**Government College of Engineering and Research, Avasari (Khurd).**

**Department of Instrumentation & Control Engineering**

Project Log Book





Academic Year 2020-2021

**Government College of Engineering & Research, Avasari (Khurd)**

Taluka-Ambegaon,District - Pune, 412405

**Tel:** 02133- 230582; **Fax:** 02133-230583

**Email:** g [coeara@gmail.com](mailto:coeara@gmail.com) **Website:** g [coeara.ac.in](http://www.gcoeara.ac.in/)

Affiliated to Savitribai Phule Pune University, Pune

**Rules & Regulations**

1. All students must enter the correct information in the log book.
2. All the entries in the project log book must be verified by the concerned project guide.
3. Student must report to their respective guide on project day as per the time table.
4. Activity planned should be completed as per the schedule only.
5. Submit soft and hard copies of the Synopsis, Project Stage-I & Stage-II report in the prescribed format.
6. Students must maintain Logbook, Workbook and File (containing all the documents related to the project like, IEEE papers, datasheets, reference material etc.) and must be brought at the time of meeting with guide, project reviews and examination
7. Changes, if any, must be countersigned by the concerned project guide.
8. For any queries please contact to your project guide/ project coordinator.
9. This log book must be submitted to Guide/Coordinator/Committee or the Head of Dept. at the time of final submission of the project

\*Program Outcomes:

|  |  |
| --- | --- |
| Sr No | **Statement of PO** |
| PO1 | **Engineering Knowledge:** Apply knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems. |
| PO2 | **Problem Analysis:** Identify,formulate, 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 specified needs with appropriate consideration for public health and safety, cultural, societal and environmental considerations. |
| PO4 | **Conduct investigations of complex problems** using research-based knowledge and research methods including design of experiments, analysis and interpretation of data and synthesis of 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 under- standing of the limitations. |
| PO6 | **The Engineer and Society**: Apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice. |
| PO7 | **Environment and Sustainability**: Understand the impact of professional engineering solutions in societal and environmental contexts and demonstrate knowledge of and need for sustainable development. |
| PO8 | **Ethics**: Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice. |
| PO9 | **Individual and Team Work**: Function effectively as an individual, and as a member or leader in diverse teams and in multi-disciplinary settings. |
| PO10 | **Communication**: Communicate effectively on complex engineering activities with the engineering com- munity 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 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. |

**Government College of Engineering and Research, Avasari (Khurd).**

**Department of Instrumentation and Control Engineering.**

**Institute Vision:**

Educational institution for Empowerment through technological excellence towards sustainable development.

**Institute Mission:**

1. Value based and demand driven education using best practices.

2. Promotion of research, innovation and entrepreneurship.

3. Commitment to sustainable solutions in service of society.

4. Capability to face local and global challenges.

**Short Term Institute Goals:GCOEARA@2023**

1. Accreditation of UG program in Mechanical, Automobile and Instrumentation and Control Engineering.
2. Establishing research center in Mechanical and Automobile departments.
3. 50 % of faculty having PhD qualification.
4. 80% Placement/Higher Education /Self Employment.
5. Establishment of Incubation center.
6. Establishment of Appropriate Rural Technology Center.
7. Sustainable development through Solid Waste Management, Rain Water Harvesting and Green Energy.
8. 50% projects to be interdisciplinary or sponsored.
9. 50 hours per year of social service by staff and students.
10. IRG of Rs. 15 Lacs per year.

**Long Term Institute Goals:GCOEARA@2028**

1. Accreditation of UG programs in E & TC, Computer and Civil Engineering.

2. 1 patent per year per department.

3. 1 research paper in any reputed journal per faculty per year.

4. 3 start ups by the end of 2025.

