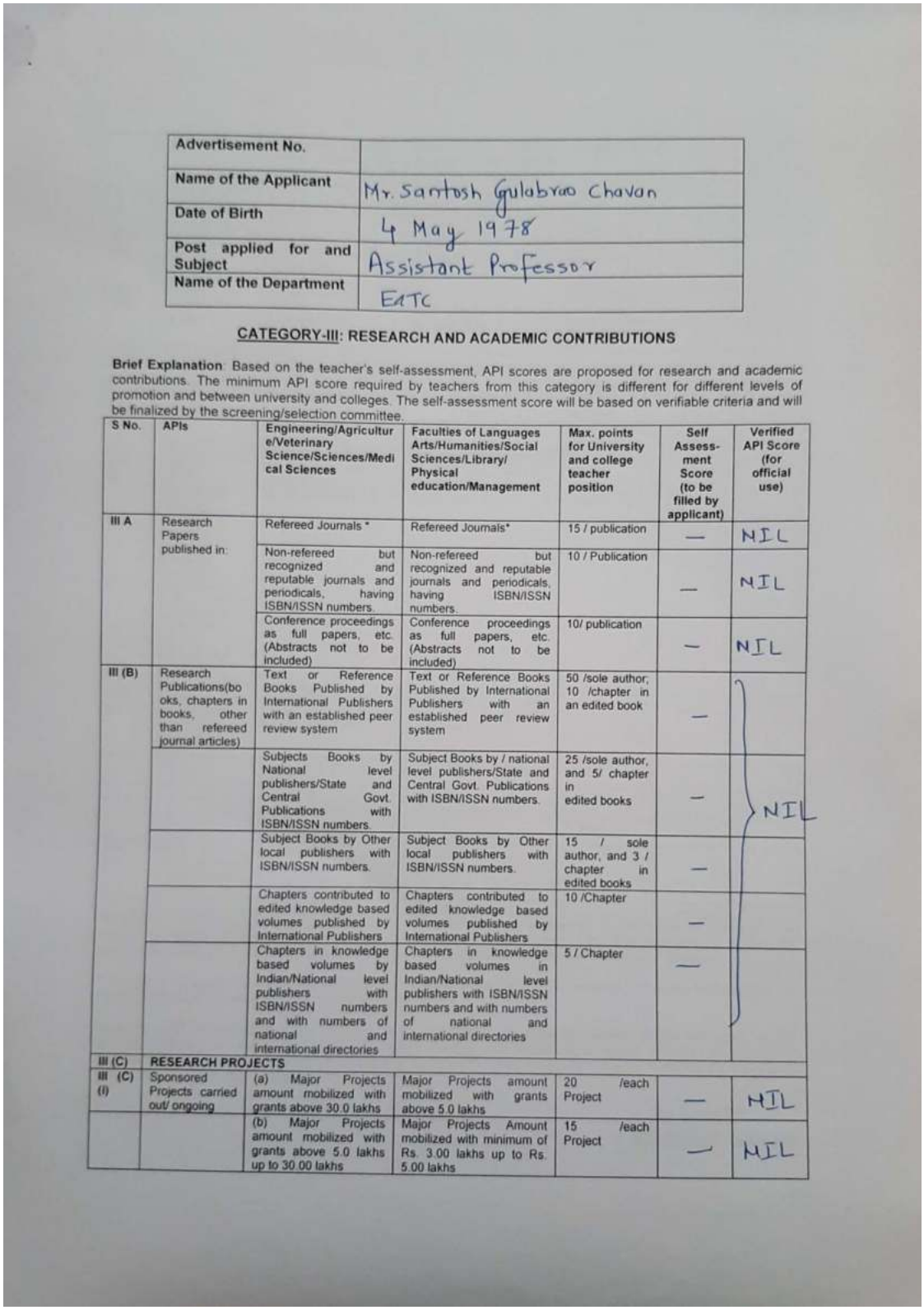
**Brief Explanation**: Based on the teacher's self-assessment, category II API scores are proposed for co-curricular and extension activities; and Professional development related contributions. The minimum API required by teachers for eligibility for promotion is 15. A list of items and proposed scores is given below. It will be noticed that all teachers can earn scores from a number of items, whereas some activities will be carried out only by one or a few teachers. The list of activities is broad enough for the minimum API score required (15) in this category to accrue to all teachers. As before, the self-assessment score should be based on objectively verifiable criteria and will be finalized by the screening/selection committee.

| S. No. | Nature of Activity | Maximum Score | Self Assessment Score (to be filled by applicant) | Verified API Score (for official use) |
|---|---|---|---|---|
| 1 | Student related co-curricular, extension and field based activities (such as extension work through NSS/NCC and other channels, cultural activities, subject related events, advisement and counseling) | 20 | 15 | 14 |
| 2 | Contribution to Corporate life and management of the department and institution through participation in academic and administrative committees and responsibilities. | 15 | 10 | 07 |
| 3 | Professional Development activities (such as participation in seminars, conferences, short term, training courses, talks, lectures, membership of associations, dissemination and general articles, not covered in Category III below) | 15 | 08 | 07 |
| | **Minimum API Score Required** | **15** | | 15 |

# Supporting documents, wherever required be attached.

(Signature of Applicant)

**Figure 5.8.6 Performance Appraisal Form Page 2**



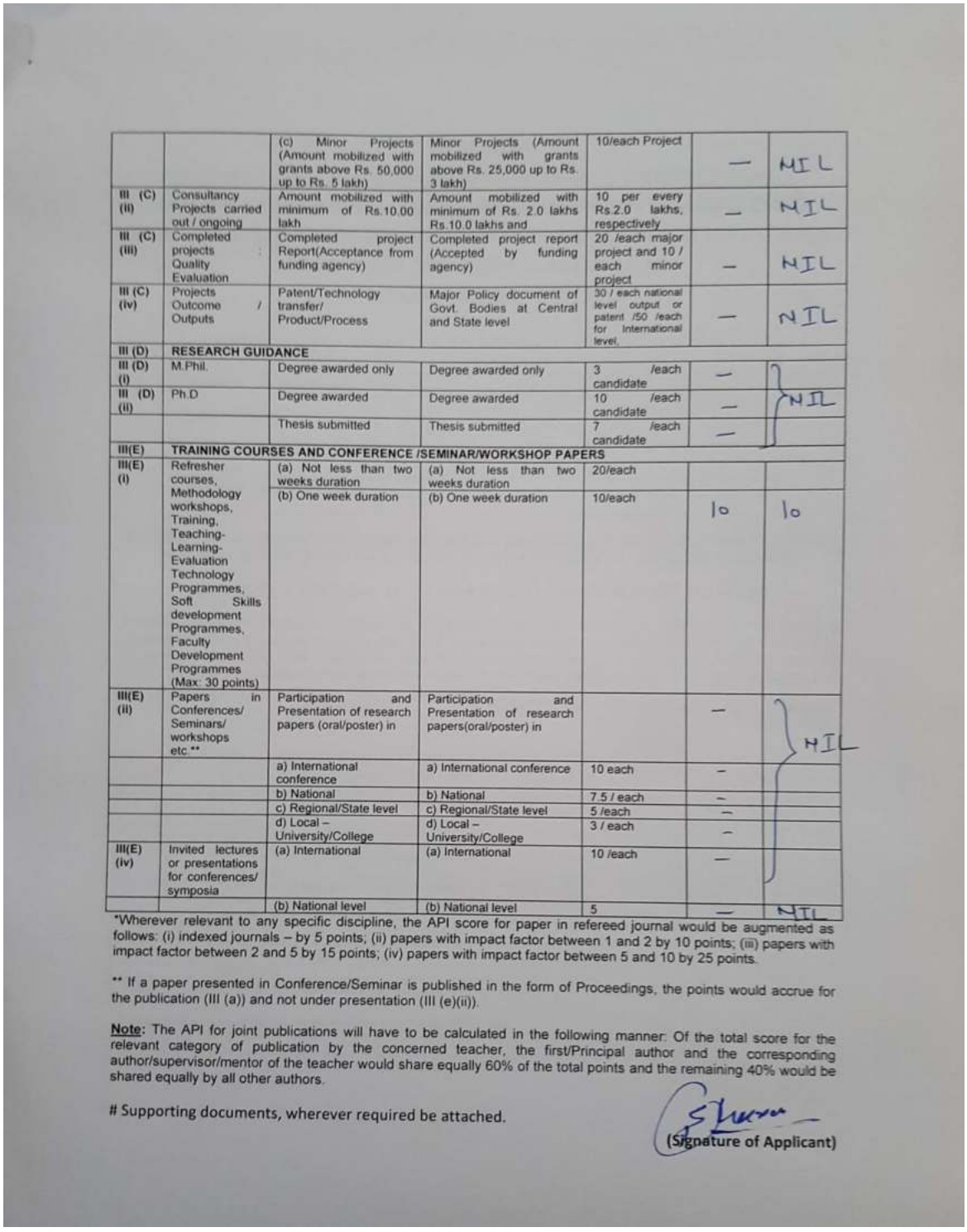
| | |
|---|---|
| Advertisement No. | |
| Name of the Applicant | Mr. Santosh Gulabrao Chavan |
| Date of Birth | 4 May 1978 |
| Post applied for and Subject | Assistant Professor |
| Name of the Department | E&TC |

