

GUJARAT TECHNOLOGICAL UNIVERSITY, AHMEDABAD, GUJARAT

COURSE CURRICULUM
COURSE TITLE: INDUSTRIAL TRAINING & PROJECT PHASE-1
(COURSE CODE: 3365501)

Diploma Programme in which this course is offered	Semester in which offered
Fabrication Technology	SIXTH

1. RATIONALE

The diploma engineers are required to work in fabrication industry where manufacturing activities of components and parts, sub-assemblies, group assemblies & final assemblies of different fabricated / welded process equipments, structures, industrial & petrochemical piping systems, offshore structures and ship building / ship recycling are carried out. Various activities involved are Designing, Material Planning, Production Planning, Estimation & Costing, Conventional and Automated Production, Welding according to related Codes and Standards, Inspection, Testing, Quality Assurance, Maintenance, Human Resource Management, Marketing and After Sales Services. This course of Industrial Training & Project Phase-1 has been designed for the students to have real life experience world of work to help them prepare for their carrier.

2. LIST OF COMPETENCIES

This course of Industrial Training & Project Phase-1 is designed and implemented with the aim to develop different types of skills leading to achievement of following competences:

1. To work in manufacturing departments of Fabrication Industry effectively and satisfactorily.
2. To work in production planning and control department of Fabrication Industry.
3. To work in Quality control and Quality assurance department.
4. To work in Design & drafting department.
5. To work in maintenance department of Process Industries.
6. To supervise site work of fabrication.

3. COURSE OUTCOMES (CO's)

The training should be given in such a manner that students are able to acquire required learning outcomes in cognitive, psychomotor and affective domain to demonstrate following course outcome:

1. Perform supervisory and managerial skill in fabrication industry / organization.
2. Maintain good interpersonal relation in fabrication industry / organization.
3. Develop skills to motivate & train junior personnel for their career development.
4. Solve industrial disputes arising due to behavioral problems.
5. Develop employable personality.
6. Solve industry defined problems.
7. Prepare presentation of given industry defined minor / major project.

4. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)	Examination Scheme				Total Marks
L	T	P		Theory Marks		Practical Marks		
			C	ESE	PA	ESE	PA	800
--	--	--	33*	--	--	300	500	

Legends: L-Lecture; T – Tutorial/Teacher Guided Student Activity; P - Practical; C – Credit;; ESE - End Semester Examination; PA - Progressive Assessment.

NOTES :

1. Training placement may be all over India, preferably within or nearby Gujarat
2. Training period will be 24 weeks per semester
3. *33 hours are indicated to maintain the maximum limit of Credits allowed for each Semester. However, students would be working actually for 48 hours per week in Industry.
4. As this training is approved by the Board of Apprenticeship Training (Western Region), Mumbai, the industrial organization may register the student trainee under the Apprenticeship Act.

PROGRESSIVE ASSESSMENT

1. Progressive Assessment (PA) will be done on the basis of Mid semester submission and presentation, Feedback reports of industries and Follow-up visits by departmental faculty.
2. Duration and dates for Mid sem submission and presentation for Progressive Assessment (PA) will be decided by the department as per suitability.

END SEMESTER INTERNAL EXAMINATION

The evaluation of ESE will be done by the internal examiner. The examiner should evaluate training on following:

1. 10 min PPT Presentation concluding with question answer session.
2. Viva on case study reports, minor reports and IDP (Industry Defined Project) project report.

5. SUGGESTED WORK LOAD

No teaching load for faculty is considered for this industrial training

6. GUIDELINES TO STUDENTS FOR TRAINING & PROJECT PREPARATION

Following documents will be prepared and signed by the students prior to their placement for training. These documents will be submitted to the Industrial Organization Concerned:

1. Biographical sketch of students (Annexure-1)
2. Bonafide certificate (Annexure-2)
3. Terms & condition for on job training (Annexure-3)

4. Confirmation of understanding (Annexure-4)
5. Aims of Industrial Training and Tentative Training areas. (Annexure-5)
6. Accidental insurance policy taken by student.