5. Meeting 25 % of electrical energy demand through renewable energy sources by 2025.

6. Center of excellence in Appropriate Rural Technology.

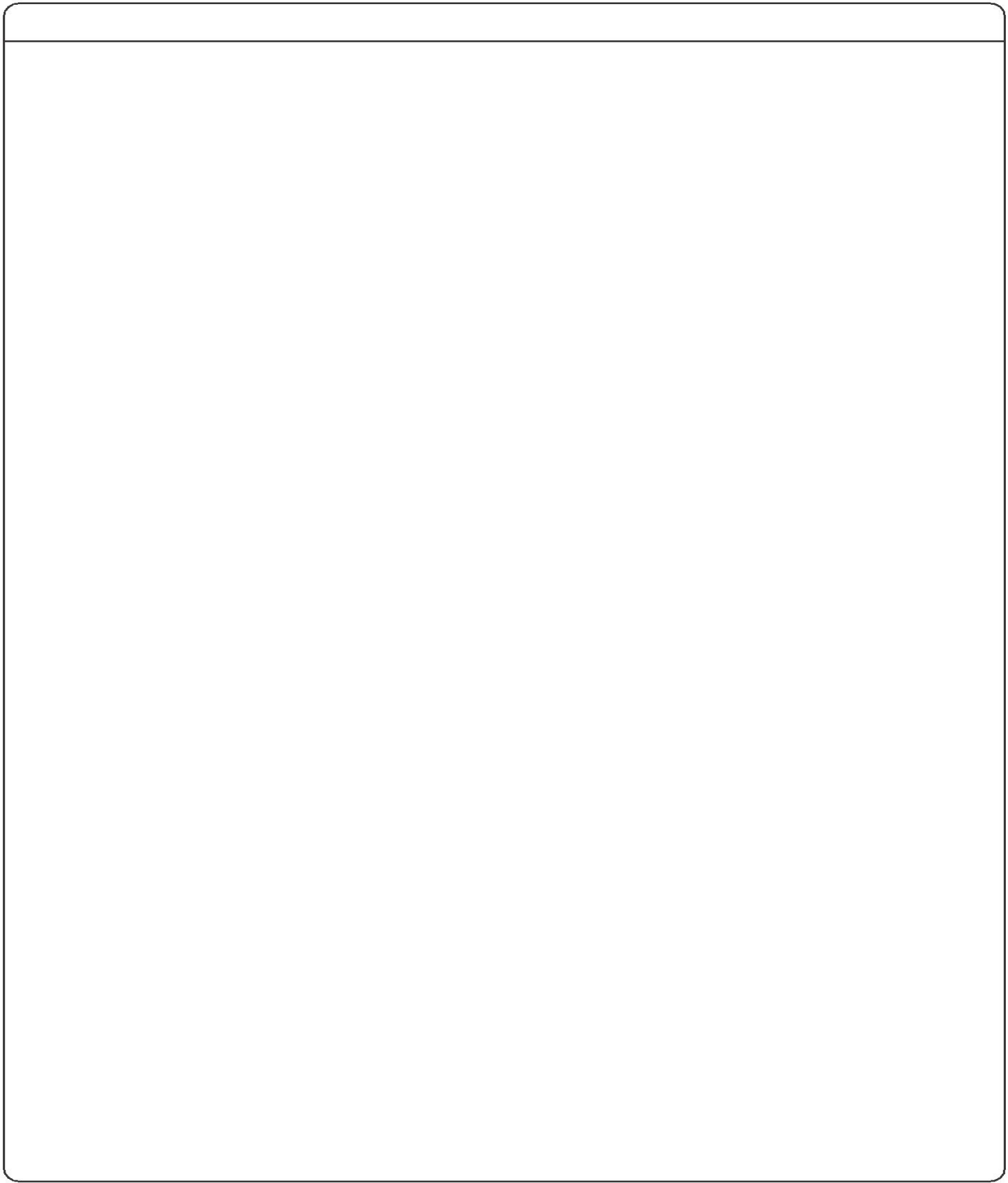
7. 05 MoU with any reputed Foreign University.

8. Establishing research centre in Instrumentation,E & Tc,computer and Civil Department.

9. Full Autonomy by 2025.

**Government College of Engineering and Research, Avasari (Khurd).**

Department of Instrumentation and Control Engineering.

**INDEX**

Sr. No Title Page No.

