

GUJARAT TECHNOLOGICAL UNIVERSITY (GTU)

Competency-focused Outcome-based Green Curriculum-2021 (COGC-2021)

Semester-V

Course Title: Summer Internship-II

(Course Code: 4351106)

Diploma programme in which this course is offered	Semester in which offered
Electronics & Communication Engineering	5 th Semester

1. RATIONALE

Idea of Embedded Internships- AICTE has made 7-10 weeks summer internships mandatory in the new curriculum which will equip the students with practical understanding and training about industry practices in a suitable industry or organization. To make education holistic, sports, physical activities, values and ethics have been embedded in the curriculum.

As we can now find out that all Branches of Diploma Engineering are changing rapidly. New technologies are adding fast which effects can be seen in our society. Summer internship is a good option 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 working mechanism of ongoing work of industry and to obtain various types of skills throughout internship program.

This SIX weeks mandatory internship is to equip the students with practical knowledge and provide them exposure to real time industrial environments. Further, in these internships, the option is provided to do internship in Government Agencies/ skill centers/ social sector/ Govt. initiated social schemes/ NGOs etc. The duration of internship will be SIX weeks. It will be after completion of 4th Semester and before the commencement of 5th Semester. Any options from following can be chosen by the students:

- Offline internship in industry** - Student is supposed to produce joining letter for starting and relieving letter once the internship is over in case of Offline internship in any industry.
- Online internships** – Student can select from any of approved /supported / recommended by the All India Council of Technical education for Internship (like Intershala/ NEAT/ Gujarat Knowledge Society and other skill Initiatives etc.) or courses conducted by the state government or any approved University by UGC and State / National Governments.
- A Mini Project** - On some suitable topic related to respective branch. It can be small fabrication / experimental results/ simulations/ Application development / Design and / or Analysis of System(s) etc. depending on the branch of the student. Preferably a single student should carry out a mini-project.

2. COMPETENCY

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

- Develop essential technical skills for a Technician e.g. assembling, fabrication, designing, and maintenance and troubleshooting of Electronic Components, Circuits and Instruments.**

3. COURSE OUTCOMES (COs)

The practical exercises, the underpinning knowledge and the relevant soft skills associated with the identified competency are to be developed in the student for the achievement of the following COs:

- Learn and adopt the engineer's role and responsibilities with ethics.
- Get exposure to the industrial environment for professional activities.
- Get possible opportunities to learn, understand and sharpen the technical skills required for technical advancement.
- Develop managerial skills required for professional career.
- 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				
L	T	P		Theory Marks		Practical Marks		Total Marks
			C	CA	ESE	CA	ESE	
0	0	6	3	0	0	50	50	100

- Offline internship in industry:** CA will be carried out based on submitted progress card by Industry resource person and ESE / Assessment will be carried out by institute resources person.
- Online internships:** CA will be carried out based on submitted certificate and ESE/ Assessment will be carried out by external Faculty by means of viva voc.
- A Mini Project:** 15 marks out of 50 in CA will be allotted based on mini/ micro project work under offline/ online/ Institute by institute resources person.

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

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.

- Work as a leader/a team member as role of Engineer.
- Practice environmentally friendly methods and processes.
- 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:

- Perform various tasks given by industry resources person during offline internship.
- Perform various tasks given during online internship.
- Perform various task required to complete mini project work under guidance of faculty member.
- Summer Internship program Interns are required to give a presentation before review committee consisting of a group of academic staff members.

- e) The review committee gives feedback and suggests possible improvements in the work.
- f) 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.
- g) A completion certificate will be issued to all Summer Internship program Interns only after the completion of internship tenure.

7. SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES (if any)

These are sample strategies, which the teacher can use to accelerate the attainment of the various outcomes in this course. It is desirous to verify that title or subject of internship / training is from the current syllabus and applications of what has been already studied. It may be similar to or fall within any of groups categorized broadly as under:

Communication Applications	Principle of Electronic Communication
Communication Applications	Digital Communication
Communication Applications	Fiber Optics Communication
Communication Applications	Antenna & Wave Propagation
Communication Applications	Microwave and Radar Communication
Communication Applications	Mobile & Wireless Communication
Communication Applications	Computer Networks & Data Communication
Core Electronics Applications	Digital Electronics
Core Electronics Applications	Electronic Circuits & Applications
Core Electronics Applications	Electronic Circuits & Networks
Core Electronics Applications	Electronic Measurements & Instruments
Core Electronics Applications	Industrial Electronics
Core Electronics Applications	Consumer Electronics & Maintenance
Core Electronics Applications	Circuit Design Tools
Core Electronics Applications	Linear Integrated Circuit(Analog Electronics)
Core Electronics Applications	Renewable Energy & Emerging Trend in Electronics
Core Electronics Applications	IoT
Diversified Application	Robotics & Autotronics
Diversified Application	VLSI
Diversified Application	PLC & Industrial Automation
Microcontroller Applications	Microprocessor & Microcontroller
Microcontroller Applications	Embedded System
Programming & Software Practices	Programming In C
Programming & Software Practices	OOPS & Python Programming
Programming & Software Practices	Android App Development

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: 4351106)						
	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 a Technician e.g. assembling, fabrication, designing, maintenance and troubleshooting of Electronic Components, Circuits and Instruments.						
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

Sr. No.	Name and Designation	Institute	Contact No.	Email
1	Shri U. V. Buch- BoS Member and Subject in-charge (EC)	G P Ahmedabad	9825346992	uvbuch@gmail.com

BoS Resource Persons

Sr. No.	Name and Designation	Institute	Contact No.	Email
1.	Dr. A S Pandya, Principal BoS Chairman Electrical & Allied Branches	BPTI, Bhavnagar	9426201171	aspandya22@rediffmail.com
2.	Dr. S N Sampat i/c Principal, BoS MemberEC	LE College Morbi.	9033777389	snsampat@gmail.com

Annexure-I Summer Internship-II Registration Form

Note: Students needs to submit this registration form after finalizing mode of internship.

Student Details												
Enrollment Number												
Student Name												
Student Details	Mobile Number :											
	Email Address:											
Branch												
Code of the Institute	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	Online / Offline/ Mini Project											
Title of the Project/ Internship carried out												

Nature of Work Carried Out	Web Design / Application development (Web / Mobile), Experimental results/ simulations/ Analysis of System(s) etc... Other please Specify_____
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Student Signature

Faculty Signature

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

[Company or Institute letter head]

No:

Date

TO WHOM SO EVER IT MAY CONCERN

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

Enrollment No. _____ Student of _____

Has successfully completed a two week Internship in the field of _____

From the date: _____ to date: _____.

[90% Attendance is mandatory for completion of Internship]

During the period of his/her summer internship program with us, He / She were exposed to following different processes and were found sincere and hardworking.

1. _____

2. _____

3. _____

4. _____

Mentor Signature**Head of Department**

Stamp

Stamp

Annexure-III Summer Internship-II -Evaluation Rubrics for Institute

Evaluation Rubrics (Institute)

Enrollment No: _____

Branch: EC

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: _____

Suggested Evaluation Rubrics for Industry

Evaluation Rubrics (Industry)

Enrollment No: _____

Branch: _____

Name of the Students: _____

Date of Evaluation: _____

External Evaluation – 100 Marks ESE(II) (To be carried out by the) Minimum Passing Marks: 40					
Parameter	Excellent	Good	Average	Not up the level of Satisfaction	Obtained Marks
Mark range	16-20	12-16	8-12	Below 8	
Student regularity during the Internship period and proactive ness/ responsiveness towards the given tasks (20 Marks)					
Work Plan, Execution and quality of work in forms of Outcome achieved (20 Marks)					
Engineering Tools and Techniques (20 Marks)					
Quality of poster design and presentation (20 Marks)					
Quality of the report and Skill (20 Marks)					
Total Marks Obtained Out of 100 ESE(II)					

Signature: _____

Industry resource/ External Examiner Name: _____

Common Note:

- 1) For Summer Internship / Projects / Seminar etc. 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 External Faculty can fill up respective evaluation.

Miscellaneous Instructions:

List of Documents to be prepared for Submission:

- Detail report duly signed and approved by the internal/external mentor
- Presentation softcopy approved by the internal/external mentor
- Poster of summer internship activities approved by the internal/external mentor.

Sample forms for Registration and Evaluation of Summer Internship-II –SI-II are given below:

- 1) Both forms are mandatory to be filled at the commencement and completion of SI-II respectively.
- 2) It is mandatory to file and map SI-I (before Semester 3) Registration and Evaluation with respective forms of SI-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.)
- 3) Mapping will be done to ease CA and ESE Evaluations.
- 4) A Seminar / Webinar can be arranged so that students coming from different industry / institute / project background can share experiences and learnings to their peers.
- 5) Attached formats for Registration, Completion and Evaluation are suggestive. But, adhering to these formats is anticipated.