**CATEGORY-III: RESEARCH AND ACADEMIC CONTRIBUTIONS**

**Brief Explanation**: Based on the teacher's self-assessment, API scores are proposed for research and academic contributions. The minimum API score required by teachers from this category is different for different levels of promotion and between university and colleges. The self-assessment score will be based on verifiable criteria and will be finalized by the screening/selection committee.

| S No. | APIs | Engineering/Agriculture/Veterinary Science/Sciences/Medical Sciences | Faculties of Languages Arts/Humanities/Social Sciences/Library/ Physical education/Management | Max. points for University and college teacher position | Self Assessment Score (to be filled by applicant) | Verified API Score (for official use) |
|---|---|---|---|---|---|---|
| III A | Research Papers published in: | Refereed Journals * | Refereed Journals* | 15 / publication | — | NIL |
| | | Non-refereed but recognized and reputable journals and periodicals, having ISBN/ISSN numbers. | Non-refereed but recognized and reputable journals and periodicals, having ISBN/ISSN numbers. | 10 / Publication | — | NIL |
| | | Conference proceedings as full papers, etc. (Abstracts not to be included) | Conference proceedings as full papers, etc. (Abstracts not to be included) | 10/ publication | — | NIL |
| III (B) | Research Publications(books, chapters in books, other than refereed journal articles) | Text or Reference Books Published by International Publishers with an established peer review system | Text or Reference Books Published by International Publishers with an established peer review system | 50 /sole author; 10 /chapter in an edited book | — | NIL |
| | | Subjects Books by National level publishers/State and Central Govt. Publications with ISBN/ISSN numbers. | Subject Books by / national level publishers/State and Central Govt. Publications with ISBN/ISSN numbers. | 25 /sole author, and 5/ chapter in edited books | — | |
| | | Subject Books by Other local publishers with ISBN/ISSN numbers. | Subject Books by Other local publishers with ISBN/ISSN numbers. | 15 / sole author, and 3 / chapter in edited books | — | |
| | | Chapters contributed to edited knowledge based volumes published by International Publishers | Chapters contributed to edited knowledge based volumes published by International Publishers | 10 /Chapter | — | |
| | | Chapters in knowledge based volumes by Indian/National level publishers with ISBN/ISSN numbers and with numbers of national and international directories | Chapters in knowledge based volumes in Indian/National level publishers with ISBN/ISSN numbers and with numbers of national and international directories | 5 / Chapter | — | |
| III (C) | RESEARCH PROJECTS | | | | | |
| III (C) (i) | Sponsored Projects carried out/ ongoing | (a) Major Projects amount mobilized with grants above 30.0 lakhs | Major Projects amount mobilized with grants above 5.0 lakhs | 20 /each Project | — | NIL |
| | | (b) Major Projects amount mobilized with grants above 5.0 lakhs up to 30.00 lakhs | Major Projects Amount mobilized with minimum of Rs. 3.00 lakhs up to Rs. 5.00 lakhs | 15 /each Project | — | NIL |

**Figure 5.8.7 Performance Appraisal Form Page 3**



| | | | | | | |
|---|---|---|---|---|---|---|
| | | (c) Minor Projects (Amount mobilized with grants above Rs. 50,000 up to Rs. 5 lakh) | Minor Projects (Amount mobilized with grants above Rs. 25,000 up to Rs. 3 lakh) | 10/each Project | — | NIL |
| III (C) (ii) | Consultancy Projects carried out / ongoing | Amount mobilized with minimum of Rs.10.00 lakh | Amount mobilized with minimum of Rs. 2.0 lakhs Rs.10.0 lakhs and | 10 per every Rs.2.0 lakhs, respectively | — | NIL |
| III (C) (iii) | Completed projects : Quality Evaluation | Completed project Report(Acceptance from funding agency) | Completed project report (Accepted by funding agency) | 20 /each major project and 10 / each minor project | — | NIL |
| III (C) (iv) | Projects Outcome / Outputs | Patent/Technology transfer/ Product/Process | Major Policy document of Govt. Bodies at Central and State level | 30 / each national level output or patent /50 /each for International level. | — | NIL |
| III (D) | RESEARCH GUIDANCE | | | | | |
| III (D) (i) | M.Phil. | Degree awarded only | Degree awarded only | 3 /each candidate | — | NIL |
| III (D) (ii) | Ph.D | Degree awarded | Degree awarded | 10 /each candidate | — | |
| | | Thesis submitted | Thesis submitted | 7 /each candidate | — | |
| III(E) | TRAINING COURSES AND CONFERENCE /SEMINAR/WORKSHOP PAPERS | | | | | |
| III(E) (i) | Refresher courses, Methodology workshops, Training, Teaching-Learning-Evaluation Technology Programmes, Soft Skills development Programmes, Faculty Development Programmes (Max: 30 points) | (a) Not less than two weeks duration | (a) Not less than two weeks duration | 20/each | | |
| | | (b) One week duration | (b) One week duration | 10/each | 10 | 10 |
| III(E) (ii) | Papers in Conferences/ Seminars/ workshops etc.** | Participation and Presentation of research papers (oral/poster) in | Participation and Presentation of research papers(oral/poster) in | | — | NIL |
| | | a) International conference | a) International conference | 10 each | — | |
| | | b) National | b) National | 7.5 / each | — | |
| | | c) Regional/State level | c) Regional/State level | 5 /each | — | |
| | | d) Local – University/College | d) Local – University/College | 3 / each | — | |
| III(E) (iv) | Invited lectures or presentations for conferences/ symposia | (a) International | (a) International | 10 /each | — | |
| | | (b) National level | (b) National level | 5 | — | NIL |

*Wherever relevant to any specific discipline, the API score for paper in refereed journal would be augmented as follows: (i) indexed journals – by 5 points; (ii) papers with impact factor between 1 and 2 by 10 points; (iii) papers with impact factor between 2 and 5 by 15 points; (iv) papers with impact factor between 5 and 10 by 25 points.

