

GUJARAT TECHNOLOGICAL UNIVERSITY, AHMEDABAD, GUJARAT**COURSE CURRICULUM
COURSE TITLE: INDUSTRIAL TRAINING
(COURSE CODE: 3350201)**

Diploma Programme in which this course is offered	Semester in which offered
Automobile Engineering	5th Semester

1. RATIONALE

The diploma engineers are required to work in industry to manufacture and test components and parts, assemble automobiles, and in workshops for diagnose problems and repair automobiles. The students need to have industry and workshop exposure, where they can experience real life equipment, materials, instruments and various kinds of automobiles. This course has been designed for the students to have real life experiences to help them prepare for their career. The automotive sector needs skilled and managerial personnel who have technical expertise as well as entrepreneurial qualities to manage the growing automotive industry.

2. LIST OF COMPETENCIES

The course design and implemented with the aim to develop different types of skills leading to the achievement of the following competencies.....

**“Work in industry to manufacture and test parts and components of automobile.
And/or**

“Work in workshop/garage to identify the fault, repair the fault, test the components and reassemble the automobiles.”

3. COURSE OUTCOMES

Students should work in the industry/service centre as trainees so that they are able to acquire different learning out comes to demonstrate following course outcomes.(Students should be able to demonstrate these skills on the type of automobile on which they are trained, the following list is suggestive only, some more skills may be acquired by student depending upon the opportunities they get and in some cases some of the following skills may not be applicable for the automobile on which they have undergone training)

1. Identify different faults/problems (mechanical/electrical) in automobile
2. Rectify the fault/solve problem suitably in automobiles
3. Dismantle and assemble different auto assemblies and sub assemblies.
4. Assess industrial/workshop/automobile/assembly problems and find/suggest possible solutions.
5. Tune Engine
6. Lubricate the automobile
7. Change worn out parts such as gear wire, accelerator wire, brake shoes, clutch plates, oil etc.
8. Test Power steering, power brakes, automated systems such as auto lock, automatic windows etc.

9. Service the automobile (wash, dry, clean air filters, check engine, batteries, lighting etc)
10. Adjust brakes (Hand and paddle) and leavers
11. Balance and Align the wheels (Manual and Auto)
12. Analyze exhaust of the automobile and tune the automobile to achieve the environmental standards.
13. Check and set hydraulic systems of automobile
14. Check the different sensors with car scanner in automobile and identify the location of faulty sensor.

4. TEACHING AND EXAMINATION SCHEME

Course Code	Course Title	Teaching Scheme (In Hours)			Total Credits (Industrial training)	Examination Scheme (3 Hrs)				
						Theory Marks		Practical Marks		Total Marks
		L	T	P	C	ESE	PA	ESE	PA	
3350201	INDUSTRIAL TRAINING	-	-	-	33**	00	00	300	500	800
Total		-	-	-	33**	00	00	300	500	800

L-Lecture; T-Tutorial; P-Practical; ESE – End Semester Exam., PA-Progressive Assessment,

Legends:

* Indicate External exam for practical. (20 students per day will be examined by external examiner.)

**Indicate load of teaching faculty per week per division, for placing the students in training, follow up of students at training (minimum 1 times per month), conduct the presentation with PPT / speak out (minimum 1 times per month at institute).

Evaluation Pattern:

- Progressive Assessment will be done by the internal examiner during monthly visits of teacher to industry and visit of student to institute and at the time of final internal presentation of report at institute level. (Max. Marks=500)
- End Semester External Exam would be conducted by external examiner (Max. Marks= 300)

Progressive Assessment

Internal Faculty should evaluate training on following criteria and marks-(Max. Marks=500)

1. Monthly Presentation with PPT / speak out-(Maximum 150 Marks: Three monthly presentations of 50 marks each) during monthly visits of student to institute
2. Review of Log Book, Weekly Report (FORM-3) & Monthly Report (FORM-4) (Maximum 150 Marks: 50 marks for each monthly review during visit of teacher to industry (three visits)
3. Final project report at the end of training by Internal Faculty-(Maximum 100 Marks)
4. Internal presentation and viva by internal Faculty (Maximum 100 Marks) at the end of the semester

