



# GOVERNMENT COLLEGE OF ENGINEERING AND CERAMIC TECHNOLOGY

*Established 1941*

Accredited by NAAC with Grade A

(2015)

**Program and course contents having element of field projects / research projects  
/ internships as approved by BOS**

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## Project and Internship

For all 5 programmes (three undergraduate and two post graduate programs), project work is compulsory in their course structure (course structures of all programmes are attached herewith). FOR IT and CSE Undergraduate students in the sixth, seventh and eighth semester contain the course in project and CT students pursue it in seventh and eight semester. Summer internship for all undergraduate students held at the end of the six semester with a tenure of 6-8 weeks. At the end of seven semesters they are evaluated based on their summer internship. Post graduation students in Information Technology continue their project work in the second, third and fourth semester whereas students of ceramic Technology are assigned with project work in the third and fourth semester.

There is also provision for industry internship in the final semester of undergraduate courses. SOP of Project work and industry internship are mentioned below.

### Course structure of semesters with project

7 <sup>th</sup> Semester B. Tech Ceramic Technology							
Sl. No.	Type of course	Course Code	Course Title	Hours per week			Credits
				Lecture	Tutorial	Practical	
Theory							
1.	Professional Core Course	PC(CT) 721	Computational Materials Science	3	0	0	3
2.	Professional Core Course	PC(CT) 722	Characterization of Materials	2	0	0	2
3.	Professional Elective Course	PE(CT) 704	Non-oxide Ceramics (A)/ Composites (B)	2	0	0	2

4.	Open Elective Course	OE(CT) 704	Artificial Intelligence & Robotics (A)/ Internet of Things (B)/ Machine Learning (C)	2	0	0	2
5.	Humanities & Social Sciences including Management Courses	HS(CT) 705	Fundamentals of Business Management	3	0	0	3
Sessional/Practical							
1.	Humanities & Social Sciences including Management Courses	HSL(CT) 706	Seminar	0	0	2	1
2.	Project	PROJECT (CT) 701	Project Work I	0	0	08	4
3.	Industrial Training	INDTRG(CT) 701	Training Proficiency	-	-	-	1
				Total credits			18

8 <sup>th</sup> Semester B. Tech Ceramic Technology							
Sl. No.	Type of course	Course Code	Course Title	Hours per week			Credits
				Lecture	Tutorial	Practical	
Sessional/Practical							
1.	Professional Elective Course	PEL(CT) 805	Ceramic Plant & Equipment Design (A)/ Furnace & Kilns Design (B)	0	0	3	1.5
2.	Project	PROJECT(CT) 802	Project Work II	0	0	10	5
3.	Comprehensive Viva Voce	PCL(CT) 823	Comprehensive Viva Voce	-	-	-	1.5
				Total credits			8

### **Details of Projects for B.Tech. in Ceramic Technology**

#### **PROJECT WORK I      PROJECT (CT) 701**

Course objectives:

1. To identify technical and practical issues related to the area of course specialization.

2. To outline annotated bibliography of research demonstrating scholarly skills.
3. To demonstrate the ability to describe, interpret and analyze technical issues.

Course outcomes: The learner will be able to:

CO1- Analyze technical documentations and research articles related to some engineering problem.

CO2- Evaluate the scholarly articles with peers as a team.

CO3- Organize a systematic literature survey on some engineering problem and existing solutions.

CO4- Demonstrate the knowledge, skills and attitudes of a professional engineer during presentation.

CO5- Defend the arguments of research articles cited in survey report during presentations.

## **PROJECT WORK II      PROJECT (CT) 802**

Course objectives:

1. To identify a technical problem for working on it with perspective plan of work.
2. To design experiments on modern techniques and usage of tools.
3. To prepare a well-organized report employing elements of technical writing and critical thinking.

Course outcomes: The learner will be able to:

CO1- Design the solution with appropriate techniques, resources and contemporary tools exhibiting integrity and ethical behavior in engineering practice.

CO2 - Manage project schedule, resources, and work assignments to ensure timely completion.

CO3 - Perform professionally as a team member, accepting responsibility, taking initiative, and providing leadership necessary to ensure Project success.

CO4 - Perform formal and informal Communication with team members to prepare presentation and technical documentation (report).

CO5 - Defend the performance of the implemented project and the implication of the solution.