Following documents will be prepared and get it signed by the industrial authority which will be submitted for assessment of the students during their mid semester and end semester submission:

A. FOR MID SEMESTER SUBMISSION :

1. Quarterly Feedback – the assessment of student during training by concerned industry authority (Annexure-6)
2. Certificate of attendance (Annexure-7)
3. Daily attendance sheet (Annexure-8)
4. Day wise Weekly reports (Annexure-9)
5. All assignments given by the fabrication department faculty
6. Minor report (Spiral binding – 2 copies)
7. 10 case study report (spiral binding – 2 copies)
8. MCQ assignment (Hard & soft copy)
9. Topic Name of Industry Defined Project (IDP) suggested by Industrial guide
10. Names of Group members of Industry Defined Project (IDP).

B. FOR END SEMESTER SUBMISSION :

1. Training completion Certificate issued by the Industry authority
2. Quarterly Feedback – the assessment of student during training by concerned industry authority
3. Certificate of attendance
4. Daily attendance sheet
5. Day wise Weekly reports
6. All assignment signed by the fabrication department faculty during midsem submission
7. IDP (Industry Defined Project) report – 1 copy for department & 1 copy for student signed by industry authority (Annexure-10)
8. Minor report – 1 copy for department & 1 copy for student signed by industry authority
9. 10 case study report - 1 copy for department & 1 copy for student signed by industry authority
10. Soft copy of following document on re-writeable CD:
 - a. 10 case study PPT
 - b. 10 case study report
 - c. Minor report
 - d. Minor report PPT
 - e. IDP (Industry Defined Project) report
 - f. IDP (Industry Defined Project) report PPT
 - g. Research paper
 - h. Research paper PPT
 - i. MCQ soft copy
 - j. Project plan
 - k. AutoCAD drawing 2D & 3D solid modeling

7. SUGGESTED LEARNING RESOURCES

1. Industry website
2. Library of Industry
3. AutoCAD software
4. MS Project software
5. MRP software
6. Learning websites suggested in previous semester courses syllabus
7. Technical journals / Bulletins
8. Training centre of industry
9. Manuals of ISO certification for industry
10. Fabrication drawings
11. WPS / WPQ/ PQR
12. Codes & standards used in industry
13. Latest technical research paper available on internet
14. E-resources
15. Website of District Industry Center.

8. SPECIAL INSTRUCTIONAL STRATEGIES

1. Generally TWO follow-up visits by department faculty per semester per industry may be suitably arranged if required.
2. Follow-up visit of ONE Industry per day will be arranged to interact with respective industry personals for progressive assessment and feedback.
3. Conduct mid semester and end semester submission, assessment, PPT presentation for evaluating students' achievements.
4. Conduct viva by internal examiner.

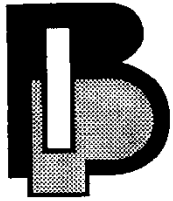
9. COURSE CURRICULUM DEVELOPMENT COMMITTEE

Faculty Members from Polytechnics

- **Prof. P.B.PATHAK**, Convener & HOD, Dept of Fabrication Technology, Sir B.P.I., Bhavnagar
- **Prof. B.K.GANDHI**, Sr. Lecturer, Dept of Fabrication Technology, Sir B.P.I., Bhavnagar
- **Prof. S.Y.MERCHANT**, Sr. Lecturer, Dept of Fabrication Technology, Sir B.P.I., Bhavnagar

Co-coordinator and Faculty Members from NITTTR Bhopal

ANNEXURE-1



SIR BHAVSINHJI POLYTECHNIC INSTITUTE
BHAVNAGAR – 364002
DEPARTMENT OF FABRICATION TECHNOLOGY



BIOGRAPHICAL SKETCH OF STUDENT

FULL NAME:-

GTU ENROLLMENT NO:-

DATE OF BIRTH:-

HEIGHT:- ' ' (Cms) WEIGHT:- Kgs.