* 1. Project Stage-I and Stage-II Syllabus 1
  2. Project Group Student information 3
  3. Undertaking by students 4
  4. Project Schedule 5
  5. Selection of Project Idea 6
  6. Weekly Activity Chart Month wise 7
  7. Project Stage-I Review-I 14
  8. Project Stage-I Review-II 15
  9. Internal Project work evaluation (Mock Seminar) 16
  10. Project Stage-II Review-I 17
  11. Project Stage-II Review-II 18
  12. Internal Project work evaluation (Project Exhibition Participation) 19
  13. Content Beyond Syllabus and Contribution 20
  14. Submission checklist for final project submission 21
  15. Participation in Project Competition, Paper publication/Presentation 22
  16. Project Synopsis Format 23

#### Savitribai Phule Pune University, Pune

**Syllabus**

406266 – Project Stage- I

|  |  |  |
| --- | --- | --- |
| **Teaching Scheme** | **Examination scheme** | **Credits** |
| Practical : 2 Hrs/Week | Term Work: 50 Marks | Term Work: 2 |

The term work will consists the comprehensive viva on the project work done in the first semester. The head of the department should constitute the committee of senior faculty members from the department/Institute for this viva examination. The students have to give presentation on the work done and prepare report

Note:

* Project Stage – I- It includes literature survey and minimal implementation of the project including software and Hardware, which is to be carried out in the institution/ industry/ research laboratory.
* The duration of project should be a minimum of two semesters: Project Stage –I & II.
* Each student has to give a presentation based on work done for the project.
* The presentation time is of minimum 10 minutes followed by a 5 minutes session for discussions/question and answers.
* Each student/project group has to maintain a Project log book ( Format will be provided by Project Coordinator). Weekly progress needs to be recorded in log book.
* Each student/project group has to demonstrate the minimal implementation of the project work and should submit the report on the day of presentation to the department along with the project progress report.
* The presentation & submission of the report will carry 50% weightage and demonstration and submission of project progress report will carry 50% weightage for final evaluation. The evaluation and viva will be carried out by department project committee including guide.

#### Savitribai Phule Pune University, Pune Syllabus

406272 – Project Stage- II

|  |  |  |
| --- | --- | --- |
| **Teaching Scheme** | **Examination scheme** | **Credits** |
| Practical : 6Hrs/Week | Term Work: 100 Marks | TW/OR: 6 |
|  | Oral: 50 Marks |  |

For the term work the head of the department should constitute the committee of senior faculty members. A progressive report has to be maintained and should be shown to the external examiner at the time of final exam. The students have to give final presentation and a project report has to be prepared. In the project report an evaluation certificate should be there duly signed by external examiner. The oral examination means a comprehensive viva on the project done.

Note:

* The Project Stage – II is to be conducted in continuation of the project stage-I which is to be carried out in the institution/industry/research laboratory.
* There will be a mid-semester evaluation of the project work done after about two months. The mid-semester evaluation will be done by the department project committee/project guide; this will carry weightage in final evaluation.
* Publishing at least one paper on work done, in National/International Conference or Journal by each student / project group with Project guide as one of the co-author is compulsory .
* Each student / project group has to submit to the department a project report in the prescribed format after completion of the project work. The final evaluation and viva-voce will be conducted by the project committee/Guide on the stipulated date at the end of the semester.
* Each student / project group has to make a demonstration on the work carried out, before the project committee for project evaluation. The end semester evaluation will be done by the project committee including the guide.

#### Government College of Engineering & Research, Avasari (Khurd).

##### Department of Instrumentation and Control Engineering.

**Project Group Information**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Sr.**  **No.** | **Name of the student** | | **Photo** | **Roll No.** | **Exam No.** | **T. E. Result** | **Remarks** |
| 1. | Gite Abhijeet Satish. | |  |  |  |  |  |
|  |  |  |  |
| **Mobile No.** | 9767902984. | 17161003 |  | 8.48 |  |
| **Email ID** | abhijeet.gite99@gmail.com |  |  |  |  |
| 2. | Jadhav Prasad Satish. | | photopj |  |  |  |  |
| **Mobile No.** | 8308341837. | 17161002 |  | 7.85 |  |
| **Email ID** | prasadjadhav15799@gmail.com |  |  |  |  |

|  |  |
| --- | --- |
| **Name of Guide** | Dr. N.S. Nehe |
| **Mobile No.** | 9890467612 |
| **Email ID** | nsnehe20@gmail.com |

8

**Government College of Engineering & Research, Avasari (Khurd)**

Department of Instrumentation and Control Engineering.

Undertaking by Student.