End Semester External Examination

Evaluation of ESE will be done by the External exam for practical (20 students per day (six hours) will be examined by external examiner.) External examiner should evaluate training on following criteria and marks-(Max. Marks=300)

1. Presentation with viva - (Maximum 100 Marks)
2. Practical Skills Exam- (Maximum 100 Marks)
3 to 4 basic/core practical skills out of the total skills which students are supposed to have learnt during their industrial training should be examined depending upon available equipments/instruments at Institute level.
3. Review of Record and Training Report- (Maximum 100 Marks) such as log book, weekly reports, monthly reports, final training report including review of some critical/special experiences student has undergone (and mentioned in his report) at industry.

5. SUGGESTED WORK LOAD

- **Load of guiding and monitoring industrial training per week per division:** for placing the students in training, visit industry/ follow up the students at training at least once in a month for evaluating student's activity and their progress. Also conduct the presentation with PPT / speak out at least once in a month at their parent college per batch for evaluating student's activity and their progress. Total 33 hrs load per week per division may be considered. Institute has to prepare time table for the teachers in such a manner that the concerned teachers remain free for one day (may be different days for different teachers) in each week for industrial visits and conducting the presentation at their parent college.

6. GUIDELINES FOR INDUSTRIAL TRAINING OF DIPLOMA IN AUTOMOBILE ENGINEERING

- Total no. of trainings during the curriculum: once in 5th semester.
- Duration of the training: One full semester.
- Eligibility: As per GTU detention norms at the time of training. Student can be sent for training subject to eligibility.
- Training Area: Students can be trained in Automobile Manufacturing units, authorized Automobile workshop /garage /Service Stations, GSRTC divisional workshops, GSRTC central workshops etc.
- Role of Department:**
 - Department have to send training request letter to various industries well in advance before commencement of training.
 - After getting sufficient number of seats from the industries/garages, students will be placed in different industries/garages for their 5th semester training.
 - Students will have to fill up training form.(attached here with form-1)
 - Department will issue an order letter to industry/garages for the said training mentioning the name and registration number of students.
 - All above activities have to be carried out in vacation / in advance of previous semester as plan out of placement in consultation with students. The students would normally be placed as per their choices, in case of more demand for a particular industry/service centre students would be allocated place based on their relative merit (based on third semester results)

- During the training period, the head of the department will maintain a schedule for follow – up of industrial training and according to it he/she will send the faculty members to various industries.
- The faculty member during the monthly visit to industry will check the progress of the student in the training, his/ her attendance, discipline and project report preparation.
- Department would prepare the schedule of the students monthly visits to institute and would assess their training based on their presentation
- The department has to keep record of above progressive assessment during monthly visits of teachers to industry and students to institute.
- At the end of the training internal faculty member will assess the work done by student based on his presentation at the institute and training report.

Role of Industry:

- Industry will give effective training to the students for improving their practical skills.
- Industry is expected to assign group of the students under training to some middle management level person for supervision and guidance (Training-in-charge).
- Training in-charge has to sign weekly diary (To certify the work done by students) with appropriate remarks.
- Industry may allot project to individual or group of students under training and students has to prepare report on the same project.
- Training in-charge are requested to guide students for preparing their project report.
- Industry is expected to maintain attendance for the student under training and report any irregularity of the students to their parent college.
- Industry is also expected to issue a certificate of attending training on their letter head with comments if any for student's record and motivation.