Information Technology 6 <sup>th</sup> SEMESTER							
SL. NO.	PAPER CODE	PAPER NAME	L	T	P	CONTACT HRs./WEEK	CREDIT
<b>THEORY</b>							
01	PC(CS/IT)617	Computer Networks	3	1	0	4	4
02	PC(CS/IT)618	Compiler Design	3	0	0	3	3
03	PEC(IT)602	Elective-II	3	0	0	3	3
04	OEC(IT/CS)601	Open Elective-I	3	0	0	3	3
05	HS(CS/IT)604	Industrial Management  (Organizational Behavior/ Finance & Accounting)	3	0	0	3	3
<b>SESSIONAL/PRACTICAL</b>							
01	PCL(CS/IT)619	Computer Network lab	0	0	3	3	1.5
02	PROJ(IT)601	Project 1	0	0	6	6	3
03	CLA(IT)-6	Comprehensive Laboratory Assessment	0	0	0	0	1
<b>TOTAL</b>			<b>15</b>	<b>1</b>	<b>9</b>	<b>25</b>	<b>21.5</b>

Information Technology 7 <sup>th</sup> SEMESTER							
SL. NO.	PAPER CODE	PAPER NAME	L	T	P	CONTACT HRs./WEEK	CREDIT
<b>THEORY</b>							
01	PEC(IT)703	Elective-III	3	0	0	3	3
02	PEC(IT)704	Elective-IV	3	0	0	3	3
03	OEC(IT/CS)702	Open Elective II	3	0	0	3	3
<b>SESSIONAL/PRACTICAL</b>							
01	PROJ(IT)702	Project 2	0	0	12	12	6
02	PEC(IT)704 (A/B/C/D)L	Elective-IV Lab.	0	0	3	3	1.5
03	INDTR(IT)701	Industrial Training	0	0	0	0	1
04	CLA(IT)-7	Comprehensive Laboratory Assessment	0	0	0	0	1
<b>TOTAL</b>			<b>11</b>	<b>0</b>	<b>15</b>	<b>24</b>	<b>18.5</b>
Information Technology 8 <sup>th</sup> SEMESTER							
SL. NO.	PAPER CODE	PAPER NAME	L	T	P	CONTACT HRs./WEEK	CREDIT
<b>THEORY</b>							
01	PEC(IT)805	Elective-V	3	0	0	3	3
02	OEC(IT/CS)803	Open Elective-III	3	0	0	3	3
<b>SESSIONAL/PRACTICAL</b>							

01	PROJ(IT)803	Project 3	0	0	16	16	8
02	CVV(IT)802	Comprehensive Viva Voce	0	0	0	0	1
<b>TOTAL</b>			<b>6</b>	<b>0</b>	<b>16</b>	<b>22</b>	<b>15</b>

**Details of Projects for B.Tech in Information Technology**

<b>Name of the course</b>		<b>Project 1</b>
<b>Course Code: PROJ(IT)601</b>		<b>Semester: 6<sup>th</sup></b>
<b>Duration: 6 months</b>		<b>Maximum Marks: 100</b>
<b>Teaching Scheme</b>		<b>Examination Scheme</b>
Theory: 6 hours/week		Internal Evaluation: 80 Marks
Credit Points: 3		End Semester (External) Exam: 20 Marks
<b>Objective:</b>		
1.	To provide with the basic understanding of computer science and knowledge of proficient different techniques.	
2.	Familiar with technical documentations and research articles related to some engineering problem.	
3.	Put in order a systematic literature survey on some engineering problem and existing solutions.	
4.	Evaluate the scholarly articles.	
<b>Pre-Requisite:</b>		
(As required)		



<b>Learning Resources:</b>	
(As required)	
<b>Course Outcomes:</b>	
After completion of this Project 1 the students will be able to -	
<b>CO1</b>	Analyze technical documentations and research articles related to some engineering problem.
<b>CO2</b>	Evaluate the scholarly articles with peer members as a team.
<b>CO3</b>	Organize a systematic literature survey on some engineering problem and existing solutions
<b>CO4</b>	Demonstrate the knowledge, skills and attitudes of a professional engineer during presentation.
<b>CO5</b>	Defend the arguments of research articles cited in survey report during presentations.