We, the students of B. E. (Instrumentation & Control Engineering) declare that the work embodied in this project work hereby, titled “**Mild Hybrid Electric Vehicle**”, forms our own contribution to the research work carried out under the guidance of **Dr. N. S. Nehe** is a result of our own work and has not been previously submitted to any other University. And we assure that we will follow all the rules and regulations related to the BE project activity for the academic year 2020 - 2021

Name of the students Signature

1. Gite Abhijeet Satish.
2. Jadhav Prasad Satish.

# BE Project Schedule

Schedule of activities for Project stage –I

|  |  |  |  |
| --- | --- | --- | --- |
| **Sr.**  **No.** | **Activity Scheduled** | **Activity conducted by** | **Date/Week** |
| 1 | Registration of project groups (2 to 4 students) | Project Coordinator | First week of July |
| 2 | Finalizing Project. Preference of  Project Guide. | Project Coordinator and  HoD | Third week of  July |
| 3 | Finalization of preferred project guide | Project Coordinator and HoD | Fourth week of July |
| 4 | Submission of abstract to project  Guide. | Project Guide | First week of August |
| 5 | Project Stage-I Review – I | Department project  Committee including guide. | Last week of August |
| 6 | Project Stage -I Review – II | Department project  Committee including guide. | Last week of September |
| 7 | Submission of draft copy of report to guide | Project Guide | Last week of September |
| 8 | Submission of report in  prescribed format | Project Guide | First week of October |
| 9 | Project Stage -I Presentation/Demonstration | Department project  Committee including guide. |  |

**Schedule of activities for Project stage –II**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sr.**  **No.** | **Activity Scheduled** | **Activity conducted by** | **Date/Week** |
| 1 | Project Stage -II Review - I | Department project  Committee including guide. | Third week of January |
| 2 | Project Stage -II Review - II | Department project  Committee including guide. | Third week of February |
| 3 | Submission of draft copy of project report to guide | Project Guide | Second week of March |
| 4 | Final Submission of Project  report | Project Guide | First week of April |
| 5 | Project Exhibition Participation |  |  |
| 6 | Project Stage -II Examination | Department project  committee including guide and External examiner |  |

\*Any changes in above schedule will be communicated by separate notice as and when required.

11

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**e** Class: B.E.

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| --- | --- | --- | --- | --- |
| **Roll**  **No.** | **Name of Student** | **Suggested Project Ideas** | **Selected Project Idea** | **Student**  **Sign** |
| 17161003  17161002 | Gite Abhijeet Satish  Jadhav Prasad Satish | 1. Mild Hybrid Electric vehicle.  Scheduled Power Management of large scale residences. | Design and Simulation 48V Mild hybrid electric vehicle on Simulink.  An IIoT based project on Energy Management of a large residences which uses the calendar to efficiently use and manage the energy consumed by the HVAC and the Lights, two major energy consumers in the building. |  |

**m e n t C**

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**n g I n e e**

**Government College of Engineering & Research, Avasari (Khurd).**

##### Department of Instrumentation and Control Engineering

**SELECTION OF PROJECT IDEA** Academic Year: 2020-21

1.Name & Sign of Committee members: 2.Guide Name & Sign

**Weekly Activity Chart**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Week No. | Activity Planned | Activity completed | Signature of Student | Signature of Guide with date |
| 1. | Selection of Topic | Finalize topic between suggested Project ideas. |  |  |
| 2. | Survey of topic | Did the survey of finalized topic with help of various sites. |  |  |
| 3. | Literature survey | Working on Literature |  |  |
| 4. |  | Go through all literature available in market to build theoretical concept. |  |  |

**Month: July**

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**Month: August**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| WeekNo. | Activity Planned | Activity completed | Signature of Student | Signature of Guide with date |
| 1. | 1. Survey of Project. | First, we started with a search on the Internet to gather basic information related to our topic. |  |  |
| 2. |  | Next, we did the study of the Hybrid Market in India and why hybrid? |  |  |
| 3. |  | Then, we did a technical survey of the topic on various automobile sites. |  |  |
| 4. |  | Finally, we have done with the survey and conclude that a Mild hybrid is a good option for the Indian market. |  |  |