7. GUIDE LINE FOR STUDENTS

- Students would interact with the identified faculty of the department to suggest his choices for suitable industry/service centre
- Students have to fill the forms duly sealed and signed by authorities along with training order letter and submit it to training officer in the industry on the first day of training. (attached here with form-2)
- Student would carry with him/her the Identity card issued by institute during training period
- He/she will have to get all the necessary information from the training officer regarding schedule of the training, rules and regulations of the industry. Student is expected to follow these rules, regulations, procedures etc obediently.
- During the training period students has to keep record of all the useful information in Log book and maintain the weekly diary (attached here with form-3).
- He/she has to prepare a detailed report and presentations for each monthly visit to institute
- Prepare final report about the whole training for submitting to the department at the time of final presentation and viva

The training report may contain

- Title page
- Certificate
- Abstract
- Acknowledgement
- Index
- Introduction of industry/garage

- Industry/garage lay out and modify modern garage layout (at training place)
 - Hierarchy of industry/organization chart.
 - Types of major equipments/instruments/machines used in industry with their specification, approximate cost and specific use.
 - Particulars of Practical Experiences in industry/workshop - Production/ Assembly/ Testing of automobiles/ assemblies parts, Engine and gear box overhauls, Major vehicle repairs, Faults and remedies of vehicle repairs, Maintenance and preventive maintenance of vehicles.
 - Additional data/information on – cost reduction, repair / reconditioning of parts, accidental vehicle studies, Safety features, cost estimates of major repairs, modifications, etc.
 - Special/challenging experiences encountered during training if any
 - My liking & disliking of work places-
 - References
 - Bibliography
- It is mandatory for students to maintain and fulfill criteria for attendance framed by Gujarat Technological University for the term to be granted.

8. SUGGESTED LEARNING RESOURCES

Students may visit websites related to automobiles being manufactured/repared as their learning tool during industrial visit. Source of learning websites are already given during previous semesters. Search videos, animations for preparation of PPT/ speak out as well literature for project report during the training period.

9. SPECIAL INSTRUCTIONAL STRATEGIES (If any)

- a. Visit industry/ follow up the students at training at least once in a month for evaluating student's activity and their progress.
- b. Conduct the presentation with PPT / speak out at least once in a month at their parent college per batch for evaluating student's activity and their progress.

10. COURSE CURRICULUM DEVELOPMENT COMMITTEE

1. **Prof. M.J. Pathak, H.O.D.**, Auto.Dept. Sir Bhavsinhji Polytechnic Inst., Bhavnagar.
2. **Prof. D.A. Dave**, H.O.D., Auto.Dept. Sir Bhavsinhji Polytechnic Inst., Bhavnagar.
3. **Prof. A.K. Nanavati**, Lecturer, Automobile Dept.G.P., Ahmadabad.
4. **Prof.M.N.Vibhakar**, Lecturer, Auto. Dept. DR.S&SS Gandhi Polytechnic, Surat
5. **Prof. D.J. Gohel**, Lecturer, Automobile Dept.,C.U.Shah Polytechnic, Surendranagar.
6. **Prof. S.V. Trivedi**, H.O.D., Auto. Dept.,Parul Inst. of Technology, Waghodia, Vadodara.
7. **Prof. A.C. Suthar**, Lecturer, Automobile Dept. MLIDS, Bhandu
8. **Prof. Sulay Patel**, H.O.D., Auto. Dept.,L.J. Polytechnic, Ahmadabad.

Coordinator & Faculties from NITTTR Bhopal

1. Prof. C. K. Chugh, Department of Mechanical Engineering
2. Prof Shashi Kant Gupta, Coordinator for State of Gujarat.

FORM-1

તારીખ -

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એનરોલમેન્ટ નંબર-

મોબાઇલ નંબર-

ડિપ્લોમા ઓટો. એન્જી. સેમે.-૪

સરનામું -

પ્રતિ

આટોમોબાઇલ ખાતાના વડાશ્રી,

વિષય -ઇન્ડસ્ટ્રિયલ ટ્રેનીંગ સ્થળની પસંદગી અને બાહેધરી પસંદ કરેલ તાલીમ સ્થળનું નામ-

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બાહેધરી -જીટીયુના નિયમાનુસાર હું ટ્રેનીંગમાં જવા માટેની પૂર્વ જરૂરિયાત પૂરી ન કરી શકું તો હું નિયમ મુજબ ટ્રેનીંગ ચાલુ રાખવાપાત્ર ઠરીશ નહીં અને આવા સંજોગોમાં મારી ટ્રેનીંગ છોડી દેવાનીબાહેધરી આપું છું.