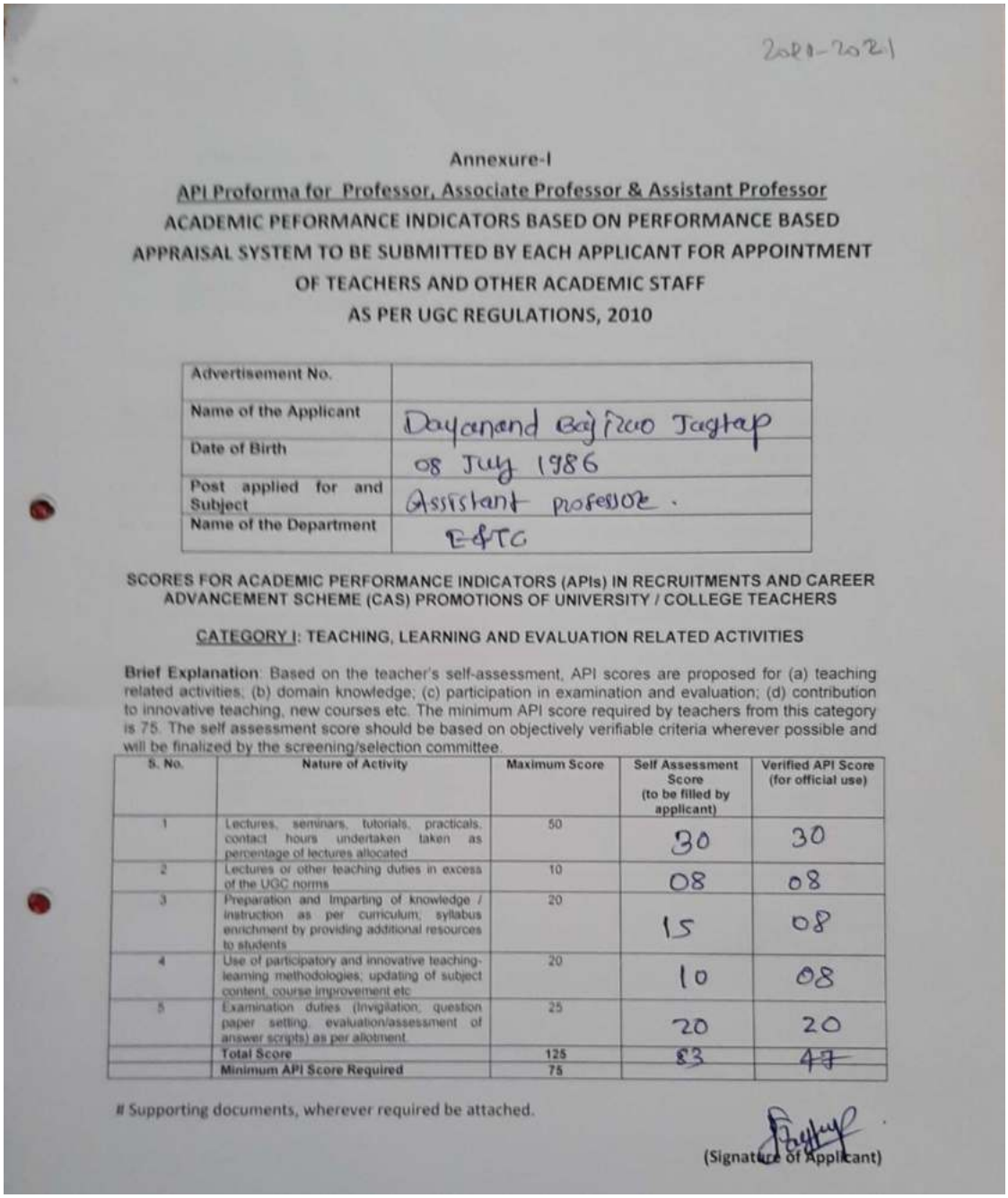
** If a paper presented in Conference/Seminar is published in the form of Proceedings, the points would accrue for the publication (III (a)) and not under presentation (III (e)(ii)).

**Note:** The API for joint publications will have to be calculated in the following manner: Of the total score for the relevant category of publication by the concerned teacher, the first/Principal author and the corresponding author/supervisor/mentor of the teacher would share equally 60% of the total points and the remaining 40% would be shared equally by all other authors.

# Supporting documents, wherever required be attached.

(Signature of Applicant)

**Figure 5.8.8 Performance Appraisal Form Page 4**



2020-2021

Annexure-I

API Proforma for Professor, Associate Professor & Assistant Professor

ACADEMIC PEFORMANCE INDICATORS BASED ON PERFORMANCE BASED APPRAISAL SYSTEM TO BE SUBMITTED BY EACH APPLICANT FOR APPOINTMENT OF TEACHERS AND OTHER ACADEMIC STAFF AS PER UGC REGULATIONS, 2010

| | |
|---|---|
| Advertisement No. | |
| Name of the Applicant | Dayanand Bajirao Jagtap |
| Date of Birth | 08 July 1986 |
| Post applied for and Subject | Assistant professor. |
| Name of the Department | E&TC |

SCORES FOR ACADEMIC PERFORMANCE INDICATORS (APIs) IN RECRUITMENTS AND CAREER ADVANCEMENT SCHEME (CAS) PROMOTIONS OF UNIVERSITY / COLLEGE TEACHERS