<b>Name of the course</b>	<b>Project 2</b>
<b>Course Code: PROJ(IT)702</b>	<b>Semester: 7<sup>th</sup></b>
<b>Duration: 6 months</b>	<b>Maximum Marks: 100</b>
<b>Teaching Scheme</b>	<b>Examination Scheme</b>
Theory: 12 hours/week	Internal Evaluation: 80 Marks
Credit Points: 6	End Semester (External) Exam: 20 Marks
<b>Objective:</b>	
1.	To apply the concept related to mathematics and computer Sc.
2.	Express a sound technical knowledge to undertake problem identification and solution methodology on project topic.
3.	To demonstrate the techniques those have been used to implement the idea.
4.	Propose work solutions to intricate problems exploiting a systematic approach.
<b>Pre-Requisite</b>	

(As required)	
<b>Learning Resources:</b>	
(As required)	
<b>Course Outcomes:</b>	
After completion of this Project 2 the students will be able to -	
CO1	Demonstrate a sound technical knowledge to undertake problem identification and solution approach on project topic.
CO2	Demonstrate the ability to locate and use technical information from multiple sources.
CO3	Design engineering solutions to complex problems utilizing a systematic approach.
CO4	Perform as a team-member and to focus on getting a working project done on time.
CO5	Communicate effectively in speech and writing to make presentation and prepare technical document.

<b>Name of the course</b>	<b>Project 3</b>
<b>Course Code: PROJ(IT)803</b>	<b>Semester: 8<sup>th</sup></b>
<b>Duration: 6 months</b>	<b>Maximum Marks: 100</b>
<b>Teaching Scheme</b>	<b>Examination Scheme</b>
Theory: 16 hours/week	Internal Evaluation: 80 Marks
Credit Points: 8	End Semester (External) Exam: 20 Marks
<b>Objective:</b>	
1.	Design the solution with suitable techniques, resources and modern tools revealing reliability and ethical behaviour in industrial practice.
2.	To apply the concept related to mathematics and Information Technology
3.	To demonstrate the techniques those have been used to implement the idea.

4.	Discuss the experimental results
<b>Pre-Requisite</b>	
(As required)	
<b>Learning Resources:</b>	
(As required)	
<b>Course Outcomes:</b>	
After completion of this Project 3 the students will be able to -	
CO1	Design the solution with appropriate techniques, resources and contemporary tools exhibiting integrity and ethical behavior in engineering practice.
CO2	Manage project schedule, resources, and work assignments to ensure timely completion.
CO3	Perform professionally as a team member, accepting responsibility, taking initiative, and providing leadership necessary to ensure Project success.
CO4	Perform formal and informal Communication with team members to prepare presentation and technical documentation (report).
CO5	Defend the performance of the implemented project and the implication of the solution.

Computer Science & Engineering 6 <sup>th</sup> SEM							
THEORY							
SL. NO.	PAPER CODE	PAPER NAME	L	T	P	CONTACT HRS./WEEK	CREDIT
01	PC(CS/IT)617	Computer Network	3	1	0	4	4
02	PC(CS)618	Compiler Design	3	0	0	3	3

03	PEC(CS)602	Elective-II A. Real Time System B. Information and Coding Theory C. Software Engineering D. AI in Bioinformatics E. Digital Signal Processing F. Cyber Security	3	0	0	3	3
04.	PEC(CS)603	Elective-III A. Machine Learning B. Operation Research C. Cryptography D. Advance Architecture E. Cloud Computing F. Ad-Hoc Sensor Network	3	0	0	3	3
05	HS(CS/IT)604	Industrial Management	3	0	0	3	3
SESSIONAL/PRACTICAL							
01	PCL(CS/IT)619	Computer Network lab	0	0	3	3	1.5
02	PROJ(CS)601	Project 1	0	0	6	6	3
03	CLA(CS)-6	Comprehensive Laboratory Assessment	0	0	0	0	1
TOTAL			15	1	9	25	21.5

Computer Science & Engineering 7<sup>th</sup> SEM

THEORY

S L. N O.	PAPER CODE	PAPER NAME	L	T	P	CONTACT HRS./WEE K	CRE DIT
0 1	OEC(CS/IT)701	Open Elective I A. History of Science and Engineering  B. Organizational Behavior	3	0	0	3	3
0 2	OEC(CS/IT)702	Open Elective II A. Economic Policies in India  B. Soft Skills and Interpersonal Communication	3	0	0	3	3
0 3	OEC(CS/IT)703	Open Elective III A. Programming and Application of Advanced Microprocessors B. Control System C. Mobile Computing	3	0	0	3	3
0 4	PEC(CS)704	Elective-IV A. Web & Internet B. Artificial Intelligence C. Introduction to Deep Learning D. Digital Image processing E. Big Data Analytics	3	0	0	3	3