BLOOD GROUP:-

PERMANENT ADDRESS:-

PIN CODE:-

MOBILE NO. :- (1) _____ (SELF), (2) _____ (HOME)

E-MAIL ADDRESS:-

QUALIFICATION:-

SR NO.	SSC	HSC	CERTIFICATE COURSE	1 ST SEM	2 ND SEM	3 RD SEM	4 TH SEM
1) SPI							
2) CPI							

HOBBIES:- (1) _____ (2) _____ (3) _____

LANGUAGES KNOWN:- (1) _____ (2) _____ (3) _____

WORK AREA OF INTEREST:- (PLEASE ✓ TICK MARK YOUR CHOICE)

- DESIGN / PLANNING / INDUSTRIAL ENGG. / PRODUCTION / WELDING / QA-QC / NDT/ PURCHASE / ESTIMATION-COSTING / MAINTENANCE/MARKETING

SHORTTERM TRAINING TAKEN AT:- _____ (WEEK)

➤ PRODUCT:- _____ WORK AREA:- _____

EXTRA ACTIVITY DONE IN DEPARTMENT:- _____

MEMBER IN COMMITTEE:- _____

OCCUPATION OF PARENT:- _____

MOBILE NO.:- _____

Date:- _____

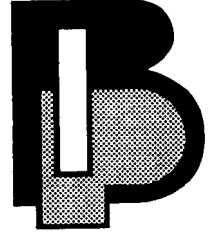
Signature of Student:- _____

ANNEXURE-2

Phone: (Office) 91-278-2515393 (F) 2426742



SIR BHAVSINHJI POLYTECHNIC INSTITUTE
VIDHYANAGAR, BHAVNAGAR – 364 002.
*UNDER COMMISSIONERATE OF TECHNICAL
EDUCATION, GUJARAT*
EMAIL: principalbpti@yahoo.co.in

WEB SITE: www.sirbpti.org.in

Ref. No.: BPI/FAB.TECH./OJT -20__

Date: __/__/20__.

CERTIFICATE**Bonafide Certificate Issued to the Student Undergoing Sandwich Training**

This is to certify that Mr./Miss _____ is a Student of VI & VII Semester **Diploma Programme in Fabrication Technology** from Sir Bhavsinhji Polytechnic Institute, Bhavnagar. This On Job Training under SANDWICH PATTERN COURSE is recognized by the Board of Apprenticeship Training (Western Region), Mumbai.

His Training period is from: _____ to _____.

Date:- __/__/20__.

Place:-Bhavnagar

PRINCIPAL

ANNEXURE-3

**DEPARTMENT OF FABRICATION TECHNOLOGY
SIR BHAVSINHJI POLYTECHNIC INSTITUTE
BHAVNAGAR**

“TERMS AND CONDITION FOR ON JOB TRAINING”

- 1) During the period of training, the trainee will be governed by the rules and regulation in force from time to time as prescribed by the concerned industrial organization.
- 2) The concerned industrial organization and Sir Bhavsinhji Polytechnic Institute, Bhavnagar shall not be liable for any accident if occurs during the training period and the provisions of the workmen’s compensation Act shall not be applicable for any injury.
- 3) The trainee will have to strictly obey & follow the safety rules of the organization. The training will at the full risk of the trainee himself.
- 4) The trainee shall not divulge or disclose any information, data or technical know – how pertaining to the Design, Process and Product of the Industrial organization.
- 5) The training shall automatically come to an end on the expiry of the referred training period.
- 6) The trainee will be reporting to H. R. Manager (Training) for his/her assignments and placements in various department of the industrial organization.

I have gone through the above stated terms and conditions for training.
I unconditionally accept the offer and undertake to abide by above.