CATEGORY I: TEACHING, LEARNING AND EVALUATION RELATED ACTIVITIES

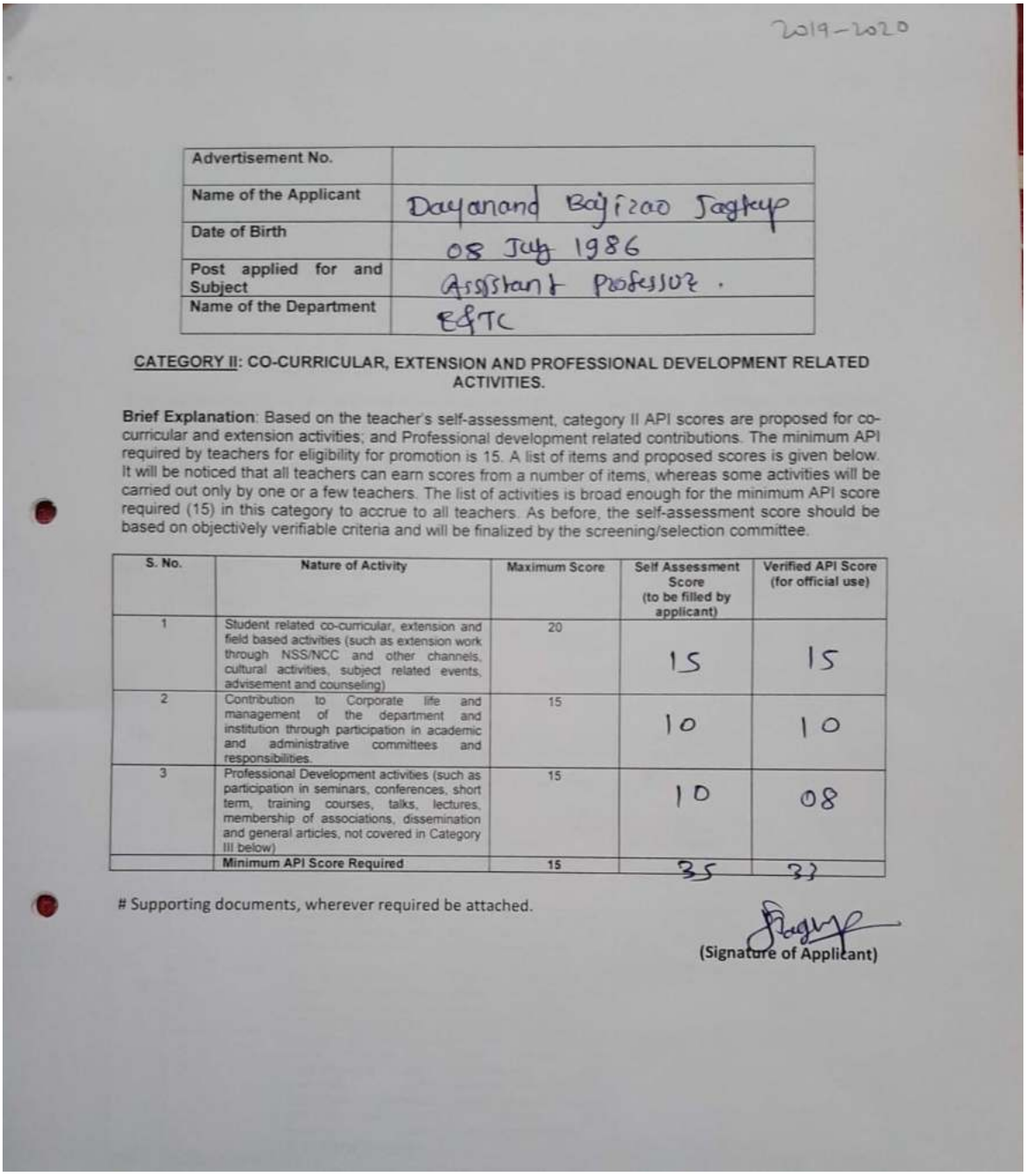
**Brief Explanation**: Based on the teacher's self-assessment, API scores are proposed for (a) teaching related activities; (b) domain knowledge; (c) participation in examination and evaluation; (d) contribution to innovative teaching, new courses etc. The minimum API score required by teachers from this category is 75. The self assessment score should be based on objectively verifiable criteria wherever possible and will be finalized by the screening/selection committee.

| S. No. | Nature of Activity | Maximum Score | Self Assessment Score (to be filled by applicant) | Verified API Score (for official use) |
|---|---|---|---|---|
| 1 | Lectures, seminars, tutorials, practicals, contact hours undertaken taken as percentage of lectures allocated | 50 | 30 | 30 |
| 2 | Lectures or other teaching duties in excess of the UGC norms | 10 | 08 | 08 |
| 3 | Preparation and Imparting of knowledge / instruction as per curriculum; syllabus enrichment by providing additional resources to students | 20 | 15 | 08 |
| 4 | Use of participatory and innovative teaching-learning methodologies; updating of subject content, course improvement etc | 20 | 10 | 08 |
| 5 | Examination duties (Invigilation; question paper setting, evaluation/assessment of answer scripts) as per allotment | 25 | 20 | 20 |
| | **Total Score** | 125 | 83 | ~~47~~ |
| | **Minimum API Score Required** | 75 | | |

# Supporting documents, wherever required be attached.

(Signature of Applicant)

**Figure 5.8.9 Performance Appraisal Form Page 1**



2019-2020

| | |
|---|---|
| Advertisement No. | |
| Name of the Applicant | Dayanand Bajirao Jagtap |
| Date of Birth | 08 July 1986 |
| Post applied for and Subject | Assistant Professor. |
| Name of the Department | E&TC |

**CATEGORY II: CO-CURRICULAR, EXTENSION AND PROFESSIONAL DEVELOPMENT RELATED ACTIVITIES.**

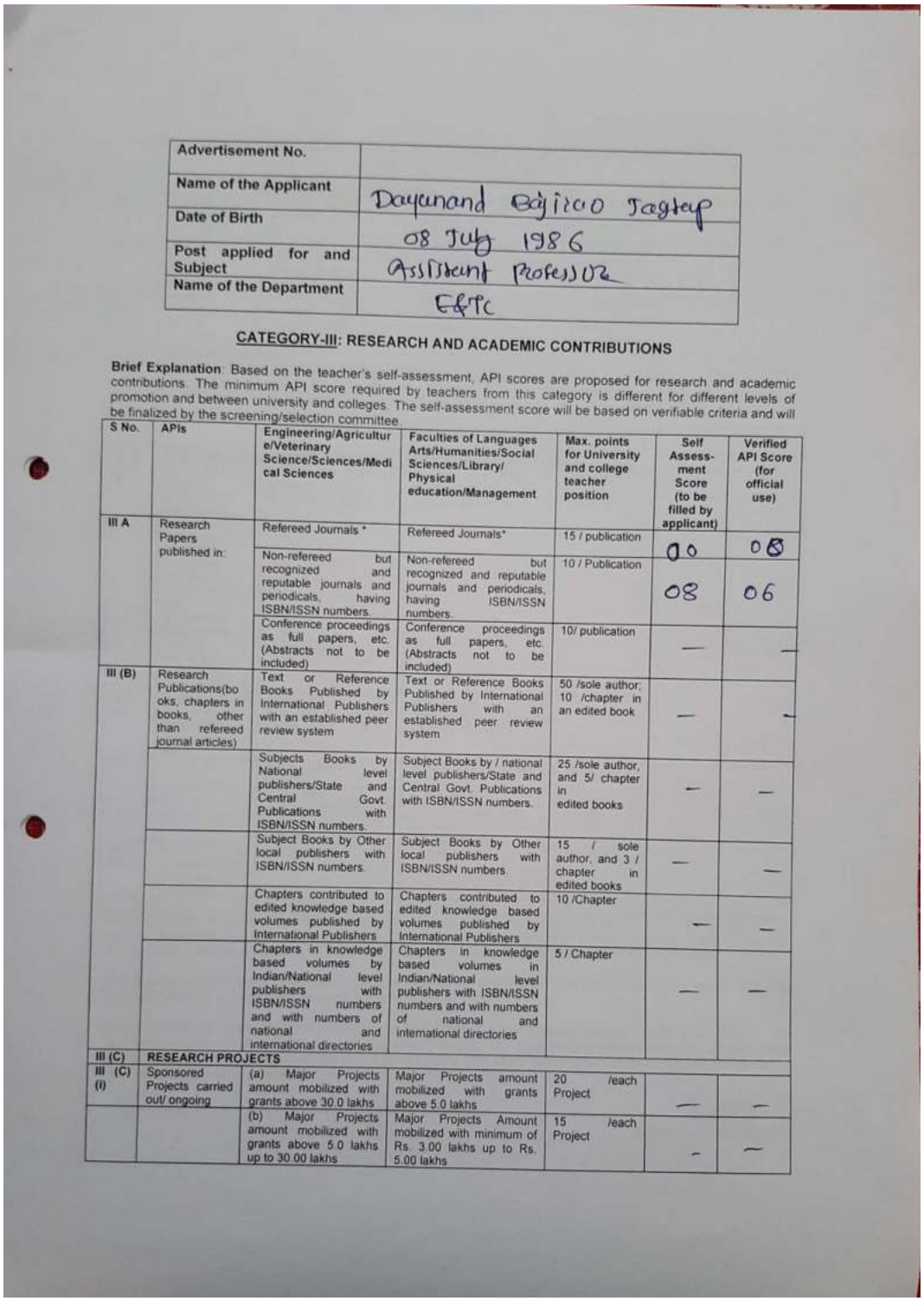
**Brief Explanation**: Based on the teacher's self-assessment, category II API scores are proposed for co-curricular and extension activities; and Professional development related contributions. The minimum API required by teachers for eligibility for promotion is 15. A list of items and proposed scores is given below. It will be noticed that all teachers can earn scores from a number of items, whereas some activities will be carried out only by one or a few teachers. The list of activities is broad enough for the minimum API score required (15) in this category to accrue to all teachers. As before, the self-assessment score should be based on objectively verifiable criteria and will be finalized by the screening/selection committee.