05	PEC(CS)705	Elective-V A. Internet of Things B. Distributed Database C. Computer Graphics D. Introduction to Quantum Computing E. Data Mining	3	0	0		3	3
SESSIONAL/PRACTICAL								
01	PROJ(CS)702	Project 2	0	0	15			7.5
		SESSIONAL						
01	INDTR(CS)1	Industrial Training Evaluation	0	0	0	0		1
		TOTAL	15	0	15	30		23.5

8 <sup>th</sup> SEM							
SL. NO.	PAPER CODE	PAPER NAME	L	T	P	CONTACT HRS./WEEK	CREDIT
PRACTICAL							
01	PROJ(CS)803	Project 3	0	0	16	16	08
		SESSIONAL					
01	CVV(CS)	Comprehensive Viva Voce	0	0	0	0	2
		TOTAL	0	0	16	16	10

## Details of Projects for B.Tech. in Computer Science and Engineering

<b>Name of the course</b>		<b>Project 1</b>	
<b>Course Code: PROJ(CS)601</b>		<b>Semester: 6<sup>th</sup></b>	
<b>Duration: 6 months</b>		<b>Maximum Marks: 100</b>	
<b>Teaching Scheme</b>		<b>Examination Scheme</b>	
Theory: 6 hours/week		Internal Evaluation: 80 Marks	
Credit Points: 3		End Semester (External) Exam: 20 Marks	
<b>Objective:</b>			
1.	To provide with the basic understanding of computer science and knowledge of proficient different techniques.		
2.	Familiar with technical documentations and research articles related to some engineering problem.		
3.	Put in order a systematic literature survey on some engineering problem and existing solutions.		
4.	Evaluate the scholarly articles.		
<b>Pre-Requisite:</b>			
(As required)			
<b>Learning Resources:</b>			
(As required)			
<b>Course Outcomes:</b>			
After completion of this Project 1 the students will be able to -			
<b>CO1</b>	Analyze technical documentations and research articles related to some engineering problem.		
<b>CO2</b>	Evaluate the scholarly articles with peer members as a team.		

<b>CO3</b>	Organize a systematic literature survey on some engineering problem and existing solutions
<b>CO4</b>	Demonstrate the knowledge, skills and attitudes of a professional engineer during presentation.
<b>CO5</b>	Defend the arguments of research articles cited in survey report during presentations.

<b>Name of the course</b>	<b>Project 2</b>
<b>Course Code: PROJ(CS)702</b>	<b>Semester: 7<sup>th</sup></b>
<b>Duration: 6 months</b>	<b>Maximum Marks: 100</b>
<b>Teaching Scheme</b>	<b>Examination Scheme</b>
Theory: 15 hours/week	Internal Evaluation: 80 Marks
Credit Points: 7.5	End Semester (External) Exam: 20 Marks
<b>Objective:</b>	
1.	To apply the concept related to mathematics and computer Sc.
2.	Express a sound technical knowledge to undertake problem identification and solution methodology on project topic.
3.	To demonstrate the techniques those have been used to implement the idea.
4.	Propose work solutions to intricate problems exploiting a systematic approach.
<b>Pre-Requisite</b>	
(As required)	
<b>Learning Resources:</b>	
(As required)	
<b>Course Outcomes:</b>	
After completion of this Project 2 the students will be able to -	



CO1	Demonstrate a sound technical knowledge to undertake problem identification and solution approach on project topic.
CO2	Demonstrate the ability to locate and use technical information from multiple sources.
CO3	Design engineering solutions to complex problems utilizing a systematic approach.
CO4	Perform as a team-member and to focus on getting a working project done on time.
CO5	Communicate effectively in speech and writing to make presentation and prepare technical document.