PLACE: _____
DATE : _____

SIGNATURE: _____
NAME, ADDRESS & CONTACT NO. OF STUDENT: _____

MO.NO: _____

ANNEXURE-4**CONFIRMATION OF UNDERSTANDING**

I _____ Student of Fabrication Technology Diploma Programme of SIR BHAVSINHJI POLYTECHNIC INSTITUTE, BHAVNAGAR, Enrolment No. _____ Confirm the following :-

- (1) I have to join _____ Organization for my On Job Industrial Training Phase-1 from _____ Dt:- _____ up to Dt.:- _____ at my own risk.
- (2) During my above said training period, I will be abide by rules & regulation of the Industrial Organization.
- (3) I will maintain Punctuality, Regularity and Discipline. I will follow safety norms in total. If, I am Found/Reported not fulfilling it, I understand that my training will be Discontinued with immediate effect and, subsequently I will be detained from granting the term as per GTU norms.
- (4) I understand that my Institute will take disciplinary actions against me for my misconduct during training period.

Date: _____

Signature: _____

Place: _____

Name: _____

AIMS OF INDUSTRIAL TRAINING**1. Personality Development:-**

1. To develop adaptability to the changing environment.
2. To develop communication skills and clarity of thoughts.
3. To acquaint with behavioral techniques of the industry.
4. To develop Interpersonal relationship techniques through positive attitude and commitment to the responsibility.
5. To develop creativity through innovative ideas.
6. To develop competency according to need of industries.
7. To develop professional attitude and confidence.
8. To appreciate the necessity of goal fixing and time management.
9. To develop supervisory ability and team work.
10. To develop ability of SWOT analysis.

2. Technical Competency:-

1. To develop self working skill through hands on practice.
2. To study and interpret the design drawing, shopfloor drawing, working drawing.
3. To identify the raw material, sequence of operations and tools & consumables reads.
4. To develop skills for stage inspection, final inspection and testing.
5. To identify requirement of machine or equipment for particular operation.
6. To identify requirement of Jigs/Fixtures for particular operation.
7. To get involved in different supervisory functions.
8. To get information related to live problems on the shop floors.
9. To develop ability to take-up new challenges.
10. To undertake assignments, projects, case studies etc.
11. To prepare projects/models.
12. To write report of On Job Training.

TRAINING AREAS IN FABRICATION INDUSTRY

The students is expected to work in various department of the Industry, collect relevant information and maintain daily notes for preparation of final training report. The suggested areas of training are as follows:-

1.1 Familiarisation with:

1. Organisational structure
2. Various Departments and Sections
3. General layout of plant
4. Stores and Material Handling
5. Communication system, reporting techniques and record keeping
6. Awareness of safety

1.2 Design and Drafting:

1. Design data and Reference
2. Standards and Codes
3. Study of drawing of different Items/Products
4. Shop drawing
5. Preparation and retrieval of drawings including coding and indexing
6. Blue-print reading
7. Dimensioning and tolerancing
8. Cost estimation from drawings
9. Use of computers in design and drafting.

1.3 Stores and Purchase:

1. Stores organisation
2. Store management material storage system
3. Purchase procedure and record keeping
4. Material indenting and issue procedure
5. Codification and Classification of materials

1.4 Planning:

1. Material Planning and Bills of Materials
2. Process Planning
3. Standard and special tools (Jigs, Fixtures)
4. Time estimation (Operation wise)
5. Work order Scheduling
6. Progress Planning and Follow-up

1.5 Shop Floor Activities:

1. Shop organisation
2. Equipment, Machine and Consumable selection
3. Allocation of work to workmen with reference to priority and work-orders on hand
4. Material marking, cutting and preparation welding
5. Pre-punching, Bending, Rolling, Fit-up and Set-up
6. Different welding processes
7. WPS / WPQ / PQR
8. Process inspection
9. Fabrication calculation
10. Reports of shift wise production and pending work.
11. Co-ordination with Planning, Stores, Tool crib and Maintenance department
12. Safety and good house keeping