| S. No. | Nature of Activity | Maximum Score | Self Assessment Score (to be filled by applicant) | Verified API Score (for official use) |
|---|---|---|---|---|
| 1 | Student related co-curricular, extension and field based activities (such as extension work through NSS/NCC and other channels, cultural activities, subject related events, advisement and counseling) | 20 | 15 | 15 |
| 2 | Contribution to Corporate life and management of the department and institution through participation in academic and administrative committees and responsibilities. | 15 | 10 | 10 |
| 3 | Professional Development activities (such as participation in seminars, conferences, short term, training courses, talks, lectures, membership of associations, dissemination and general articles, not covered in Category III below) | 15 | 10 | 08 |
| | **Minimum API Score Required** | **15** | 35 | 33 |

# Supporting documents, wherever required be attached.

(Signature of Applicant)

**Figure 5.8.10 Performance Appraisal Form Page 2**



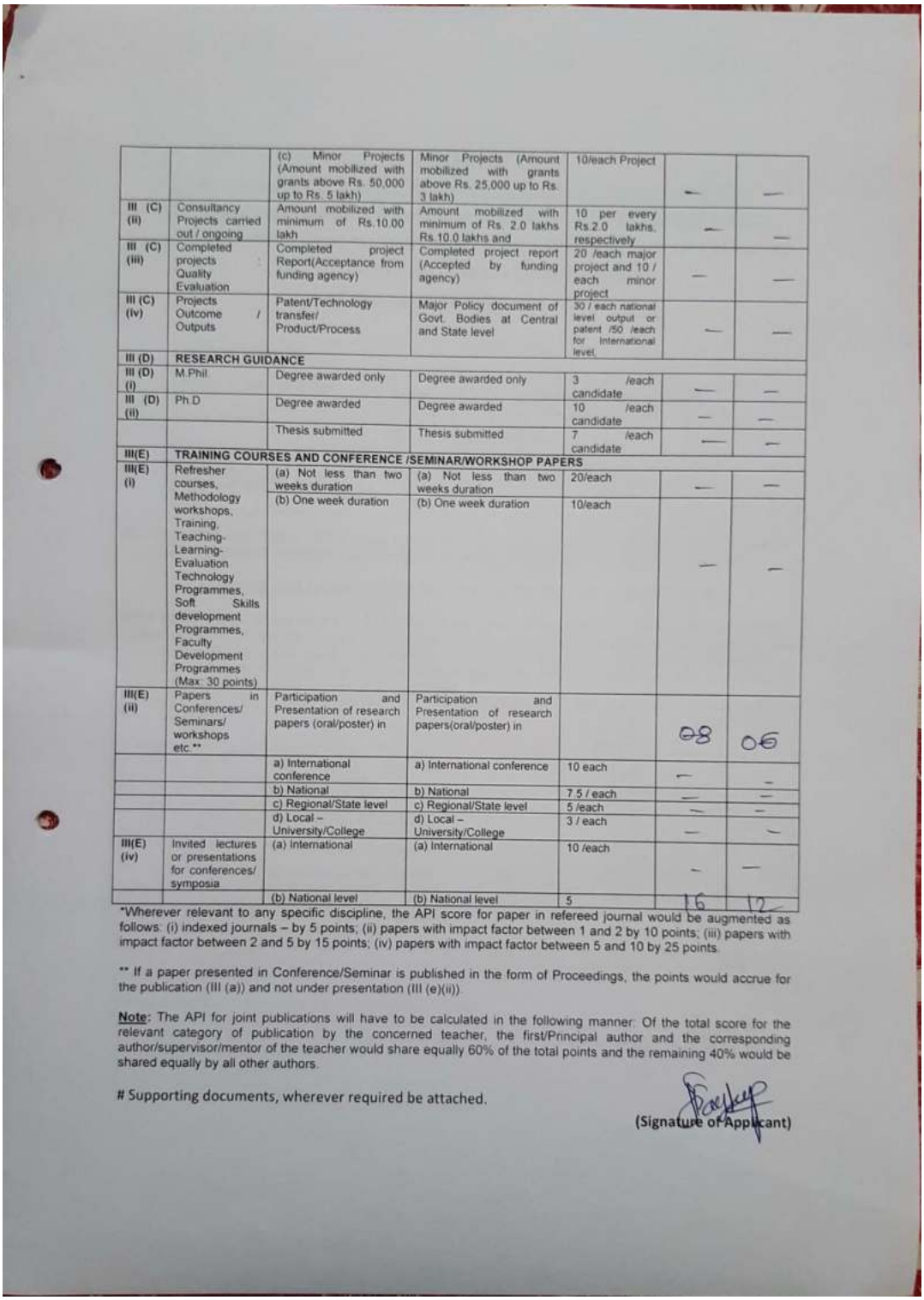
| | |
|---|---|
| Advertisement No. | |
| Name of the Applicant | Dayanand Bajirao Jagtap |
| Date of Birth | 08 July 1986 |
| Post applied for and Subject | Assistant Professor |
| Name of the Department | E&TC |

**CATEGORY-III: RESEARCH AND ACADEMIC CONTRIBUTIONS**

**Brief Explanation**: Based on the teacher's self-assessment, API scores are proposed for research and academic contributions. The minimum API score required by teachers from this category is different for different levels of promotion and between university and colleges. The self-assessment score will be based on verifiable criteria and will be finalized by the screening/selection committee.