<b>Name of the course</b>	<b>Project 3</b>
<b>Course Code: PROJ(CS)803</b>	<b>Semester: 8<sup>th</sup></b>
<b>Duration: 6 months</b>	<b>Maximum Marks: 100</b>
<b>Teaching Scheme</b>	<b>Examination Scheme</b>
Theory: 16 hours/week	Internal Evaluation: 80 Marks
Credit Points: 8	End Semester (External) Exam: 20 Marks
<b>Objective:</b>	
1.	Design the solution with suitable techniques, resources and modern tools revealing reliability and ethical behaviour in industrial practice.
2.	To apply the concept related to mathematics and computer Sc.
3.	To demonstrate the techniques those have been used to implement the idea.
4.	Discuss the experimental results
<b>Pre-Requisite</b>	
(As required)	
<b>Learning Resources:</b>	
(As required)	

**Course Outcomes:**

After completion of this Project 3 the students will be able to -

CO1	Design the solution with appropriate techniques, resources and contemporary tools exhibiting integrity and ethical behavior in engineering practice.
CO2	Manage project schedule, resources, and work assignments to ensure timely completion.
CO3	Perform professionally as a team member, accepting responsibility, taking initiative, and providing leadership necessary to ensure Project success.
CO4	Perform formal and informal Communication with team members to prepare presentation and technical documentation (report).
CO5	Defend the performance of the implemented project and the implication of the solution.

### Ceramic Technology M.Tech 3<sup>rd</sup> Semester

#### Theory

Code	Subject	Contact period/ week				Full Marks	Credit
		L	T	P	Total		
M(CT) 301	Technology Management	4	0	0	4	100	4
M(CT) 302	Research Methodology	4	0	0	4	100	4
M(CT) 381	Dissertation I				20	100	16

	Total Credit of Third Semester				28	300	24
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Ceramic Technology M. Tech 4 <sup>th</sup> Semester							
Sessional							
Code	Subject	Contact period/ week				Full Marks	Credit
		L	T	P	Total		
M(CT) 481	Dissertation II				28	200	22
	Total Credit of Fourth Semester				28	200	22
	<b>Grand Total of Credit</b>						<b>100</b>

## PG Course Structure for Information Technology

Information Technology M.Tech 2 <sup>nd</sup> SEMESTER							
SL. NO.	PAPER CODE	PAPER NAME	L	T	P	CONTACT HRs./WEEK	CREDIT
<b>THEORY</b>							
01	ITPC204	Advanced Operating System	3	1	0	4	4
02	ITPC205	Database Design	3	1	0	4	4
03	ITPC206	Advanced Algorithm	3	1	0	4	4
04	ITPEC203	A: Image and video Processing B: Machine Learning C: Soft Computing	3	0	0	3	3
05	ITPEC204	A: Mobile Computing B: IoT and Its Application C: Data Mining	3	0	0	3	3
06	ITRES201	Research Methodology and IPR	2	0	0	2	2
<b>SESSIONAL/PRACTICAL</b>							
01	ITPCL202	PC Lab. II	0	0	3	3	1.5
02	ITPEC203(A/B/C)L	ITPEC203 Lab.	0	0	3	3	1.5
03	ITPRJ201	Dissertation (Part 1)	0	0	4	4	2
<b>TOTAL</b>			<b>17</b>	<b>3</b>	<b>10</b>	<b>30</b>	<b>25</b>

### Information Technology M.Tech 3<sup>rd</sup> SEMESTER

SL. NO.	PAPER CODE	PAPER NAME	L	T	P	CONTACT HRs./WEEK	CREDI T
<b>THEORY</b>							
01	ITOEC301	A: Quantum Computing B: Big Data Analytics C: Software Project Management D: Information and System Security E: Social Network Analysis	3	0	0	3	3
<b>SESSIONAL/PRACTICAL</b>							
01	ITPRJ302	Dissertation (Part 2)	0	0	18	18	9
02	ITASGN302	Comprehensive Viva-voce	0	0	0	0	1
<b>TOTAL</b>			<b>3</b>	<b>0</b>	<b>18</b>	<b>21</b>	<b>13</b>

### Information Technology M.Tech 4<sup>th</sup> SEMESTER

SL. NO.	PAPER CODE	PAPER NAME	L	T	P	CONTACT HRs./WEEK	CREDI T
<b>SESSIONAL/PRACTICAL</b>							
01	ITPRJ403	Dissertation (Part 3)	0	0	24	24	12
<b>TOTAL</b>			<b>0</b>	<b>0</b>	<b>24</b>	<b>24</b>	<b>12</b>

## **Standard Operating Procedure (SOP) for Project work of B.Tech. course in Information Technology**

The project work of B.Tech. students, a group activity which extends for three semesters as Project 1, Project 2 and Project 3 during 6th, 7th and 8th semester respectively and it is executed as follows :

Step 1: 6th semester students are advised to form groups consisting of 3/4 students and as per the average marks of the groups they are labeled as Group1, Group2....