**Weekly Activity Chart**

###### Month: September

**Weekly Activity Chart**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Week No. | Activity Planned | Activity Completed | Signature of student | Signature of Guide with date |
| 1**.** | 1.Basic component and architecture finalization | Gathered the information required for the selection of components. |  |  |
| 2. |  | finalized components and its rating according to project requirement |  |  |
| 3. | 1. To get familiar with MATLAB & Simulink environment. | Learnt the fundamentals of MATLAB & Simulink. |  |  |
| 4. |  | Explored the Powertrain blockset & Vehicle dynamics blockset. |  |  |

# Weekly Activity Chart

###### Month: October.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| No. | Activity planned | Activity completed | Signature of Student | Signature of Guide |
| 1. | Prototype Building. | Started prototype building and learnt various designing and modeling concepts. |  |  |
| 2. |  | Prototype was build but struggling for satisfactory result. |  |  |
| 3. |  | Finally, got satisfactory result and started working on Final model. |  |  |
| 4. | Started Development for Final Model | Started to build the Basic Blocks. |  |  |

**Weekly Activity chart**

**Month: November.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| No. | Activity planned | Activity completed | Signature of Student | Signature of Guide |
| 1. | Building Final model. | Started building final model & started with small elements. |  |  |
| 2. |  | Designed DC-DC, AC-DC converter. |  |  |
| 3. | Designing of Controllers. | Started Building Vehicle controller & Engine controller. |  |  |
| 4. |  | Did the development in controller as required. |  |  |

**Weekly Activity Chart**

**Month- December**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| No. | Activity planned | Activity completed | Signature of Student | Signature of Guide |
| 1. | To Work on regenerative braking. | Add the regenerative braking concept in the model and got its result. |  |  |
| 2. | Development Final model. | Final model is built with some  Satisfactory result. |  |  |
| 3. | To work on calibration part. | Still working on calibration part. |  |  |
| 4. | Preparing for presentation. | Presented our project to our guide and guide gave suggestion & correction in PPT. |  |  |

###### Month: January

**Weekly Activity Chart**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Week No. | Activity Planned | Activity completed | Signature of Student | Signature of Guide |
| 1. | Preparing for final presentation | Presented our presentation to Project Coordinator & showed them prototype result. |  |  |
| 2. | Working on Air- Fuel ratio | Done with the basic study Air-fuel ratio. |  |  |
| 3. |  | Trying to achieve desired results  Result-Fluctuating Air fuel ratio about 11-12 |  |  |
| 4. |  | Got satisfactory result on Air fuel ratio.  Result-Constant Air fuel ratio of 14.7 |  |  |

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# Weekly Activity Chart

# Month: February

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Week No. | Activity Planned | Activity completed | Signature of Student | Signature of Guide. |
| 1. | Resolve issue with Engine performance and emissions. | Air fuel ratio impacted engine performance still working on it. |  |  |
| 2. |  | Resolved issue with engine performance. |  |  |
| 3. |  | Resolved issue with engine exhaust gas emissions. Result-4% BSFC improvement. |  |  |
| 4. | Add Auxiliary system. | Added auxiliary loads. |  |  |

# Weekly Activity Chart

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Week No. | Activity Planned | Activity completed | Signature of Student | Signature of Guide. |
| 1. | Series Regenerative Braking. | Advance calibration. |  |  |
| 2. | Work on BMS | As Auxiliary systems added power consumption, so, calibrated battery management. |  |  |
| 3. | MGU-H | Adding MGU-H for more power and energy conservation.  Result-2% BSFC improvement |  |  |
| 4. |  | Tuning MGU-H. |  |  |

**Month: March**

# Weekly Activity Chart

# Month: April

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Week No. | Activity Planned | Activity completed | Signature of Student | Signature of Guide. |
| 1. | Exam Period |  |  |  |
| 2. | Exam Period |  |  |  |
| 3. | EGR | Exhaust Gas Recirculation for emissions. |  |  |
| 4. | Final Calibration | Final Calibration started. |  |  |

**Weekly Activity Chart**

# Month: May

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Week No. | Activity Planned | Activity completed | Signature of Student | Signature of Guide |
| 1. | Final Calibration | Final testing for various City conditions |  |  |
| 2. |  | Got required result  Emission reduced = %,  % Less Fuel consumption  BSFC = % |  |  |
| 3. | Working on Final presentation | Start to prepare final Project presentation. |  |  |
|  |  | Completed Project presentation. |  |  |