| S No. | APIs | Engineering/Agriculture/Veterinary Science/Sciences/Medical Sciences | Faculties of Languages Arts/Humanities/Social Sciences/Library/ Physical education/Management | Max. points for University and college teacher position | Self Assessment Score (to be filled by applicant) | Verified API Score (for official use) |
|---|---|---|---|---|---|---|
| III A | Research Papers published in: | Refereed Journals * | Refereed Journals* | 15 / publication | 00 | 08 |
| | | Non-refereed but recognized and reputable journals and periodicals, having ISBN/ISSN numbers. | Non-refereed but recognized and reputable journals and periodicals, having ISBN/ISSN numbers. | 10 / Publication | 08 | 06 |
| | | Conference proceedings as full papers, etc. (Abstracts not to be included) | Conference proceedings as full papers, etc. (Abstracts not to be included) | 10/ publication | — | — |
| III (B) | Research Publications(books, chapters in books, other than refereed journal articles) | Text or Reference Books Published by International Publishers with an established peer review system | Text or Reference Books Published by International Publishers with an established peer review system | 50 /sole author; 10 /chapter in an edited book | — | — |
| | | Subjects Books by National level publishers/State and Central Govt. Publications with ISBN/ISSN numbers. | Subject Books by / national level publishers/State and Central Govt. Publications with ISBN/ISSN numbers. | 25 /sole author, and 5/ chapter in edited books | — | — |
| | | Subject Books by Other local publishers with ISBN/ISSN numbers. | Subject Books by Other local publishers with ISBN/ISSN numbers. | 15 / sole author, and 3 / chapter in edited books | — | — |
| | | Chapters contributed to edited knowledge based volumes published by International Publishers | Chapters contributed to edited knowledge based volumes published by International Publishers | 10 /Chapter | — | — |
| | | Chapters in knowledge based volumes by Indian/National level publishers with ISBN/ISSN numbers and with numbers of national and international directories | Chapters in knowledge based volumes in Indian/National level publishers with ISBN/ISSN numbers and with numbers of national and international directories | 5 / Chapter | — | — |
| III (C) | RESEARCH PROJECTS | | | | | |
| III (C) (i) | Sponsored Projects carried out/ ongoing | (a) Major Projects amount mobilized with grants above 30.0 lakhs | Major Projects amount mobilized with grants above 5.0 lakhs | 20 /each Project | — | — |
| | | (b) Major Projects amount mobilized with grants above 5.0 lakhs up to 30.00 lakhs | Major Projects Amount mobilized with minimum of Rs. 3.00 lakhs up to Rs. 5.00 lakhs | 15 /each Project | - | — |

**Figure 5.8.11 Performance Appraisal Form Page 3**



| | | | | | | |
|---|---|---|---|---|---|---|
| | | (c) Minor Projects (Amount mobilized with grants above Rs. 50,000 up to Rs. 5 lakh) | Minor Projects (Amount mobilized with grants above Rs. 25,000 up to Rs. 3 lakh) | 10/each Project | | |
| III (C) (ii) | Consultancy Projects carried out / ongoing | Amount mobilized with minimum of Rs.10.00 lakh | Amount mobilized with minimum of Rs. 2.0 lakhs Rs.10.0 lakhs and | 10 per every Rs.2.0 lakhs, respectively | — | — |
| III (C) (iii) | Completed projects Quality Evaluation | Completed project Report(Acceptance from funding agency) | Completed project report (Accepted by funding agency) | 20 /each major project and 10 / each minor project | — | — |
| III (C) (iv) | Projects Outcome / Outputs | Patent/Technology transfer/ Product/Process | Major Policy document of Govt. Bodies at Central and State level | 30 / each national level output or patent /50 /each for International level. | — | — |
| III (D) | RESEARCH GUIDANCE | | | | | |
| III (D) (i) | M.Phil | Degree awarded only | Degree awarded only | 3 /each candidate | — | — |
| III (D) (ii) | Ph.D | Degree awarded | Degree awarded | 10 /each candidate | — | — |
| | | Thesis submitted | Thesis submitted | 7 /each candidate | — | — |
| III(E) | TRAINING COURSES AND CONFERENCE /SEMINAR/WORKSHOP PAPERS | | | | | |
| III(E) (i) | Refresher courses, Methodology workshops, Training, Teaching-Learning-Evaluation Technology Programmes, Soft Skills development Programmes, Faculty Development Programmes (Max: 30 points) | (a) Not less than two weeks duration | (a) Not less than two weeks duration | 20/each | — | — |
| | | (b) One week duration | (b) One week duration | 10/each | | |
| III(E) (ii) | Papers in Conferences/ Seminars/ workshops etc.** | Participation and Presentation of research papers (oral/poster) in | Participation and Presentation of research papers(oral/poster) in | | 08 | 06 |
| | | a) International conference | a) International conference | 10 each | — | — |
| | | b) National | b) National | 7.5 / each | — | — |
| | | c) Regional/State level | c) Regional/State level | 5 /each | — | — |
| | | d) Local – University/College | d) Local – University/College | 3 / each | — | — |
| III(E) (iv) | Invited lectures or presentations for conferences/ symposia | (a) International | (a) International | 10 /each | — | — |
| | | (b) National level | (b) National level | 5 | 16 | 12 |

*Wherever relevant to any specific discipline, the API score for paper in refereed journal would be augmented as follows: (i) indexed journals – by 5 points; (ii) papers with impact factor between 1 and 2 by 10 points; (iii) papers with impact factor between 2 and 5 by 15 points; (iv) papers with impact factor between 5 and 10 by 25 points.

** If a paper presented in Conference/Seminar is published in the form of Proceedings, the points would accrue for the publication (III (a)) and not under presentation (III (e)(ii)).

**Note:** The API for joint publications will have to be calculated in the following manner: Of the total score for the relevant category of publication by the concerned teacher, the first/Principal author and the corresponding author/supervisor/mentor of the teacher would share equally 60% of the total points and the remaining 40% would be shared equally by all other authors.

# Supporting documents, wherever required be attached.

(Signature of Applicant)

**Figure 5.8.12 Performance Appraisal Form Page 4**

| | | |
|---|---|---|
| **CRITERION 06** | **Facilities and Technical Support** | **80** |

### 6.1 Adequate and well-equipped laboratories, and technical manpower (30)

E&TC Engineering Department provides adequate & well-equipped laboratories & technical manpower as per the norms. Some major equipment in each laboratories mentioned in table no. 6.1 & also mentioned technical staffs details