Step 2: All faculty members submit their project topics to the project coordinator along with a short description of the work to be carried out. In a common departmental meeting, the projects are distributed among the groups of students on priority basis.

Step 3: During 6th semester, students perform a thorough study on the topic, perform literature review and do necessary ground work with the help of the project guide for executing the project work in the subsequent semesters.

Step 4: At the end of the 6th semester they submit a report on the work done in a well defined format and present a seminar with Powerpoint presentation before the faculty members of the department and an external examiner for an assessment of 100 marks, where the marks are awarded as–

by project guide : 80 marks and by external examiner : 20 marks.

Step 5: During the 7th semester, students implement the project work. For this they consult the project guide in the scheduled time as mentioned in the class routine.

Step 6: At the end of 7th semester, the work is presented / demonstrated by the respective group of students before the faculty members of the department and an external examiner. Also they submit a project report in well defined project format. The work is evaluated by the project guide and the external examiner for 100 marks, where the marks are awarded as –by project guide: 80 marks and by external examiner:20 marks.

Step 7: In the 8th semester, students are encouraged for industrial projects. They may perform industrial projects / internships in relevant industries or they may continue internal projects.

Step 8: Regarding internal projects, they may continue the same project with an add-on module or they may opt for a separate project as per their interest under the same project guide.

Step 9: At the end of 8th semester, the work is presented / demonstrated by the respective group of students before the faculty members of the department and an external examiner. They submit a project report in well defined project format. The work is evaluated by the project guide and the external examiner for 100 marks, where the marks are awarded as –by project guide: 80 marks and by external examiner:20 marks.

Step 10 : Regarding industrial projects / internship there is an external project guide from the industry as well as an internal project guide from the department. Project monitoring and evaluation by the internal guide is done as follows: 1st evaluation is made on Project

Formulation after 4 weeks from the commencement of the project. 2nd and 3rd evaluations are made on Project Implementation at the end of 8th and 12th weeks respectively. 4th evaluation is made on Project outcome at the end of 16th week.

Step 11 : At the end of 8th semester, the work is presented / demonstrated by the student before the faculty members of the department and an external examiner and they submit a project report in well defined project format. The work is evaluated by both the project guides (internal and external) and an external examiner for 100 marks, where the marks are awarded as –by internal project guide: 40 marks and by external project guide: 40 marks, by external examiner: 20 marks.

There may be cases where students get the opportunity to undertake industrial projects. In this situation, the student will continue the work as per methods prescribed in step 1 to 6 in the institute. They can complete the rest of the work in the industry in the 8th semester.

If it so happens that students get internships in the 8th semester and the work done in the industry cannot be presented as a project report which is a required document for awarding marks for the project, the student needs to continue the project allotted in the institute.

## **INTERNSHIP GUIDELINES**

**(Applicable from the academic session 2020-2021)**

**(Department of Ceramic Technology)**

Internship in Engineering:

An internship is the phase of time for students when they are trained for their skills they are good at and it gives them a chance to apply their knowledge practically in industries

When should one start an engineering internship?

It is mandatory for engineering students to enrol for an internship, mostly during the last semester of their undergraduate programme.

Objective of internship:

One of the main objectives of an internship is to expose one to a particular job and a profession or industry.

While one might have an idea about what a job is like, he/she won't know until he/she actually performs if it's what he/she thought it was, if he/she has the training and skills to do it and if it's something he/she likes.

**CHALLENGES FACED:**

These are the following common challenges:

- There is not enough work
- There is too much work
- One is afraid to ask questions
- Supervisors forget that he/she is new to the field
- There is competition with other interns



- His/her work is not used
- It's a new lifestyle

Expectations in internship role:

Common intern duties and responsibilities include performing some routine tasks, doing research/projects, creating presentations and shadowing employees.

When an intern is hired, it is looked for career goals that align with tasks the candidate is expected to accomplish, experience working in a team environment and a strong work ethic.

Interns practice teamwork, develop leadership qualities, better communication, project management and other skills by actively contributing. These skill sets attract the interns more towards getting a sound position in the organization.

Are internships must?

Yes, it's a must for engineering students. It gives a practical approach and helps the interns gain industrial experience. It enables the students to develop a professional aptitude and broaden the spectrum of knowledge and experience.