1.6 Inspection, Quality Control and Testing:

1. Raw material Inspection
2. Stage wise inspection
3. Final inspection and testing procedure
4. Role of third party inspector before, during and after welding
5. Selection of instruments and equipment's for inspection
6. Calibration of instruments
7. NDT / DT methods
8. Preparation of standard test piece
9. Codes and Standards for inspection and testing
10. Moke-up test
11. Quality Assurance Procedure / Plan

1.7 Surface Treatment and Painting:

1. Surface treatment techniques
2. Equipment/materials used
3. Codes and Standards
4. Paint selection criteria and Painting procedure

1.8 Maintenance:

1. Maintenance organisation
2. Maintenance procedures adopted
3. Wear measurement and Prevention
4. Corrosion Monitoring and Prevention
5. Maintenance Records

1.9 Cost Calculation:

1. Cost of raw material, labour and overheads
2. Total cost calculation and profit for product
3. Tender preparation
4. Typical terms and conditions for a contract

1.10 Shipment of Goods:

1. Packing and forwarding of prepared goods
2. Preshipment Inspection and precautions
3. Despatch documents.

TRAINING AREAS IN CHEMICAL, PETROCHEMICAL OR PROCESS INDUSTRIES

1. Familiarisation with organisation structure, various Departments/Sections, general Layout of the Plant, Stores, Material Handling, Service Department & Maintenance Department
2. Communication System, Reporting techniques and Record Keeping
3. Types of Pumps, Valves, Steams traps, Seals, Gaskets. 'O' Ringe and Packings
4. Various types of vessels and equipment in the plant
5. Piping layout, Piping Isometric
6. Piping drawing (P & ID, GAD, PFD)
7. Utility department equipment equipments and its function
8. Responsibility of maintenance engineer
9. Maintenance tools and equipments
10. Maintenance activity planning
11. Maintenance record keeping
12. Lay out of plant
13. Safety systems
14. Stores and Purchase activity
15. Material handling methods
16. Design and Drawing Department
17. Instruments for flow, pressure and temperature measurements
18. Vibration measurement
19. Condition monitoring and Condition based maintenance
20. Corrosion monitoring and prevention
21. Vibration monitoring, analysis and prevention
22. Quality control of product
23. D. G. Set maintenance
24. Erection, Installation. Foundation and Testing of equipment
25. Environment and Pollution control (ISO 14000)
26. Personnel, HRM activities and Industrial relations
27. Influence management.

ANNEXURE-6**QUARTERLY FEEDBACK – the assessment of student during training by concerned industry authority**

Name of Students:-

Quarter No.:- 1 / 2 / 3 / 4 (PLEASE ✓ TICK MARK AS APPLICABLE)

Sr.No.	Description	Excellent	Very Good	Good	Average	Poor
1	Punctuality					
2	Discipline					
3	Job Knowledge					
4	OutPut-Quantity					
5	Self Motivation/ Initiative					
6	Getting along with the People(Team Working)					
7	Communication Skill					
	(A) Oral					
	(B) Written					
8	Self Learning					
9	Creativity/ Creative Problem Solving					
10	Resourcefulness					
11	Any Other Specific Remark					
12	No. of Leave Days					

Signature of Manager -HR& Admin

Signature of Training Incharge

Date:-

Name & Place of Organization:-

ANNEXURE-7**CERTIFICATE OF ATTENDANCE**

This is to certify that Mr. / Ms. _____ has successfully undergone On-Job Training from date _____ to date _____. His/Her attendance in the organization for this period is _____ days out of _____ working days. He/She has been paid stipend for _____ days during this period.

