

Shantilal Shah Engineering College, Bhavnagar

Electrical Engineering Department

Subject Evaluation Scheme

Branch : Electrical Engineering

Semester : 6th

Subject : Design Engineering II B

Faculty :

- (i) Prof. B. N. Vaidya
- (ii) Prof. A. M. Upadhyay
- (iii) Prof. (Dr.) M. D. SOLANKI
- (iv) Prof.(Dr.) A. K. Dhandhia
(Course coordinator)

Division/Batch : Electrical/All

Subject Code : 3160001

Academic Year : 2021-22

Teaching and Examination Scheme:

| Teaching Scheme | | | Credits | Examination Marks | | | | Total Marks | |
|-----------------|---|---|---------|-------------------|--------------|-----------------|----|-------------|-----|
| L | T | P | | Theory Marks | | Practical Marks | | | |
| | | | ESE(E) | PA(M) | ESE Viva (V) | PA (I) | | | |
| 0 | 0 | 2 | 1 | 00 | 00 | 00 | 80 | 20 | 100 |

Evaluation Scheme for PA (I): (20 marks)

| Marks | Particular | | | | | | |
|-------|---------------------|-----------------|--------------------------|------------------------|-----------------|--------------|-------------------------|
| | System level Design | Detailed Design | CAD Modelling & Analysis | Building the solutions | Final Prototype | Project Fair | Feedback & Final Report |
| CO1 | 2 | 1 | 2 | | | 1 | |
| CO2 | 1 | 2 | | 2 | | 2 | |
| CO3 | | | | | 2 | 2 | 3 |

Evaluation Scheme for ESE (V): (80 marks)

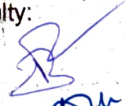



A Viva-Voce examination will be conducted at the end of the semester by a team of two examiners, one of whom will be an internal Faculty Member, who may have taught the subject. The other will be an external examiner to be appointed by the University.


| Sr. No. | Particular | Sub-Head Weightage | Related CO |
|---------|--|--------------------|------------|
| 1. | <p>Design calculation (it may include size & shape specifications, tolerances, material requirement, standards/safety rules/govt. policies, sketches, detail & assembly drawings, list of components with specifications etc.) These all aspects are case sensitive so one can add/remove some aspects from the list.</p> <ul style="list-style-type: none"> ✓ For CE, IT, other process related branches, one may also use Flow chart/Block Diagrams/Algorithms/Programming etc. ✓ Measuring Instruments/techniques - knowledge and use ✓ Comparison of existing materials, methods, tools and equipment for your project <p>Detail Design: Considerations for-</p> <p>Design for Performance, Safety and Reliability</p> <ul style="list-style-type: none"> ✓ Different aspects of design for performance, safety and reliability introduced/ considered for defined problem <p>Design for Ergonomics and Aesthetics</p> <ul style="list-style-type: none"> ✓ Consideration of Ergonomics and Aesthetics aspects to raise the value of products <p>Design for Manufacturability & Assembly (DFMA)</p> <ul style="list-style-type: none"> ✓ Reference, different considerations and guidelines followed for DFMA during the work <p>Design for Cost, Environment</p> <ul style="list-style-type: none"> ✓ Cost and Environment consideration as they play major role in Product design <p>Design for Use, Reuse and Sustainability</p> | 25 | CO1 |
| 2. | Simulation & Analysis (CAD/Software modelling), Mathematical model | 15 | CO2 |
| 3. | <p>Prototyping & Testing:</p> <ul style="list-style-type: none"> ✓ Versions of Prototypes with all possible modification and iterations to further refine the solutions (15 marks out of 25 - for students who have made iterative versions for prototype with refinement; if students only present final prototype without any version/s or modification/s then this 15 marks will not be counted for such students) <p>Note: Report should carry all details/modification for the versions of prototype with images, it is not required to have different physical models for the different versions</p> | 25 | CO3 |

| | | | |
|-------|--|----|-----|
| | ✓ Testing/user feedback results (10 marks out of 25 - if the details and testing/user feedback results are there) ✓ Video of Prototypes (YouTube link) | | |
| 4. | Report, Logbook, Continuous Assessment Card: Compilation of work report (process report), duly signed Logbook and Continuous Assessment Card, Online Certificate generated through DE Portal, Future action plan, Question and Answer, Communication Skill, Attitude | 15 | CO2 |
| TOTAL | | 80 | |

| Assessment Type | Attainment Levels | |
|-----------------|---------------------|--|
| | Internal Assessment | Level 1 |
| Level 2 | | 60% of students scoring more than 50% marks in internal assessment tools |
| Level 3 | | 70% of students scoring more than 50% marks in internal assessment tools |

Signature of the Subject Faculty:

1. Prof. B N Vaidya 
2. Prof. A M Upadhyay 
3. Prof. (Dr.) M D SOLANKI 
4. Prof. (Dr.) A K Dhar.dhia 
(Course coordinator)


Prof. & HOD
(Electrical)

- Signature of the Subject Faculty:
1. Prof. B N Vaidya
 2. Prof. A M Upadhyay
 3. Prof. (Dr.) M D SOLANKI
 4. Prof. (Dr.) A K Dhar.dhia
(Course coordinator)

Shantilal Shah Engineering College, Bhavnagar
Electrical Engineering Department
Subject Valuation Scheme (Internal)

Branch : Electrical Engineering
Semester : 6th
Subject : Microprocessors and
 Microcontrollers
Faculty : Prof. M. U. Ghanchi
 (Course coordinator)

Division/Batch : Electrical/All
Subject Code : 3160914
Academic Year : 2021-22

Teaching and Examination Scheme:

| Teaching Scheme | | | Credits C | Examination Marks | | | | | | Total Marks |
|-----------------|---|----|--------------|-------------------|-------|-----|-----------------|----|-------|----------------|
| L | T | P | | Theory Marks | | | Practical Marks | | | |
| | | | | ESE(E) | PA(M) | | ESE(V) | | PA(I) | |
| | | PA | ALA | | ESE | OEP | | | | |
| 3 | 0 | 2 | 5 | 70 | 20 | 10 | 20 | 10 | 20 | 150 |

Examination Scheme for PA:

PAT will be conducted during semester. Distribution of marks nearly will be as per below.

| Marks | PAT |
|-------|-----|
| CO1 | 10 |
| CO2 | 10 |
| CO3 | 10 |
| CO4 | |

Note: In PA component, for all the students it is mandatory to pass PAT/RPAT exam. If the student obtains less than 12 marks out of 30 in PAT, subsequently he/she is supposed to appear for a RPAT and having cleared the remedial test he/she is eligible to get 08 marks even though the student has obtained marks more than 12 in RPAT.

Examination Scheme for PA(I):

Valuation will be done on the basis of performance in practical.

| | Practical | | | | | | | | | |
|-----|-----------|----|----|----|----|----|----|----|----|----|
| | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 |
| CO1 | | | | | | | | | | |
| CO2 | 02 | 02 | 02 | 02 | 01 | 01 | 02 | 01 | 01 | 01 |
| CO3 | | | | | 01 | 01 | | | | |
| CO4 | | | | | | | | 01 | 01 | 01 |

DEVELOPMENT OF RUBRICS FOR EVALUATING THE SKILLS OF STUDENTS BY MAPPING PERFORMANCE CRITERIAS WITH COURSE OUTCOMES
INTERNAL EVALUATION (20 MARKS)

NAME OF COURSE : MICROPROCESSORS AND MICROCONTROLLERS (3160914)

NAME OF SUBJECT COORDINATOR : MAQBUL U GHANCHI

Analytical Scale for rating the performance of student : POOR = 1 FAIR = 2 GOOD = 3 EXCELLENT = 4

Analytical Scale for rating the performance of student

| LEVEL CRITERIA | EXCELEINT 4 | GOOD 3 | FAIR 2 | 1 |
|------------------------------|---|---|---|---|
| Familiar with Software | <ul style="list-style-type: none"> Student has full command on basic tools of software. need of further clarification and help from instructor. | <ul style="list-style-type: none"> Student has good command on basic tools of software. Approach instructor for further clarification and help. | <ul style="list-style-type: none"> Student has limited command on basic tools of software. Rarely approach instructor for further clarification and help. | <ul style="list-style-type: none"> Student has no idea how to use the basic tools of the software. Doesn't approach instructor for further clarification and help. |
| Program Execution | <ul style="list-style-type: none"> Student demonstrates very good knowledge of the practical procedures. Student helps other students to follow procedures Thoroughly and carefully follows each step before moving on to next step. | <ul style="list-style-type: none"> Student demonstrates sound knowledge of allocated task and procedures Need discuss with peers to solve problems in procedures Carefully follows each step | <ul style="list-style-type: none"> Student demonstrates good / limited knowledge of the allocated task and procedures Will ask peers for help with problems in allocated task procedures Seek help in one step before moving on to the next step | <ul style="list-style-type: none"> Student demonstrates limited knowledge allocated task and procedures Requires help from teacher for every steps in procedures. |
| Clarity of Result and Output | <ul style="list-style-type: none"> Clearly interpret the result Output is generated correctly in all areas. | <ul style="list-style-type: none"> Clearly interpret the result Output is correct in general, but not in all areas | <ul style="list-style-type: none"> Interpret the result up to some extent There is output but wrong. | <ul style="list-style-type: none"> Can't reach to the result There is no output. |
| Task Completion | <ul style="list-style-type: none"> Student was able to complete all the tasks given. | <ul style="list-style-type: none"> Student was able to complete most of the tasks given. | <ul style="list-style-type: none"> Student was not able to complete most of the tasks given. | <ul style="list-style-type: none"> Student fail to complete all the tasks. |
| Overall Performance | <ul style="list-style-type: none"> The lab work done exceeds all expectations and shows that the learner is proud of his/her work. The effort that was put into this demonstration is the best it can be by the learner. | <ul style="list-style-type: none"> The lab work was done with good effort that shows what the learner is capable of. It is evident that a lot of time was spent on this demonstration. | <ul style="list-style-type: none"> The lab work is done with fair effort, but the quality is still not what the learner is capable of. It is evident that the task was rushed. | <ul style="list-style-type: none"> The lab work is done with little effort, quality is not what the learner is capable of. It is evident that the work was rushed and little time was spent on the demonstration. Work is incomplete. |

MARKS FOR ONE PRACTICAL / EXPERIMENT FOR ONE STUDENT

Shantilal Shah Engineering College, Bhavnagar
Electrical Engineering Department
Subject Evaluation Scheme for Even term 2021-22

Name of the subject (code):Electrical Measurements and Measuring Instruments
 (3160915)**Semester/Branch:**B.E. 6thSemester (UG), Electrical Engineering

Name of Concerned Department: Electrical

Name of faculty member/s: (i)Prof M D Solanki (ii)Prof J B Sarvaiya(iii)Prof A K Dhandhia

→ **GTU Scheme for the subject:**

| Teaching Scheme | | | Credits | Examination Marks | | | | Total Marks |
|-----------------|----|----|---------|-------------------|--------|-----------------|----|-------------|
| L | T | P | | Theory Marks | | Practical Marks | | |
| | | | ESE (E) | PA(M) | ESE(V) | PA(I) | | |
| 04 | 00 | 02 | 05 | 70 | 30 | 30 | 20 | 150 |

→ **Course Evaluation Plan for PA (M) Component: Total marks 30**

| Marks | PAT |
|-------|-----|
| CO1 | 7 |
| CO2 | 9 |
| CO3 | 7 |
| CO4 | 7 |

→ **Course Evaluation Plan for PA (I) Component: Total marks 20(Based on Lab performance and Viva)**

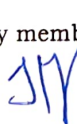
| Marks | Laboratory |
|-------|------------|
| CO1 | 5 |
| CO2 | 5 |
| CO3 | 5 |
| CO4 | 5 |

| Assessment Type | Attainment Levels | |
|---------------------|-------------------|--|
| Internal Assessment | Level 1 | 50% of students scoring more than 50% marks in internal assessment tools |
| | Level 2 | 60% of students scoring more than 50% marks in internal assessmenttools |
| | Level 3 | 70% of students scoring more than 50% marks in internal assessmenttools |

In the test of PA (M) component, for all the students it is mandatory to pass PAT/RPAT exam.If the student obtains less than 12 marks out of 30, subsequently he/she is supposed to appear for a remedial test and having cleared the remedial test he/she is eligible to get 12 marks even though the student has obtained marks more than 12 in RPAT .

Signature of the faculty member:

Prof J B Sarvaiya




Prof & HOD (Electrical)

DEPARTMENT OF ELECTRICAL ENGINEERING

VISION

To become a leading electrical engineering department, by developing excellent engineers, capable of fulfilling the needs of industry, society, and nation at large.

MISSION

1. To offer quality Electrical Engineering Program for aspiring graduates.
2. To nurture ethics and core values in Electrical Engineering graduates.
3. To promote industry interaction, contemporary infrastructure, research, and innovation.

Name of Course With Code: Electrical Measurements and Measuring Instruments 3160915

| Sr. No. | PRACTICALS | COs |
|---------|--|---------------|
| 1. | To study various errors in measurement and methods to reduce errors. | CO1, CO2, CO4 |
| 2. | To measure medium range of resistance using Wheastone Bridge Assembly. | CO2, CO3 |
| 3. | To measure Low resistance using the Kelvin Double Bridge. | CO2, CO3 |
| 4. | To determine the Capacitance by De Sauty's Modified Bridge. | CO2, CO3 |
| 5. | To Determine the Capacitance of an unknown Capacitor by Schering Bridge. | CO2, CO3 |
| 6. | To determine the value of unknown inductance and its reactance with the help of Owen's bridge | CO2, CO3 |
| 7. | Study of Input-Output Characteristics of LVDT. | CO1, CO2 |
| 8. | Study of Strain Measurement Using Strain Gauges Assembly. | CO1, CO2 |
| 9. | To measure Insulation resistance of transformer using Megger. | CO1, CO4 |
| 10. | To study Digital Instruments – Digital Voltmeter, Digital Frequency Meter, Digital Panel Meter, Digital Storage Oscilloscope | CO1, CO3, CO4 |

COURSE OUTCOMES

| COs | Course Outcomes |
|-----|--|
| 1 | Comprehend the basics of electrical measurements. |
| 2 | Explain basic principle, working, characteristics and applications of the various measuring instruments and transducers. |
| 3 | Apply AC and DC bridges for measurement of electrical parameters like resistance, inductance and capacitance. |
| 4 | Prepare the specifications of required measurement systems to be used for measurement of parameters for a specified application. |

DEVELOPMENT OF RUBRICS FOR EVALUATING THE SKILLS OF STUDENTS BY MAPPING PERFORMANCE CRITERIA WITH COURSE OUTCOMES

INTERNAL EVALUATION (20 MARKS)

NAME OF COURSE : Electrical Measurement and Measuring instrument (3160915)

NAME OF SUBJECT COORDINATOR : J.B.Sarvaiya

EXCELLENT = 5

VERY GOOD= 4

GOOD = 3

AVERAGE = 2

POOR = 1

Analytical Scale for rating the performance of student

| S.NO. | CATEGORY | PERFORMANCE CRITERIA/ ASSESSMENT PROCESS | POOR | AVERAGE | GOOD | VERY GOOD | EXCELLENT |
|-------|--------------|---|--|---|---|---|---|
| 1 | PROCEDURE | Procedures are written as part of pre-lab preparation and clearly state the plan for the experiment. If adjustments are made during the lab, those changes are noted as they occur. | The student is not able to explain even the basic concepts of Practical. | The student is able to explain the partial amount of the basic concepts of Practical. | The student is able to explain the amount of the basic concepts of Practical. | The student is able to explain the amount of basic concept of Practical and identify the elements or trainer kit. | The student is able to explain the amount of basic concept of Practical and identify the elements or trainer kit and making connection. |
| 2 | OBSERVATION | Measurements, when required, are recorded as observations, using proper units. Calculations, when required, are clearly shown on the observation side of the lab sheet. | The student is not able to collect the data. | The student is able to collect the data but not in proper order. | The student is able to collect the data in proper order. | The student is able to collect the data in proper order but make wrong calculation. | The student is able to collect the data in proper order and make correct calculation. |
| 3 | CONCLUSION | Reasoning for the lab design is summarized, listing any facts or assumptions on which the lab is based. The essential data gathered during the lab is summarized | The student is not able to understand the practical. | The student is partially able to understand the practical. | The student is able to understand the practical but could not summarize on manual. | The student is able to understand the practical and could partially summarized on manual. | The student is able to understand the practical and could fully summarized on manual. |
| 4 | PRESENTATION | The report is written in such a way that others could accurately duplicate the experiment and compare their data. There is a clear diagram of the essential apparatus used in the experiment drawn in the largest available white space on the front of the lab report sheet. | The student is not able to make the correct lab report/ manual. | The student is able to make the partially correct lab report/ manual. | The student is able to make the fully correct lab report/ manual but not draw proper diagram. | The student is able to make the fully correct lab report/ manual and draw proper diagram. | The student is able to make the fully correct lab report/ manual without copy and draw neat & clean diagram. |

Shantil Shah Engineering College, Bhavnagar
Electrical Engineering Department
Subject Evaluation Scheme

Name of the subject: Wind and Solar Energy
 Subject Code: 3160917
 Semester/Branch: VIth Electrical
 Name of Concerned Department: Electrical
 Name of faculty member/s: (i) Prof A B Parmar

GTU Scheme for the subject: Total marks 30

| Teaching Scheme | | | Credits | Examination Marks | | | | Total Marks |
|-----------------|----|----|---------|-------------------|--------------|-----------------|---|-------------|
| L | T | P | | Theory Marks | | Practical Marks | | |
| | | | ESE (E) | PA (M) | ESE Viva (V) | PA (I) | | |
| 03 | 00 | 00 | 03 | 70 | 30 | 0 | 0 | 100 |

Course Evaluation Plan for PA (M) Component:

| Marks | PAT | Assignment 1 | Assignment 2 |
|-------|-----|--------------|--------------|
| CO1 | 6 | | |
| CO2 | 5 | | |
| CO3 | 9 | | |
| CO4 | 6 | | |
| CO5 | 4 | | |

| Assessment Type | Attainment Levels | |
|---------------------|-------------------|--|
| Internal Assessment | Level 1 | 60% of students scoring more than 50% marks in internal assessment tools |
| | Level 2 | 70% of students scoring more than 50% marks in internal assessment tools |
| | Level 3 | 80% of students scoring more than 50% marks in internal assessment tools |

In the test of PA (M) component, if the student obtains less than 12 marks out of 30, subsequently he/she is supposed to appear for a remedial test and having cleared the remedial test he/she is eligible to get 12 marks.

Signature of the faculty



Signature of the HOD



Shantilal Shah Engineering College, Bhavnagar
Electrical Engineering Department
Subject Evaluation Scheme

Name of the subject (code): Contributor Personality Development Program (3160002)
Semester/Branch: B.E. 6th Semester (UG), Electrical Engineering
Name of Concerned Department: Electrical
Name of faculty member/s: (i) Prof. M. D Solanki

→ **GTU Scheme for the subject:**

| Teaching Scheme | | | Credits | Examination Marks | | | | Total Marks |
|-----------------|---|---|---------|-------------------|--------|-----------------|-------|-------------|
| L | T | P | | Theory Marks | | Practical Marks | | |
| | | | C | ESE (E) | PA (M) | ESE(V) | PA(I) | |
| 2 | 0 | 0 | 2 | 70 | 30 | 30 | 20 | 150 |

→ **Course Evaluation Plan for PA (M) Theory Component: Total marks 30**
 In the test of PA (M) component, for all the students have to appear for PAT/RPAT Theoretical exam.

| Marks | PAT |
|-------|-----|
| CO1 | 7.5 |
| CO2 | 7.5 |
| CO3 | 7.5 |
| CO4 | 7.5 |
| CO5 | - |
| CO6 | - |

In PA (M) component, it is mandatory to pass PAT/RPAT exam. If the student obtains less than 12 marks out of 30 in PAT exam, subsequently he/she is supposed to appear for a RPAT and have to clear the remedial test. He/She is eligible to get 12 marks even though the student has obtained marks more than 12 in RPAT.

→ **Course Evaluation Plan for PA (I) Practical Component: Total marks 20**

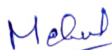
A Workbook to be submitted at the end of sem. In this workbook student has to perform tasks in a group or individual of total max. Marks as 20.

| Marks | Workbook submission |
|-------|---------------------|
| CO1 | 1 |
| CO2 | 2 |
| CO3 | 3 |
| CO4 | 5 |
| CO5 | 5 |
| CO6 | 5 |

NOTE: All above evolution components will be conducted by offline/ online mode as per government guidelines due to COVID-19.

| Assessment Type | Attainment Levels | |
|---------------------|-------------------|--|
| Internal Assessment | Level 1 | 60% of students scoring more than 50% marks in internal assessment tools |
| | Level 2 | 70% of students scoring more than 50% marks in internal assessment tools |
| | Level 3 | 80% of students scoring more than 50% marks in internal assessment tools |

Signature of the faculty members:


 Prof. M. D Solanki


 Prof & HOD (Electrical)

Shantilal Shah Engineering College, Bhavnagar

Electrical Engineering Department

Subject Valuation Scheme (Internal)

Branch : Electrical Engineering
Semester : 6th
Subject : Elements of Electrical Design
Faculty : Prof. M. V. Gojiya
 Prof. G. N. Sarvaiya

Division/Batch : Electrical/All
Subject Code : 3160918
Academic Year : 2021-22

Teaching and Examination Scheme:

| Teaching Scheme | | | Credits C | Examination Marks | | | | Total Marks |
|-----------------|---|---|--------------|-------------------|-------|-----------------|-------|----------------|
| L | T | P | | Theory Marks | | Practical Marks | | |
| | | | | ESE(E) | PA(M) | ESE(V) | PA(I) | |
| 3 | 0 | 0 | 3 | 70 | 30 | 0 | 0 | 100 |

Examination Scheme for PA:


PAT will be conducted during semester. Distribution of marks nearly will be as per below


| Marks | PAT |
|-------|-----|
| CO1 | 00 |
| CO2 | 10 |
| CO3 | 10 |
| CO4 | 10 |

Note: In PA component, for all the students it is mandatory to pass PAT exam. If the student obtains less than 12 marks out of 30 in PAT, subsequently he/she is supposed to appear for a RPAT and having cleared the remedial test he/she is eligible to get 12 marks even though the student has obtained marks more than 12 in RPAT.

| Assessment Type | Attainment Levels | |
|--------------------------------|-------------------|--|
| Internal Assessment | Level 1 | 50% of students scoring more than 50% marks in internal assessment tools |
| | Level 2 | 60% of students scoring more than 50% marks in internal assessment tools |
| | Level 3 | 70% of students scoring more than 50% marks in internal assessment tools |

Signature of Subject Faculties:


 Prof. M. V. Gojiya


 Prof. G. N. Sarvaiya
 (Course – Coordinator)



Prof. & HOD (Electrical)

Shantilal Shah Engineering College, Bhavnagar
Electrical Engineering Department
Subject Valuation Scheme (Internal)

Branch : Electrical Engineering
Semester : 6th
Subject : Electrical Engineering Materials
Faculty : Prof. G. N. Sarvaiya

Division/Batch : Electrical/All
Subject Code : 3160923
Academic Year : 2021-22

Teaching and Examination Scheme:

| Teaching Scheme | | | Credits C | Examination Marks | | | | Total Marks |
|-----------------|---|---|--------------|-------------------|-------|-----------------|-------|----------------|
| L | T | P | | Theory Marks | | Practical Marks | | |
| | | | | ESE(E) | PA(M) | ESE(V) | PA(I) | |
| 3 | 0 | 0 | 3 | 70 | 30 | 0 | 0 | 100 |

Examination Scheme for PA:

PAT will be conducted during semester. Distribution of marks nearly will be as per below

| Marks | PAT |
|-------|-----|
| CO1 | 14 |
| CO2 | 00 |
| CO3 | 16 |
| CO4 | 00 |

Note: In PA component, for all the students it is mandatory to pass PAT/RPAT exam. If the student obtains less than 12 marks out of 30 in PAT, subsequently he/she is supposed to appear for a RPAT and having cleared the remedial test he/she is eligible to get 12 marks even though the student has obtained marks more than 12 in RPAT.

| Assessment Type | Attainment Levels | |
|---------------------|-------------------|--|
| Internal Assessment | Level 1 | 50% of students scoring more than 50%marks in internal assessment tools |
| | Level 2 | 60% of students scoring more than 50% marks in internal assessment tools |
| | Level 3 | 70% of students scoring more than 50% marks in internal assessment tools |

Signature of the Subject Faculty:


 Prof. G N Sarvaiya


 Prof & HOD (Electrical)

Shantil Shah Engineering College, Bhavnagar
Electrical Engineering Department
Subject Evaluation Scheme

Name of the subject (code): Electrical Drive (3160919)
Semester/Branch: B.E. 6th Semester, Electrical Engineering;
Name of Concerned Department: Electrical engineering
Name of faculty member: Prof. M. K. Bhatt

GTU Scheme for the subject:

| Teaching Scheme | | | Credits C | Examination Marks | | | | Total Marks |
|-----------------|----|----|--------------|-------------------|-----------|-----------------|-----------|----------------|
| L | T | P | | Theory Marks | | Practical Marks | | |
| | | | | ESE (E) | PA (M) | ESE Viva (V) | PA (I) | |
| 03 | 01 | 02 | 05 | 70 | 30 | 30 | 20 | 150 |

→ **Course Evaluation Plan for PA (M) Component: Total marks 30**

| Marks | PAT |
|-------|-----|
| CO1 | 8 |
| CO2 | 8 |
| CO3 | 8 |
| CO4 | 6 |

→ **Course Evaluation Plan for PA (I) Component: Total marks 20**

| Marks | Exp 1 | Exp 2 | Exp 3 | Exp 4 | Exp 5 | Exp 6 | Exp 7 | Exp 8 | Exp 9 | Exp 10 |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| CO1 | 2 | | | | | 2 | | | | |
| CO2 | | 2 | 2 | | | | 2 | | | |
| CO3 | | | | 2 | 2 | | | 2 | 2 | |
| CO4 | | | | | | | | | | 2 |

→ **Rubrics: Marks obtained in each experiment based on the rubrics criterion will be normalized as per above distribution and mapping of CO.**



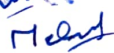
| Criteria | Performance level | | | | |
|---|---|---|--|--|--|
| | Very poor | Poor | Good | Very good | Excellent |
| | 0 | 2 | 3 | 4 | 5 |
| Purpose of experiments / identify objective | Students cannot able to identify the objective of experiments. | Students can able to name the experiments with little description, but not fully aware with objective. | Student can able to explain the objective with satisfactory explanation. | Student can able to identify the objective with proper justification | Students can able to identify objective with correct justification. Student shows the excellent skill to relate the experiments with real life technical issues. |
| Understanding of the experimental set up / software tools | Students cannot able to name of the apparatus/ software tool required in the experiments. | Students can able to name the apparatus/software required in the experiments with little description, but not fully aware with setup. | Student can able to explain use of apparatus / software with satisfactory level. | Student can able to use of all apparatus/ software used in experiments with proper justification | Student can able to use of all apparatus/ software used in experiments with suggesting technical alternate arrangement for the experiment. |

| | | | | | |
|------------------------|---|---|---|--|---|
| Analyzing / Conclusion | Students cannot able to conclude objective of experiment. | Students can able to conclude but not fully aware with justification. | Student can able to conclude with satisfactory explanation. | Student can able to conclude with proper justification | Students can able to conclude with correct justification. Student shows the excellent skill to suggest relevant change in conclusion. |
|------------------------|---|---|---|--|---|

| Assessment Type | Attainment Levels | |
|---------------------|-------------------|--|
| Internal Assessment | Level 1 | 60% of students scoring more than 50% marks in internal assessment tools |
| | Level 2 | 70% of students scoring more than 50% marks in internal assessment tools |
| | Level 3 | 80% of students scoring more than 50% marks in internal assessment tools |

In the test of PA (M) component, if the student obtains less than 12 marks out of 30, subsequently he/she is supposed to appear for a remedial test and having cleared the remedial test he/she is eligible to get 12 marks.

Signature of the faculty members:

- (i) Prof M K Bhatt 
(course coordinator)
- (ii) Prof. T B Maniar 
- (iii) Prof M D Solanki 

Prof & HOD (Electrical)

Shantilal Shah Engineering College, Bhavnagar.

Electrical Engineering Department

Course Evaluation Plan

Name of Subject: Interconnected Power System

Subject Code: 3160920

Academic Year : 2021-22

Semester/Branch: B.E. Sem-6th (Electrical)

Name of Concerned Department : Electrical

Name of Faculty Member(s) : Prof. A. M. Upadhyay

- GTU Scheme for the subject:

| Teaching Scheme | | | Credits C | Examination Marks | | | | Total Marks |
|-----------------|----|----|--------------|-------------------|-------|-----------------|-------|----------------|
| L | T | P | | Theory Marks | | Practical Marks | | |
| | | | | ESE (E) | PA(M) | ESE(V) | PA(I) | |
| 03 | 00 | 02 | 04 | 70 | 30 | 30 | 20 | 150 |

- Course Evaluation Plan for PA (M) Component: Total marks 30

| Course Outcome | Progressive Assessment Test [#] (Descriptive) | Assignment/Presentation ^{##} |
|----------------|---|---------------------------------------|
| CO-1 | - | 3 (Assignment) |
| CO-2 | 7.5 | - |
| CO-3 | - | 6 (Assignment) |
| CO-4 | 6 | - |
| CO-5 | 7.5 | - |
| Total | 21 | 9 |
| Passing Marks | 40% | 40% |

PAT marks will be normalized out of 21. Passing marks for PAT is 8.4 out of 21. Students failing to score passing marks will be allowed to appear in Remedial PAT with the passing standard remaining the same. However, students passing in remedial test shall be deemed to have scored only passing marks, i.e. 8.4 out of 21.

Assignment for CO-1 will be assigned in MS Teams. Students will have to solve and submit them before due date. A presentation on "Control of Voltage and Frequency in Interconnected Power Systems" must be prepared by each student. Presentation will be arranged in online/offline mode depending upon guidelines from higher authorities.

Course Evaluation Plan for PA (I) Component: Total marks 20

| Course Outcome | Laboratory Assignments* | | | | | | | | | |
|----------------|-------------------------|----|----|----|----|----|----|----|----|----|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| CO-1 | - | - | - | - | - | - | - | - | - | - |
| CO-2 | 20 | 20 | 20 | 20 | 20 | - | - | - | - | - |
| CO-3 | - | - | - | - | - | - | - | 20 | - | - |
| CO-4 | - | - | - | - | - | 20 | 20 | - | - | - |
| CO-5 | - | - | - | - | - | - | - | - | 20 | 20 |

* Total marks obtained in laboratory assignments 1 to 10 will be averaged to calculate PA(I) marks obtained out of 20.

| Assessment Type | Attainment Level | |
|---------------------|------------------|--|
| Internal Assessment | Level 1 | 60% of students scoring more than 50% marks in internal assessment tools |
| | Level 2 | 70% of students scoring more than 50% marks in internal assessment tools |
| | Level 3 | 75% of students scoring more than 50% marks in internal assessment tools |

(A.M. Upadhyay)

Name and Signature of Faculty

Prof. & Head

DEVELOPMENT OF RUBRICS FOR EVALUATING THE SKILLS OF STUDENTS BY MAPPING PERFORMANCE CRITERIA WITH COURSE OUTCOMES

INTERNAL EVALUATION (20 MARKS), ACADEMIC YEAR-2021-22

NAME OF COURSE : (31.60920) Interconnected Power System

NAME OF SUBJECT COORDINATOR : A. M. Upadhyay

| S.NO. | CATEGORY | PERFORMANCE CRITERIA/ ASSESSMENT PROCESS | ANALYTICAL SCALE (1 to 5) FOR RATING THE PERFORMANCE OF STUDENT | | | | |
|-------|-------------------------------|--|--|---|--|--|--|
| | | | POOR (1) | AVERAGE (2) | GOOD (3) | VERY GOOD (4) | EXCELLENT (5) |
| 1 | APPLICATION OF THEORY CONCEPT | Laboratory assignment includes a numerical problem which needs to be solved manually as well as using a computer program. | The student does not understand the theory concept or how to apply it for solution of given problem. | The student demonstrates partial understanding of the concept with no/little idea about its application. | The student demonstrates full understanding of the concept and its application with minor errors/suggestions. | The student demonstrates very good understanding of the concept and solves given problem(s) correctly without any errors/suggestions. | The student demonstrates excellent understanding of the concept, applies correctly for solution of the given problem and also has self understanding of its application in various scenarios. |
| 2 | USE OF SOFTWARE TOOLS | A MATLAB program/simulation is to be prepared for the solution of the given problem. | The student is not able to write any algorithm or instructions of the program or is not able to select required simulation blocks. | The student is either able to prepare an algorithm/block diagram for computer program/simulation with some errors/suggestions. | The student is able to prepare a computer program/simulation for solution of given problem using the given data. | The student is able to prepare an interactive computer program/simulation for solution of given problem without errors following few hints/suggestions. | The student is able to prepare a generic user interactive computer program/simulation which would work for solution of a variety of problems based on the same concept. |
| 3 | ANALYSIS OF RESULTS | Output of the program in the form of computed results and/or graphs must be verified for correctness in different scenarios. A valid conclusion must be derived from the information obtained. | The student is not able to verify correctness of the results/graphs. | The student is able to verify the correctness of results/graphs for the given problem but unable to derive some valid conclusions from the results. | The student is able to verify the correctness of results/graphs and is able to make valid conclusions from them for the given problem following a few hints/suggestions. | The student is able to verify the correctness of results/graphs, is able to make valid conclusions, for the given problem without any hints/suggestions. | The student is able to verify the correctness of the results/graphs, draw valid conclusions, and is also able to explain the effect of change in input parameters on the results for the given problem as well as for any similar problem. |
| 4 | PRESENTATION | A laboratory assignment must be prepared and submitted before due date. The assignment must include manual solution of the problem, computer program and its results and the conclusion derived. | The student is not able to prepare the correct lab assignment within prescribed time limit. | The student is able to prepare and submit the lab assignment but has significant errors/corrections or poor/average quality of presentation or there is late submission of assignment without errors. | The student is able to prepare and submit the lab assignment/ manual within prescribed time limit without significant errors/corrections but has average quality of presentation/formatting. | The student is able to prepare and submit the lab assignment within prescribed time limit without errors and has good quality presentation/formatting. | The student is able to prepare and submit the lab assignment within prescribed time limit without any errors and has very good quality presentation/formatting. |