Benefits:

- Apply theory
- Get a feel for the work environment
- Boost confidence
- Build networks
- Increase motivation
- Improve the CV

- Getting a job
- Getting a reference or letter of recommendation

Skills hoped to be gained from internship:

- New/improved skills...
- A more complete (and impressive) resume...
- Recommendations...
- New connections...
- A greater sense of professionalism
- More confidence in career path
- Completed projects/presentations etc.

Advantages and Disadvantages:

- Improved hiring potential. Practical work experience makes one more marketable to employers
- Real-World learning Opportunities. Employers value any meaningful real-world experience one can get while earning the degree.
- There are Financial Downsides

**INTERNSHIP DURATION AND ACADEMIC CREDENTIALS:**

The following framework is proposed to give academic credit for the internship undergone as part of the programme.

A full-time intern is expected to spend 40 - 45 hours per week on Internship, Training, Project work, Seminar activities etc. after completion of 6<sup>th</sup> semester of studies. This will result in about 360-540 hours of total internship duration for B. Tech.

Internships may be full-time or part-time; they are full-time in the summer vacation and part-time during the academic session. Institute curriculum is flexible to adjust internship duration. The institute have the flexibility to schedule internship, Project work, Seminar etc. according to the availability of the opportunities. However, minimum requirement regarding Internship duration should not be below 8 weeks.

### **INTERNSHIP GUIDELINES:**

The T&P cell will arrange internship for students in industries/organization after six/seventh semester (s) as per AICTE norms. Institute may also device online system for arranging & managing internships. The general procedure for arranging internship is given below:

Step 1: Request Letter / Email from the office of Training & Placement cell of the college should go to industry to allot various slots of 8-12 weeks during summer vacation after 6th semester examinations are over, as internship periods for the students.

Step 2: Industry will confirm the training slots and the number of seats allocated for internships via Confirmation Letter / Email. In case the students arrange the training themselves, the confirmation letter will be submitted by the students in the office of Training & Placement through concerned department. Based on the number of slots agreed to by the Industry, TPO will allocate the students to the Industry. In addition, the internship slots may be conveyed through Telephonic or Written Communication (by Fax, Email, etc.) by the TPO or other members of the T&P cell / Head of the department / Faculty members, who are particularly looking after the Internship of the students.

Step 3: Students, on joining Training at the concerned Industry / Organization, submit the Joining Report / Letters / Email.

Step 4: Students undergo industrial training at the concerned Industry / Organization.

Step 5: Students will submit a training report after completion of internship.

Step 6: Training Certificate to be obtained from industry.

Step 7: The Training and Placement Cell / Head of the department keeps track and record of the student internships.

### **GUIDELINES FOR THE STUDENTS:**

Internship & Placement are student centric activities. Therefore, the major role is to be played by the students. TPO may also include involvement of the student in the following activities:

- Design and Printing of Internship & Placement Brochure detailing records – Soft copy as well as Hard copy.
- Preparing list of potential internship providers / recruiters and past recruiters.
- Placement Presentation at various organizations, if required.
- Coordinating activities related to Placement including companies HR team visit to institutes.

At the commencement of the session, the members of the students for training & placement committee would be selected from the interested students, who submit applications to TPO to work with the training & placement committee. Among the volunteers, two/three students would be nominated as “Student Coordinators” who would be assigned major responsibilities and would be accountable to TPO / HOD.

For allotment of internship slots, all the students are advised to submit “student internship programme application” before the prescribed date (Format attached).

The internship / job offer given by the company is to be accepted irrespective of the Company / Job profile or job location or stipend offered.

A student, who will voluntarily give in writing that He / She does not require placement assistance from the Institute, would be exempted from participation in the Placement activities. This could be because of various reasons such as:

– Joining family business, opting for higher education or competitive examination etc.

Though organizations select individual students, Internship and/or Recruitment is a team effort. Hence, all students, while interacting with the recruitment teams / panel members of selection, should be careful and behave responsibly.

### **ALLOCATION OF STUDENTS TO INDUSTRY**

After the allocation of internship slots by the industry to the institute, the students have to be allocated to the industry. In case the industry wants to select the students based on their requirements, the industry can conduct an interaction/ interview with the students and select the students. In case the industry leaves it to the Institute to select the students, TPO may evolve transparent criteria for allocation of students to the industry, based on the requirements of industry and students' interest.