TRAINING
INCHARGE

MANAGER
HR & ADMIN

DATE :

NAME & PLACE
OF ORGANIZATION :

ANNEXURE-8

SIR BHAVSINHJI POLYTECHNIC INSTITUTE BHAVNAGAR
FABRICATION TECHNOLOGY DEPARTMENT
DAILY PRESENCE REPORT:- TRAINING PHASE – 1

Name of Student: _____ Name of Industry: _____

Date	Date wise Signature of Student						
	Month & year	Month & year	Month & year	Month & year	Month & year	Month & year	Month & year
1							
2							
3							
4							
5							
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7							
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21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							
Present days	____ Day s	____ Day s	____ Day s	____ Day s	____ Day s	____ Day s	____ Day s
Absent days	____ Day s	____ Day s	____ Day s	____ Day s	____ Day s	____ Day s	____ Day s
Stipend							

paid							
MID-SEM SUBMISSION & EVALUATION				END-SEM SUBMISSION & EVALUATION			
Sign. Of Training Incharge:- Date:-				Sign. Of Training Incharge:- Date:-			

ANNEXURE-9

FORMAT OF STUDENT'S WEEKLY REPORT

NEVER SAY 'ચાલશે' TO QUALITY QUALITY IS OUR HABIT

GUJARAT TECHNOLOGICAL UNIVERSITY, AHMEDABAD.
SIR BHAVSINHJI POLYTECHNIC INSTITUTE, BHAVNAGAR.
DEPARTMENT OF FABRICATION TECHNOLOGY

Phone : (0278) 2515393/2524372/2524371 EXT. 141/142/143/175/176 • Fax : (0278) 2426742,
 E-mail: principalbpti@yahoo.co.in / fabhod@rediffmail.com

STUDENT'S WEEKLY DIARY OF ON JOB TRAINING (OJT)
 Dt. ___ / ___ / 2014 to ___ / ___ / 2015

En. No.

		6	4	9	0	3	5	5		
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Name of Student : _____

Name of Org. : _____ Name of Department : _____

COMPETENCY PROFILE:

(1) **Technical Competency :**

- Drawing interpretation ● Measuring, Marking & Cutting Methods ● M/C or Equipment with its specification
- Welding/Fabrication Process ● Power Source ● Jig Fixture Used ● Use of Code & Standard for Welding & Fabrication (ASME, ASTM, API, TEMA, EJMA, SSPC) ● Use of Code & Standard for Ship Building/Construction
- Process Parameter selection ● WPS, WPQ & PQR ● Costing & Estimating ● Productivity Improvement Technique
- Work Measurement ● Auto Cad ● Fabrication Tolerance ● Weld Defects, Causes & Remedies ● DT/NDT Method
- Fabrication Sequence ● Fabrication Calculation ● Fit-Up and Set-Up and Set-Up ● Safety (EHS) ● Planning (MS Projects, Primavera) ● Design ● Third Party Inspection ● Documentation and Record ● Corrosion, Paint, Coating & Insulation ● Piping Engineering (ASME B31.3).

(2) **Inter - Personal Behavioral Competency :**

- Effective Communication ● Dealing with People ● Positive Mental Attitude ● Honesty & Sincerity ● Commitment
- Dedication ● Punctuality & Regularity ● Dressing ● Values ● Cost Effectiveness ● Self Motivation ● Team Spirit
- Emotional Intelligence ● Caring Behavior.

DATE WISE REPORT :

Date : _____	Day : _____	Time of Joining : _____	Time of Leaving : _____

FRONT PAGE

Date : _____ Day : _____ Time of Joining : _____ Time of Leaving : _____	
<p style="text-align: center;">Brief Details of Student own self analysis - Give one line answer of each question.</p> <p>➤ Can you project your strength through this work or content? Yes / No</p> <p>➤ Can you get job by preparing this weekly report? Yes / No</p> <p>➤ Do you feel this work will improve your self - confidence? Yes / No</p> <p>➤ State modification or extra effort you have put in existing information available in shop? _____</p> <p>➤ State referred and remembered the code clauses? _____</p> <p style="text-align: right;">Signature of Student</p>	
<p>Grading of Trainee (Please Tick) and Suggestion From Industry's Guide: Good / Fair / Below Average / Poor.</p> <p>Date : ____ / ____ / 2014</p> <p style="text-align: right;">Signature of Officer In Charge of Dept. / Section (Industry)</p> <p>Grading of Trainee may be given depending upon the judgement about his punctuality, regularity, Sincerity interest taken, work done etc.</p> <p style="text-align: right;">Signature of Guide Teacher (INSTITUTE)</p> <p>Date of Receipt :</p>	