**Government College of Engineering & Research, Avasari (Khurd).**

##### Department of Instrumentation and Control Engineering

Class: B.E. **BE PROJECT (STAGE - I)**

Project

Academic Year:

Date

2020- 2021 ,

Sem-I

Title: Mild Hybrid Electric Vehicle :

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Gr. No.** | **Name of**  **Student** | **Roll**  **No.** | **Student Project Work Status** | **Remark** | **Student**  **Sign** |
|  |  |  | Market Survey:  Literature Survey:  Block Diagram:  Circuit Diagram:  Components:  Hardware:  Software:  Documentation: |  |  |

Name and Sign Of Committee Member: Name and sign of Guide :

**Government College of Engineering & Research, Avasari (Khurd).**

Department of Instrumentation and Control Engineering

Date: **Internal Project Work Evaluation sheet (Mock Seminar)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Sr.**  **No.** | **Name of the Student** | **Presentation**  **(10)#** | **Understanding**  **(15)#** | **Work completion**  **(15)#** | **Application**  **(10)#** | **Total**  **(50)#** |
| **1.** |  |  |  |  |  |  |
| **2.** |  |  |  |  |  |  |
| **3.** |  |  |  |  |  |  |
| **4.** |  |  |  |  |  |  |

# - To be filled by guide / committee members only. Marks given are purely indicative Actual Termwork marks will only be finalized by Examiners at the time of B.E. Project (Stage - I) Examination.

Comment if any:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Name & Signature of evaluation committee members.

1. 2.

Name of Guide : Signature H.O.D. Sign

#### Government College of Engineering & Research, Avasari (Khurd).

##### Department of Instrumentation and Control Engineering

Class: B.E. **BE PROJECT (STAGE - II)**

Project

1. Y. : 2020-2021

Date

,

Sem- II

Title: Mild Hybrid Electric Vehicle. :

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Gr. No.** | **Name of**  **Student** | **Roll**  **No.** | **Student Project Work Status** | **Remark** | **Student**  **Sign** |
|  |  |  | Circuit Diagram: |  |  |
|  |  | PCB Design: |
|  |  | Components: |
|  |  | Hardware: |
|  |  | Software: |
|  |  | Documentation: |
|  |  | File (Ref Material / Report / Data Sheet etc.) |
|  |  |  |

Name & Sign committee member:

Name & Sign of Guide:\_\_\_

**Government College of Engineering & Research, Avasari (Khurd).**

Department of Instrumentation and Control Engineering

**(Project Exhibition)**

**Internal Project Work Evaluation sheet** Date:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Sr.**  **No.** | **Name of the Student** | **Innovative Idea**  **(10)#** | **Hardware & Software Design**  **(20)#** | **Depth of Under- standing (50)#** | **Result/Work completion**  **(30)#** | **Presen- tation**  **(20)#** | **Docume- ntation**  **(20)#** | **Total**  **(150)#** |
| **1** |  |  |  |  |  |  |  |  |
| **2** |  |  |  |  |  |  |  |  |
| **3** |  |  |  |  |  |  |  |  |
| **4** |  |  |  |  |  |  |  |  |

**#** - To be filled by guide after referring to the evaluation sheet filled by the expert who judges the project at time of project exhibition.

Remarks, if any :

Name & Sign committee member:

1. 2.

Name of Guide:\_\_\_\_\_\_\_\_\_\_\_\_ Signature H.O.D. Sign

**Government College of Engineering & Research, Avasari (Khurd).**

##### Department of Instrumentation and Control Engineering

(2020 - 2021)

**C ontent Beyond Syllabus & Contributions**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Gr. No.** | **Laboratory** | **Area of Project** | **POs/PEOs mapped** | **Contributions** | **Publication** | **Advancement in Project**  **(Content Beyond Curriculum)** |
|  |  |  |  |  |  |  |

in the project is not learned in the curriculum up till now (out of syllabus).

Guide should verify the details entered in above table.