**Table 6.1: Details of Laboratories, Equipment and Technical Manpower**

| S. N | Name of the Laboratory | No. of students per setup (Batch Size) | Name of the Important equipment | Weekly utilization status | Name of the technical staff | Technical Manpower support | |
|---|---|---|---|---|---|---|---|
| | | | | | | Designation | Qualification |
| 1 | ALEXANDER GRAHAM BELL(PW 213)<br>[Communication & Measurement Lab] | 20 | 1. Single power supply<br>2. Function generator<br>3. Spectrum Analyzer<br>4. Digital Storage Oscilloscope<br>5. Dual trace CRO<br>6. Project Board<br>7. Temp. Transducer Kit<br>8. Strain Gauge Kit<br>9. Wein Bridge Kit<br>10. AM/FM trans Receiver<br>11. PAM<br>12. DCL03 TDM PCM kit<br>13. ADCL07 DPCM & ADPCM kit<br>14.AM MOD/ DEMOD<br>15.Fiber Optic Kit | 24 Hrs. | Mrs. A.S. Patel | Laboratory Assistant | Diploma (E&TC) |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2 | HEINRICH HERTZ (PW 210) [Antenna Wave Propagation & Microwave Engineering Lab] | 20 | 1. Ats Antenna Trainer Rt Radar Trainer<br>2. Advanced Motorized Antenna Trainer<br>3. Microwave Test Bench | 24 Hrs. | Miss. Y.Z. Mujawar | Laboratory Assistant | Diploma (E&TC) |
| 3 | ROBERT ALLEN PEASE(PW 208) [Basic Electronics Lab] | 20 | 1.20Mhz Dual Trace CRO<br>2.1MHz Function Generator<br>3.3MHz Function Generator<br>4.10 MHz Function Gen<br>5. Digital Multimeter<br>6. LCR Meter<br>7. FPGA CPLD Trainer Kit<br>8.LPC 2148 RTOS | 24 Hrs. | Mrs. A.S. Patel | Laboratory Assistant | Diploma (E&TC) |
| 4 | SALLY JEAN FLOYD(PW 211) [Simulation Lab] | 20 | 1. Desktop Switch<br>2. PC | 24Hrs. | Miss. G.P. Pawar | Laboratory Assistant | B.com |
| 5 | ROBERT NOYCE (PW 209) [Digital Electronics &Microprocessor Lab] | 20 | 1.30MH Dual Trace CRO<br>2. Digital Lab Trainer Kit<br>3. 20 MHZ CRO<br>4. 3MHZ Function Generator<br>5. 8085 Microprocessor kit<br>6. Stepper Motor Kit | 24Hrs. | Miss. Y.Z. Mujawar | Laboratory Assistant | Diploma (E&TC) |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 6 | ROBERT ALLEN PEASE(PW208) [Electronic Devices and Circuits Lab] | 20 | 1. Single Power Supply<br>2. Function Generator<br>3. Cathode Ray Oscilloscope<br>4. Digital Storage Oscilloscope<br>5. Colour TV Trainer | 24Hr. | Miss. G.P. Pawar | Laboratory Assistant | Diploma (E&TC) |

**6.4 Project Laboratories (05)**

The ground floor and Basement are dedicated spaces allotted for project work with basic manufacturing facilities. Following are the lab-wise facilities available for project work which ensures felicitation of project stages like design, manufacturing, and testing.

- Technical support for the students is available throughout the day.
- All labs are open for the students to completion of their projects throughout the day.
- MOU with industries to support students

The Electronics and Communication department has a project laboratory with adequate facilities to help graduate students to complete their project design and fabrication. The project/Research lab is exclusively for the research and project work with the hardware and software facilities listed below.

| Sr. No. | Name of the Facilities | Utilization |
|---|---|---|
| 1. | Project Laboratory (APJ Abdul Kalam) | UG students and Faculty members utilize them for their mini projects, major projects, and research activities. |

**Project Lab Utilization:**

- Project labs are utilized for project work by students.
- The students utilize the lab facility for development of mini and major projects
- In the free time the students utilize the lab facilities for surfing on internet to gain new knowledge, ideas regarding project work.

**Fig.6.3. a Project Demonstration**

| | | |
|---|---|---|
| **CRITERION 07** | **Continuous Improvement** | **50** |

## 7.1 Actions taken based on the results of evaluation of each of the POs & PSOs (20)

**POs and PSOs Attainment Levels and Actions for improvement: 2021-22**

| PO/PSO | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | PSO 1 | PSO 2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Target** | **2.2** | **2** | **2.1** | **1.7** | **2** | **1.9** | **1.6** | **2.1** | **2.1** | **2.2** | **1.6** | **1.8** | **1.92** | **1.68** |
| **Attainment** | 2.52 | 2.45 | 2.38 | 2.33 | 2.42 | 2.56 | 2.19 | 2.21 | 2.32 | 2.26 | 2.21 | 2.31 | 2.44 | 2.34 |

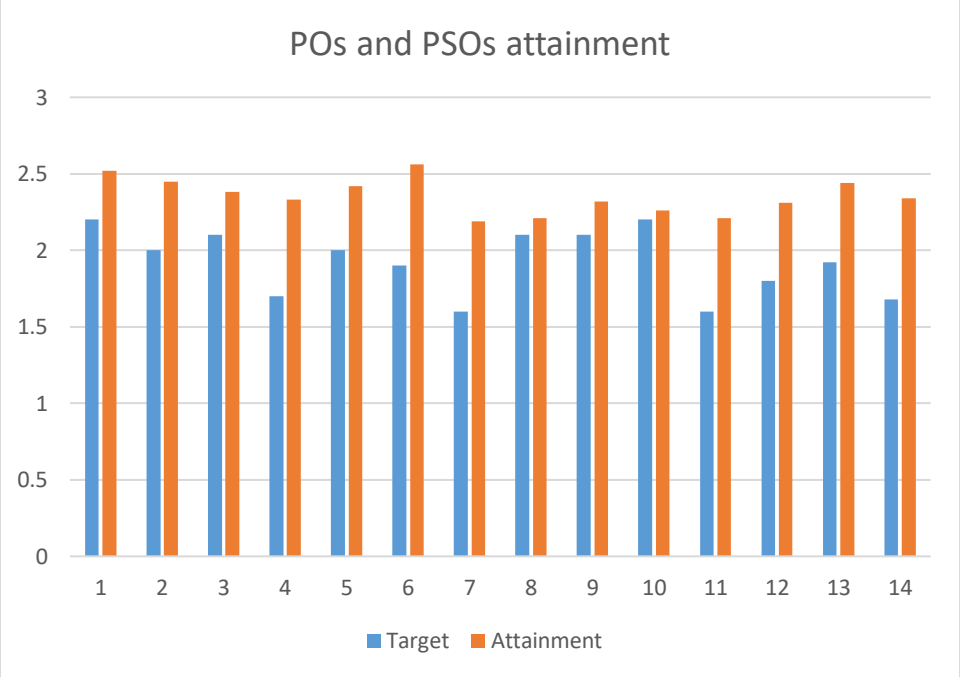



**Figure. 7.1 a PO Target vs. PO Attainment for year 2022-23**

| PO's | Target Level | Attainment Level | Observations |
|---|---|---|---|
| **PO1: Engineering knowledge:** Apply knowledge of mathematics, science and engineering to solve engineering problems | | | |
| PO1 | 2.2 | 2.52 | • Target achieved.<br>Due to knowledge of engineering fundamental concepts and problem solving. |
| **Action 1:** Separate class is arranged for all direct entry students to cover entire syllabus from starting with prerequisites.<br>**Action 2:** More emphasis given on assignment solving.<br>**Action 3:** Efforts taken for slow and advanced learner**.** | | | |
| **PO2: Problem analysis:** Identify, formulate and analyze engineering problems | | | |
| PO2 | 2.00 | 2.45 | • Target achieved.<br>Electronics and telecommunication Engineering students obtain problem solving and analyzing skills through various basic courses like Engineering Mathematics III, Network analysis, Signal and system, Probability random process , Electromagnetic Field Theory etc. |
| **Action 1**: Incorporation of more numerical problems in tutorials<br>**Action 2:** Various E-Resources on problem solving has been recommended.<br>**Action 3:** Students are asked to solve different numerical assignments to identify, formulate and analyze engineering problems. | | | |
| **PO3: Design/development of solutions:** Design and develop solution for systems or processes that meet the specified needs for health & safety, cultural, societal and environmental considerations | | | |
| PO3 | 2.01 | 2.38 | Target achieved.<br>• Projects developed by students were havingconsideration for safety, environmental and social concerns. Audit Course like (Basic Human Rights) cover specific needs for health & safety, cultural, societal and environmental considerations. |
| **Action 1:** Students were motivated to implement solutions for public health and safety.<br>**Action 2:** Guest lectures were arranged on topics like Automation, IOT considering public health, safety, societal, and environmental issues.<br>**Action 3:** NSS organizes regularly various events such as PUC camp, Women's Safety measure workshop, traffic awareness program. Geo tagging .etc. | | | |