LAST PAGE

ANNEXURE-10

GUJARAT TECHNOLOGICAL UNIVERSITY
649: SIR BHAVSINHJI POLYTECHNIC INSTITUTE, BHAVNAGAR
55 : DEPARTMENT OF FABRICATION TECHNOLOGY

CERTIFICATE

This is to certify that this Industry Defined Project – 1 (Semester VI) entitled

_____ (Title of IDP)

Submitted by

Mr./Miss. _____ Enrl.

No. _____

(Name of student & Enrolment No.)

In the partial fulfillment for the award of certificate of
SUB. CODE & NAME: 3365501 INDUSTRIAL TRAINING & PROJECT PHASE-1

at _____
_____ (Department, Name & Place of industry) has been carried out under my supervision and guidance. The matter compiled in this IDP has not been submitted earlier or is not copied / reproduced for submission of any other Diploma / Degree IDP.

Place:

Date;

(Sign)

INDUSTRY GUIDE

Name of Guide:

Designation:

Department:

Name & Place of Organization:

(Sign)

INSTITUTE GUIDE

Name of Guide:

Lecturer in Fabrication Tech.

Department of Fabrication Tech.

Sir Bhavsinhji Polytechnic Institute,
BHAVNAGAR (GUJARAT)

(Prof. P. B. PATHAK)

HEAD OF DEPARTMENT

Department of Fabrication Tech.

Sir Bhavsinhji Polytechnic Institute,
BHAVNAGAR (GUJARAT)

CONCEPTUAL INDUSTRY DEFINED PROJECT (IDP)

1. Select and confirm Industry guide and Institute guide for IDP.
2. Identify and confirm project title of IDP. Make TITLE PAGE
3. Prepare topic wise INDEX in given format

CONTENT

SR. NO.	TOPIC	PAGE NO. FROM - TO

LIST OF FIGURES

SR. NO.	TITLE OF FIGURE	PAGE NO.

LIST OF TABLES

SR. NO.	TITLE OF TABLE	PAGE NO.

4. Approval and Certification of IDP by Industry guide, Institute guide and Head of Fabrication Technology Department Sir B.P.T.I., Bhavnagar **in given format**
5. Decide sample design data.
6. Prepare design consideration for the project item as per applicable code/standard.
7. Draft design drawings of project item.
8. Prepare "Material of Construction" in standard format as per ASME sec. IIA/B/C/
9. Identify and prepare lists of resources required (men, machine, material and money)
10. Prepare production planning.
11. Prepare production schedule.
12. Prepare Gantt chart in MS project with resource allocation.
13. Prepare Estimation of cost of the project.
14. Prepare WPS, WPQ and PQR as per ASME sec. IX.
15. Prepare weld plan and test plan as per ASME sec. IX.
16. Identify NDT application as per ASME sec V and IX.
17. Prepare 3D sectional solid modeling of project showing internals (**in soft and color hard copy**).
18. Prepare PPT (Power Point Presentation) for the IDP (Topics Sr.No. 4 to 18).
19. list of references

SR. NO.	TITLE OF REFERENCE	AUTHOR / PUBLICATION / EDITION / SOURCE

NOTE : put marking number of reference in the write-up of the project

20. Prepare "Research Paper & its PPT Presentation" of key area of IDP.

NOTE: If working model of the project item is prepared, it will be given due weightage.