વાલી ની સહી

વિદ્યાર્થીની સહી

તારીખ -

નામ-

એનરોલમેન્ટ નંબર-

મોબાઇલ નંબર-

ડિપ્લોમા ઓટો. એન્જી. સેમે.-૪

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વાલી ની સહી

વિદ્યાર્થીની સહી

FORM-2

FROM: _____

To,
The Principal

Subject: Joining report of _____

As per your letter No. _____ Dated _____

I have reported for training at

On _____ The weekly off day of the industry is _____

Thanking you

Yours faithfully

()

Signature and Stamp of Officer in-charge

(To be send immediately after joining the industry)

FORM-3**GUJARAT TECHNOLOGICAL UNIVERSITY**
(NAME OF THE INSTITUTE)
AUTOMOBILE ENGINEERING DEPARTMENT
TRAINEES WEEKLY REPORT

Trainee Name:-

Name of Organization:-

Enrollment No:-

Dept. Sec:-

Week commencing from date _____ to date _____

Day & Date	Abstract of Work done (Details of work with details of automobile)	Remarks of Training supervisor (If any)

Day & Date	Abstract of Work done	Remarks of Training supervisor With sign

* Excellent / very good / good/ average / below average /poor.

* Please retain whichever is Applicable depending upon regularity, Punctuality, Sincerity, Interest taken by the student. Weekly reports must be submitted with final project report.

Sign of Student

Date _____

Sign of Faculty
(at the time of monthly visit)

Sign. Of Controlling Officer
of Industry with Designation

FORM-4
Monthly Inspection & Interactions Report

(Duration: to)

The teacher should visit the industry/workshop once a month and after interactions with student and industry, he should provide a feedback report.

- 1.Name & No of student.....
- 2.Sign of student.....
- 3.Name of industry
- 4.Sections and Departments visited.....

No.	Incidents/Activities observed	Maximum Marks	Marks Obtained	Comments on performance
a	Work performed in the duration (as per Log Book & Weekly Report) Teacher should sign logbook and weekly report on this occasion.	30		
b	Interaction with student about work performed by him	20		

Overall Comments.....
.....
.....

Name of industry Supervisors/Engineers/Managers with whom interacted:

Comment if any (Based on interaction with industry supervisor)

.....
.....
.....

Advice to student if any:.....

.....
.....

Signature of teacher

FORM-5
Evaluation Record of Monthly Presentation at Institute

Sr. No.	Name	Enrollment Number	Date of presentation	Marks obtained in each presentation (out of 50)	Total (Max Marks 150)

Signature of faculty.....

Name and Designation

(NAME OF THE INSTITUTE)

AUTOMOBILE ENGINEERING DEPARTMENT						
Course Title: INDUSTRIAL TRAINING (Code: 3350201)						
Evaluation of External Examiner						
SR NO	NAME OF THE STUDENT	ENROLLMENT NO.	Presentation and Viva (Maximum 100 Marks)	Practical Skills Examination (Maximum 100 Marks)	Review of Log Records and Report (Maximum 100 Marks)	TOTAL (Maximum 300)
1						
2						
3						
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External Examiner

(NAME OF THE INSTITUTE)							
AUTOMOBILE ENGINEERING DEPARTMENT							
Course Title: INDUSTRIAL TRAINING (Code: 3350201)							
Evaluation of Internal Examiner							
SR NO.	NAME OF THE STUDENT	ENROLLMENT NO.	Presentati on with PPT / speak out Max Marks-150	Log Book, Weekly Report & Monthly Report Max Marks-150	Final training report Max Marks-100	Inter nal viva Max Mark 100	TOTAL (Max Marks 500)
1							
2							
3							
4							
5							
6							
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Internal Examiner