### **INTERNSHIP REPORT**

After completion of Internship, the student should prepare a comprehensive report to indicate what he has observed and learnt in the training period. The student may contact, if required, his Industrial Supervisor / HOD / TPO for assigning special topics and problems and should prepare the final report on the assigned topics. The training report should be signed by the Internship Supervisor, TPO and HOD. The Internship report will be evaluated on the basis of following criteria and viva voce examination in 7<sup>th</sup> semester SEE examination.

Originality.

Adequacy and purposeful write-up.

Organization, format, drawings, sketches, style, language etc.

Variety and relevance of learning experience.

Practical applications, relationships with basic theory and concepts taught in the course.

### **MONITORING & EVALUATION OF INTERNSHIP**

The industrial training of the students will be evaluated through seminar presentation / viva-voce at the Institute in 7<sup>th</sup> semester.

### **EVALUATION THROUGH SEMINAR PRESENTATION/VIVA-VOCE AT THE INSTITUTE**

The student may give a seminar based on his training report on demand, before an expert committee constituted by the concerned department as per norms of the institute.

The evaluation will be based on the following criteria:

Quality of content presented.

Proper planning for presentation.

Effectiveness of presentation.

Depth of knowledge and skills.

Seminar presentation will enable sharing knowledge & experience amongst students & teachers and build communication skills and confidence in students.

### **SUPERVISOR (Industry) EVALUATION OF INTERN**

Student Name: \_\_\_\_\_

Date: \_\_\_\_\_

Work Supervisor: \_\_\_\_\_

Title: \_\_\_\_\_

Company/Organization: \_\_\_\_\_

\_\_\_\_\_

Internship Address: \_\_\_\_\_

Dates of Internship: From \_\_\_\_\_ To \_\_\_\_\_

Please evaluate your intern by indicating the frequency with which you observed the following behaviors:

Parameters	Needs improvement	Satisfactory	Good	Excellent
Behaviors				
Performs in a dependable manner				
Cooperates with co-workers and supervisors				
Shows interest in work				
Learns quickly				
Shows initiative				
Produces high quality work				
Accepts responsibility				
Accepts criticism				
Demonstrates organizational skills				
Uses technical knowledge and expertise				

Shows good judgment				
Demonstrates creativity/originality				
Analyzes problems effectively				
Is self-reliant				
Communicates well				
Writes effectively				
Has a professional attitude				
Gives a professional appearance				
Is punctual				
Uses time effectively				

Overall performance of student intern (circle one):

(Needs improvement/ Satisfactory/ \_\_\_\_\_ Good/ \_\_\_\_\_ Excellent)

Additional comments, if any:

Signature of Industry supervisor\_HR Manager



**STUDENT FEEDBACK OF INTERNSHIP (TO BE FILLED BY STUDENTS AFTER INTERNSHIP COMPLETION)**

Student Name: \_\_\_\_\_

Industrial Supervisor: \_\_\_\_\_

Supervisor Email: \_\_\_\_\_

Date: \_\_\_\_\_ Title: \_\_\_\_\_

Internship is: \_\_\_\_\_ Paid\_\_ Unpaid\_\_\_\_\_

Company/Organization: \_\_\_\_\_

Internship Address: \_\_\_\_\_

Faculty Coordinator: \_\_\_\_\_

Dates of Internship: From \_\_\_\_\_

\*\*\*Please fill out the above in full detail\*\*\*

Department: \_\_\_\_\_

To \_\_\_\_\_

Give a brief description of your internship work (title and tasks for which you were responsible): Was your internship experience related to your major area of study?

In the Institute internship program, faculty members are expected to be mentors for students. Do you feel that your faculty coordinator served such a function? Why or why not?

How well were you able to accomplish the initial goals, tasks and new skills that were set down in your learning contract? In what ways were you able to take a new direction or expand beyond your contract? Why were some goals not accomplished adequately?

In what areas did you most develop and improve?

What has been the most significant accomplishment or satisfying moment of your internship? What did you dislike about the internship?

Considering your overall experience, how would you rate this

internship? (Circle one). (Satisfactory/ Good/ Excellent)

Give suggestions as to how your internship experience could have

been improved. (Could you have handled added responsibility? Would

you have liked more discussions with your professor concerning your

internship? Was closer supervision needed? Was more of an

orientation required?)