| | | | |
|---|---|---|---|
| **PO4: Conduct investigations of problems:** Design and Conduct experiments as well as to analyze and interpret data to provide valid conclusions | | | |
| PO4 | 1.7 | 2.33 | Target achieved.<br>• Problem Statements of Project undertaken are based on complex problems. Exposure of complex problem |
| | | | Analysis is given. |
| **Action 1:** Guest lectures or hands on session can be conducted to improve knowledge to analyze problems.<br>**Action 2**: Technical events are organized in order to develop skills on solving real world problems (Hackathons, Project Competition etc. are organized). | | | |
| **PO5: Modern Tool Usage** | | | |
| PO5 | 2.00 | 2.42 | Target achieved.<br>Curriculum focuses on use more modern technical tools like Python, Embedded, VLSI etc. |
| **Action 1:** Online Guest lecture on Software arranged & online IOT lecture conducted.<br>**Action 2:**Development All faculty members of department focusing on utilizing digital modern tools for effective teaching which includes online expert/industrial talks, spoken tutorial, virtual labs, MOOC courses like NPTEL, Coursera etc.<br>**Action 3:** Hands-on session can be conducted to learn new tools.<br>**Action 4**: Industrial visit, field visit & Industrial training/Internship conducted for exposure to the usage of modern tools. | | | |
| **PO6: The engineer and society:** Apply the broad education necessary to understand the impact of engineering solutions in a global, economic and societal context | | | |
| PO6 | 1.9 | 2.56 | Target achieved<br>• Ability to apply engineering practices |
| **Action 1**: Students are encouraged to do more society needed projects. Projects based on environment, health care issues was emphasized<br>**Action 2**: Students are encouraged to participate in societal activities through NSS, Blood Donation Camps and other Student Clubs to understand the problems in the society.<br>**Action 3**: More emphasis on Courses like Basic Human Rights, Community Services / Projects & Environmental science to enrich their understanding of the societal needs and Responsibilities. | | | |
| **PO7: Environment and sustainability:** Understand the impact of engineering solutionsin environmental contexts and demonstrate the need of sustainable development. | | | |

| | | | |
|---|---|---|---|
| PO7 | 1.6 | 2.19 | Target is achieved<br>• Through various activities. |
| **Action 1:** Different initiatives such as tree plantation, no vehicle day, PUC camp organized.<br>**Action 2**: Promoted paperless work through online submission to MOODLE and use of one sided paper for notices on notices board etc.<br>**Action 3:** Students are encouraged to select their projects to reduce environmental impact by conserving energy, environmental friendly fluids / processes for sustainable Environment. | | | |
| **PO8: Ethics:** Carry out professional and ethical responsibility. | | | |

| | | | |
|---|---|---|---|
| PO8 | 2.1 | 2.21 | Target achieved.<br>University curriculum has less inclusion of courses related to ethics<br>Need to focus on conduction of ethics related sessions. |
| **Action 1**: Separate GFM (Guardian Faculty Member) is appointed for batch of 20 Students for addressing personal issues, counselling and imbibe ethical values.<br>**Action 2:** Different industry culture awareness programs are organized to make students aware. about industrial ethics which includes session on paper publication, IPR, Plagiarism free content in seminar and project report.<br>**Action 3:** Institute student have proper uniform which indirectly contribute to develop ethical values of uniformity. | | | |
| **PO9: Individual and Team work:** Function effectively as an individual and as a member or leader in multidisciplinary activities | | | |
| PO9 | 2.1 | 2.32 | Target achieved.<br>Courses like seminar, project, business communication, project based learning courses involve individual and teamwork. Po attended to set target. |
| **Action 1:** Continues presentations are kept for seminar and project to enhance individual and team work.<br>**Action 2:** Tarunai-students annual cultural program is organized every year where in students actively participate to showcase their skill as an individual and as team.<br>**Action 3:** Industrial visit helps them to learn how to work as a team, gain practical knowledge. | | | |
| **PO10: Communication:** Communicate effectively with engineering community and society at large | | | |

| | | | |
|---|---|---|---|
| PO10 | 2.2 | 2.26 | Target achieved.<br>Skills required for documentation, communication, presentation during project and seminar is satisfactory but due to rural background there is scope for improvement. |
| **Action 1:** In academic time table separate time slot allotted for soft skill improvement session. Special training team is appointed for the same.<br>**Action 2:** Student participated in various online soft skill development courses offered by various MOOCS platforms like NPTEL.<br>**Action 3:** Different cultural events, sports, social activities, project competition, industrial visits, Industrial training etc. contributed in students soft skill development. | | | |
| **PO11: Project management and finance:** Demonstrate engineering and management principles to carry out projects in multidisciplinary environment, as a member/leader in a team. | | | |
| PO11 | 1.6 | 2.21 | Target achieved.<br>Courses like Operation Research, Energy Engineering, Energy Audit and Management includes project management and finance. Students are able to apply knowledge and understanding of the engineering and management principles to their project work, as a member and are able to work effectively in a team. |

| |
|---|
| **Action1:** Department student participated in various competition project competition and secured prizes.<br>**Action2:** Department is having MOUs with various industries. Number of projects are Industry sponsored projects which helps student to learn project management and finance. |
| **PO12: Lifelong learning:** Recognize the need for and an ability to engage in life-long learning |

| | | | |
|---|---|---|---|
| PO12 | 1.8 | 2.31 | Target achieved.<br>Students are learning fundamental courses in second year and application oriented courses in pre-final and final year, Student have demonstrated their lifelong learning ability. |
| **Action1:** Students are encouraged to do MOOC courses like NPTEL, Coursera etc.<br>**Action 2:** Students participation in various activities like extracurricular, project competition developed their lifelong learning ability. | | | |
| **PSO1:** Students will be able to analyze and design the electronics and telecommunication systems by understanding and applying the fundamental knowledge. | | | |

| | | | |
|---|---|---|---|
| PSO1 | 1.92 | 2.44 | Basic science course, professional core course, Engineering science course are used to analyze and design the electronics and telecommunication systems by understanding and applying the fundamental knowledge. |
| **Action 1:** Students are trained through various hands-on courses of respective domains.<br><br>**Action 2:** Students are oriented about various technological developments through induction program. | | | |
| **PSO 2:** Electronics and telecommunication students will be able to contribute to projects in the core and associated domain by using modern tools like PCB design, embedded programming, etc. | | | |
| PSO2 | 1.68 | 2.34 | Courses such as PCB Design, Embedded system, Digital Signal Processing, Numerical Methods involves simulation tools.<br>•Project validation by using simulation tools. |
| **Action 1:** Various expert session are organized through industrial resource persons.<br><br>**Action 2**: Students are oriented about entrepreneurship through skill development courses. | | | |