Name of Guide\_\_\_\_\_\_\_\_\_\_\_\_\_\_Signature\_\_\_\_\_\_\_\_\_\_\_\_\_

**BE PROJECT FINAL SUBMISSION**

**CHECK LIST**

1. All project groups should complete the project in all respect i.e. hardware and software.
2. All groups should prepare the soft copy of the project report and get the report checked from the internal guide and then print the hardcopy.
3. All groups should prepare the hard copy of the project report in the hardbound form. Each group should prepare 2 hardcopies for submission in the department + each individual group member copy.
4. Prepare the CD/PD of the project. It should include the following,
   1. Audio-Video recording of complete demo of the project
   2. Final Project report
   3. PPT of the final project
   4. Software code
   5. PCB layout design
   6. Important ICs Datasheets
   7. Paper presented
   8. Scan copy of Certificates
5. You should submit both, hardcopy of the project report and above mentioned CD. (Note: changes if any in submission will be informed by the notice.)

**Participation in Project competition/Exhibition**

|  |  |  |  |
| --- | --- | --- | --- |
| Sr.  No. | Name & Place of project competition / Exhibition | Date | Certificate/Prizes won (if any) |
|  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

## (Attach photocopy of certificate/s)

**Paper publication / Presentation**

|  |  |  |  |
| --- | --- | --- | --- |
| Sr.  No. | Name of the organizing society | Date | Certificate/Prizes won (if any) |
|  |  |
|  |  |  |  |
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|  |  |  |  |

### GOVERNMENT COLLEGE OF ENGINEERING &

RESEARCH**, AVASARI (KHURD).**

**DEPARTMENT OF INSTRUMENTATION AND CONTROL ENGINEERING**

**Year- 2020 -2021**

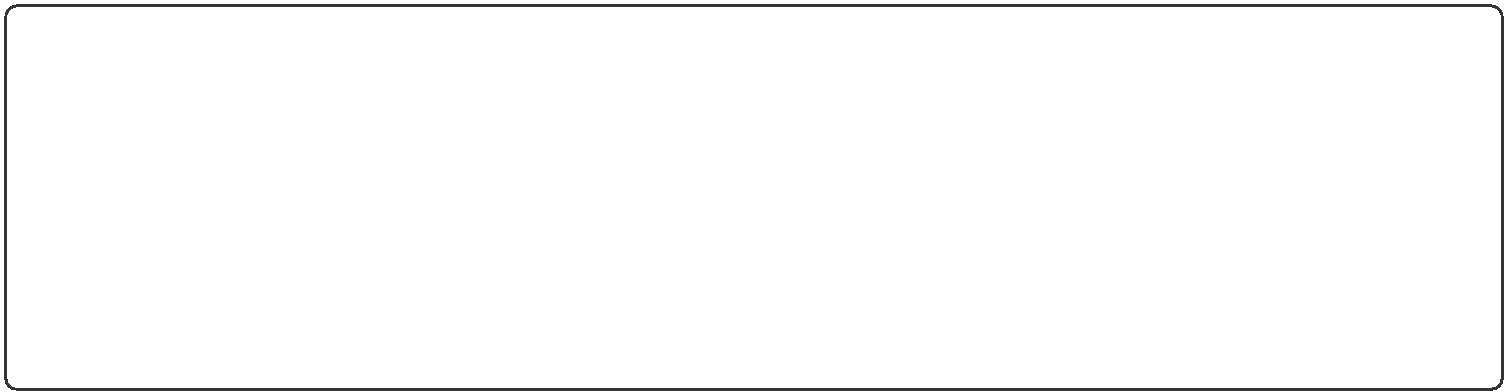
**BE Project Synopsis**

(Synopsis, preferably, should be of about 3 to 4 pages. The content should be as brief as is sufficient enough to explain the objective and implementation of the project that the candidate is going to take up. The write up must adhere to the guidelines.)

Title of the Project: Mild Hybrid Electric Vehicle.

Area of Project:

Sponsored/ In-house: (If sponsored write company name) Guide Name:

External Guide Name (if sponsored project): Project Group:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Gr.  No. | Roll No. | Name of Student | Contact No. | Email-ID |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

Introduction:

Objective/Aim:

Specifications:

Block Schematic:

Methodology:

1.Hardware requirement:

2.Software Requirement:

Hardware and Software Testing strategy

References (IEEEpapers/other):

Signature of Students: