GUJARAT TECHNOLOGICAL UNIVERSITY (GTU)

Competency-focused Outcome-based Green Curriculum-2023 (COGC-2023)
Semester – V

Course Title: Summer Internship - II
(Course Code: 4351704)

Diploma programme in which this course is offered	Semester in which offered
Instrumentation and Control Engineering	5th Semester

1. RATIONALE

Study of Instrumentation & Control engineering covers wide range of knowledge from various other fields of engineering such as chemical, mechanical, electrical, electronics, biomedical and computers. Application of such diversified knowledge in a multidisciplinary branch of instrumentation and control engineering needs to be comprehended by the students during their study. New technologies are adding fastly which effects can be seen in our society. Summer internship is a good options by which students to get flavor of such emerging technology and familiar with industry environment to identify scope and focus of their career development opportunities. Main objective of summer internship is hand-on practice to expose students for thinking about professional career by observing, understanding, adopting mechanism of ongoing work of industry and to obtain various types of skills under internship programme.

The duration of internship will be six weeks. It will be started with commencement of 5th Semester. In the internship, the option is provided to do internship in Government Agencies/ skill centers/social sector/Govt. initiated social schemes/NGOs etc. Any options from following can be opted by the students:

1. **Offline internship in industry** - Student is suggested to select branch specific training in the Process/Manufacturing/Automation/R&D/Maintenance/Service or any relevant Industry. Students are supposed to produce joining letter for starting and relieving letter once the internship is over in case of Offline internship in any industry.
2. **A Mini Project** – In case student not able to find offline internship at industry students can develop project on some suitable topic related to Instrumentation and Control engineering branch under faculty guidance. It can be small fabrication/experimental results/ simulations/Application development/Design and/or Analysis of System(s) etc. Additionally, Institute/department may arrange Visits/technical sessions/workshops from industry experts to give exposure to students about recent technologies and tools.

Students needs to report at institute every 15 days about progress to internal guide in suggested reporting format which is given in syllabus and represent his/her work carried out for monitoring and evaluation purpose.

2. COMPETENCY

The purpose of this course is to help the student to attain the following industry identified competency through summer internship experiences:

- **Develop essential technical skills for designing, assembling, fabricating, automating, maintaining and troubleshooting of Instruments/Processes/ Systems(s)/Electronic Components/Circuits, etc.**

3. COURSE OUTCOMES (COs)

The practical exercises, the underpinning knowledge, and the relevant soft skills associated with this competency are to be developed in the student to display the following COs:

a) Learn and adopt the engineer's role and responsibilities with ethics.
b) Get exposure to the industrial environment for professional activities.
c) Get possible opportunities to learn, understand and sharpen the technical skills required for technical advancement.
d) Develop managerial skills required for professional career.
e) Attain skill for writing technical report and prepare poster for presentation.

4. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P/2)	Examination Scheme				
				Theory Marks		Practical Marks		Total Marks
L	T	P	C	CA	ESE	CA	ESE	
0	0	6	3	0	0	50	50	100

***Legends: L**-Lecture; **T** – Tutorial/Teacher Guided Theory Practice; **P** -Practical; **C** – Credit, **CA** - Continuous Assessment; **ESE** -End Semester Examination.*

Miscellaneous Instructions:

1. **Offline internship in industry:** CA Assessment will be carried out based on submitted progress card by Industry resource person and ESE Assessment will be carried out by institute resources person.
2. **A Mini Project:** CA and ESE Assessment will be carried out based on project work by institute resources person

Common Note:

1. For Summer Internship/A Mini Project evaluation is based on work done, quality of report, performance in viva-voce, presentation etc. The internal / external assessment is based on the student's performance in viva-voce /work record respectively.
2. In case Industry Supervisor is not available, Institute Mentor and/or External Faculty can fill up respective evaluation form.

3. Sample Registration and Evaluation Forms with 15 days work sheet report and student attendance sheet report is given in annexure.
4. All forms are mandatory to be filled at the commencement and completion of Summer Internship – II respectively.
5. It is mandatory to file and map Summer Internship - I (before Semester 3) Registration and Evaluation with respective forms of Summer Internship - II (before Semester 5) so that students get enough exposure of industry / technology. (Mapping doesn't mean same industry/ company/project. It can be independent/different also.)
6. Mapping will be done to ease CA and ESE Evaluations.
7. A Seminar / Webinar can be arranged so that students coming from different industry / institute / project background can share experiences and leanings to their peers.
8. Attached formats for Registration, Completion and Evaluation are suggestive. But, adhering to these formats is anticipated.

List of Documents to be prepared for Submission:

1. All 15 Days Work Report Sheet signed by internal guide (suggested format given in syllabus).
2. Student Attendance Sheet Report for summer internship (suggested format given in syllabus).
3. Detail report duly signed and approved by the internal/external mentor.
4. Presentation softcopy approved by the internal/external mentor.
5. Poster of summer internship activities approved by the internal/external mentor.

Note: Faculty should inform students in advance about summer internship or project as First six weeks will be as summer internship. So students need to finalize offline training from industry or a mini project at institute before commencement of 5th semester and report at institute.

5. AFFECTIVE DOMAIN OUTCOMES

The following affective Domain Outcomes (ADOs) are embedded in many of the above-mentioned COs. More could be added to fulfill the development of this course competency.

a) Work as a leader/a team member as role of Engineer.
b) Practice environmentally friendly methods and processes.
c) Follow safety precautions and ethical practices.

6. SUGGESTED STUDENT ACTIVITIES

Following are the suggested student-related curricular, co-curricular activities which can be undertaken to accelerate the attainment of the various outcomes in this course: Students should perform following activities and prepare reports and give presentation in

front of students and faculty members. They should also collect/record physical evidences for their (student's) portfolio which may be useful for their placement interviews:

a) Perform various tasks given by industry resources person during offline internship.
b) Perform various tasks required to complete project work under guidance of faculty member.
c) Summer Internship program Interns are required to give a presentation before the review committee consisting of a group of academic staff members.
d) The review committee gives feedback and suggests possible improvements in the work.
e) At the end of the program all the Summer Internship program Interns make a poster presentation of the work carried out. The poster presentation is open to the public. It is also evaluated by faculty members.
f) A completion certificate will be issued to all Summer Internship program Interns only after the completion of internship tenure.

7. REFERENCE

- AICTE Internship Policy.pdf (aicte-india.org)

8. SUGGESTED SOFTWARE / LEARNING WEBSITES

An internship is a short term work program usually offered to students by companies and institutes who require staff for assistance at junior levels. Thus for the students undergoing internship a professional learning experience is provided to benefit them in their skills as well as career. It will brush existing skills and provide exposure to new skills. Generally it is provided at entry level in the industry.

Here is a suggestive list for reference only.

- http://www.gksgujarat.org/
- https://anubandham.gujarat.gov.in/home
- https://kaushalyaskilluniversity.ac.in/
- https://www.internshala.com
- https://swayam.gov.in
- https://nptel.ac.in/
- https://neat.aicte-india.org/
- https://www.edx.org/
- https://www.coursera.org/
- https://www.udemy.com/
- https://www.linkedIn.com
- https://www.stumags.com
- https://www.letsintern.com
- https://www.internship.com
- https://www.glassdoor.com

9. PO-COMPETENCY-CO MAPPING

Semester V	Summer Internship - II (Course Code: 4351704)						
	POs						
Competency & Course Outcomes	PO 1 Basic & Discipline specific knowledge	PO 2 Problem Analysis	PO 3 Design/ development of solutions	PO 4 Engineering Tools, Experimentation &Testing	PO 5 Engineering practices for society, sustainability & environment	PO 6 Project Management	PO 7 Life-long learning
Competency	Develop essential technical skills for designing, assembling, fabricating, automating, maintaining and troubleshooting of Instruments/Processes/ Electronic Components and Circuits.						
CO1) Learn and adopt the engineer's role and responsibilities with ethics.	2	2	2	1	1	3	1
CO2) Get exposure to the industrial environment for professional activities.	2	2	2	1	2	2	2
CO3) Get possible opportunities to learn understand and sharpen the technical skills required for technical advancement.	2	2	2	2	3	1	3
CO4) Develop managerial skills required for professional career.	1	2	2	1	3	1	2
CO5) Attain skill for writing technical report and prepare poster for presentation.	1	2	1	1	2	1	2

Legend: '**3'** for high, '**2**' for medium, **'1'** for low and **'-'** for no correlation of each CO with PO.

10. COURSE CURRICULUM DEVELOPMENT COMMITTEE

Member – Board of Studies (GTU), Electrical and Allied branches

Prof. Suresh Z. Shyara, IC Engineering, AVPTI, Rajkot.

Prof. Mahesh J. Vadhavaniya, IC Engineering, Government Polytechnic, Palanpur.

GTU Resource Persons

Prof. S. N. Shah, IC Engineering, Government Polytechnic, Gandhinagar.

Prof. D. J. Modi, IC Engineering, Government Polytechnic, Palanpur.

Annexure - I
Summer Internship-II Registration Form

Note: Students needs to submit this registration form after finalize mode of Summer Internship and before starting Summer Internship.

Student Details												
Enrollment Number												
Student Name												
Student Details	Mobile Number :											
	Email Address:											
Course (Branch)												
Code and Name of the Institute												
Mentor Details (Institute)	Name:											
	Designation:											
	Mobile No:											
	Email Address:											
Industry Details	Name:											
	Address:											
	Email:											
	Phone:											
	Website:											
Mentor Details (Industry)	Name:											
	Designation:											
	Mobile No:											
	Email Address											
Mode of Internship Carried Out	Offline internship in industry / A Mini Project at institute											
Title of the Internship/ Mini Project carried out												
Nature of Work Carried Out	Designing, assembling, fabricating, automating, maintaining and troubleshooting of Instruments/Processes/ System(s)/Electronic Components/Circuits, etc. Other please Specify_____											

Student Signature Faculty Signature

Annexure-II
Summer Internship-II - Suggested Letter for Completion

[Company /Institute/ Department letter head]

No: Date

TO WHOM SO EVER IT MAY CONCERN

This is to certify that, Mr. / Ms. / Mrs. _____

Enrollment No. _____ Student of 5th Semester, Diploma in Instrumentation and Control Engineering, Institute _____

has successfully completed a six-week Summer Internship - II in the field of _____ during the period From the date: _____ to date: _____.

[90% Attendance is mandatory for completion of Internship]

During the period of his/her Summer Internship - II program with us, he / she had been exposed to the following different processes and have gained adequate technical traits. During the Internship he / she were found sincere and hardworking.

1. _____
2. _____
3. _____
4. _____

Industrial Mentor	**Institute Mentor**	**Head of the Department**
(Name and Signature with stamp)	**(Name and Signature with stamp)**	**(Name and Signature with stamp)**

Annexure-III
Summer Internship-II - Evaluation Rubrics
Evaluation Rubrics (Institute)

Enrollment No: _____ **Course (Branch): IC**

Name of the Students: _____

Date of Evaluation: _____

Internal Evaluation – 50 Marks PA (II) (To be carried out by mentor in consultation with Industry Supervisor) Minimum Passing Marks: 20)					
Parameter	**Excellent**	**Good**	**Average**	**Not up the level of Satisfaction**	**Obtained Marks**
Mark range	**8 - 10**	**6 - 8**	**4 - 6**	**Below 4**	
Knowledge acquisition in specific domain. (**10 marks)**					
Skill and attitude attainment in specific domain (**10 marks)**					
Feedback and suggestions given are incorporated? (**10 marks)**					
Quality of the prepared report and poster. (**10 marks)**					
Quality of the presentation. (**10 marks)**					
Total Marks Obtained Out of 50 PA(II)					

Signature: _____ **Institute Resource Examiner Name: _____**

Evaluation Rubrics (Industry)

Enrollment No: _____ **Course (Branch): IC**

Name of the Students: _____

Date of Evaluation: _____

External Evaluation – 50 Marks ESE (II) (To be carried out by the institute mentor) Minimum Passing Marks: 20					
Parameter	**Excellent**	**Good**	**Average**	**Not up the level of Satisfaction**	**Obtained Marks**
Mark range	**8 - 10**	**6 - 8**	**4 - 6**	**Below 4**	
Student regularity during the Internship period and proactive ness/ responsiveness towards the given tasks **(10 Marks)**					
Work Plan, Execution and quality of work in forms of Outcome achieved **(10 Marks)**					
Engineering Tools and Techniques **(10 Marks)**					
Quality of poster design and presentation **(10 Marks)**					
Quality of the report and Skill **(10 Marks)**					

Total Marks Obtained Out of 50 ESE (II)	

Signature: _____ Industry resource/ External Examiner Name: _____

SUGGESTED 15 DAYS WORK SHEET REPORT

Student Name :	
Enrollment No:	
Internship/Project Title	
Tools and Technologies	
Company/ Organization Name	

Student's Activity Details:

Week Number	Start Date to End Date	Tasks to be assigned	Tasks to be completed	Remarks

Signature of Company Person

[TO BE FILLED BY INTERNAL GUIDE/FACULTY ONLY]

Any Suggestion/Remarks:

Signature of Internal Guide/Faculty

SUGGESTED STUDENT ATTENDANCE SHEET REPORT

ORGANIZATION INFORMATION			
Organization Name			
Organization Address			
Organization Email ID			
STUDENT INFORMATION			
Name of Student :			
Enrollment No :		Name of Course:	
Date of Commencement of training:		Date of Completion of Training	
Internship/ Project Title			

Student's Attendance Sheet

Week No	Day of week (- >)	Day1	Day2	Day3	Day4	Day5	Day6	COUNT (present day)
Week 1	Date							
	PR/AB							
Week 2	Date							
	PR/AB							
Week 3	Date							
	PR/AB							
Week 4	Date							
	PR/AB							
Week 5	Date							
	PR/AB							
Week 6	Date							
	PR/AB							
							Total Count of student's presents during internship	
							Total Working days of company during internship	
							Student's percentage present during internship	

NOTE :
1. Attendance sheet should be submitted after completion of training to internal guide of institute/department.
2. Holidays should be marked in RED INK.
3. Absent should be marked as "AB" in RED INK.

Signature of Company internship person with company stamp/seal :

Name of Company internship person:

Contact No of Company internship person :