

GUJARAT TECHNOLOGICAL UNIVERSITY, AHMEDABAD, GUJARAT

**COURSE CURRICULUM
COURSE TITLE: SELF EMPLOYEMENT AND ENTREPRENEURSHIP
DEVELOPMENT
(COURSE CODE: 3351906)**

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

1. RATIONALE.

The emerging concept of self-reliance at individual and national level - has significant impact on current developing economy. Future social expectations towards engineering professionals would be certainly as job creators and not as purely job seekers. Upgraded technological and changing economic environment has opened up wide horizons of business areas-including in service sectors too. This course deals with the key concern areas of self-employment and entrepreneurship development. This course is directed to help students to develop and shape their creativity and to understand peripheral influencing aspects. The content will certainly help students to think in a direction to establish a new enterprise using fundamental knowledge.

2. LIST OF COMPETENCY.

The course content should be taught and implemented with the aim to develop different types of skills so that students are able to acquire following competencies:

- **Develop entrepreneurship and self-employment abilities to start any venture**
- **Plan, use, monitor and control resources optimally and economically.**

3. COURSE OUTCOMES.

The theory should be taught and practical should be carried out in such a manner that students are able to acquire different learning outcomes in cognitive, psychomotor and affective domain to demonstrate following course outcomes.

- i. Identify entrepreneurial quality.
- ii. Develop the ability to select potential areas for self-employment.
- iii. Select appropriate agency / ies for technical and financial support.
- iv. Prepare project setup planning and project report.
- v. Explain SWOT analysis and strategies to achieve goals.
- vi. Identify risk factors of project and their remedial measures.

4. TEACHING AND EXAMINATION SCHEME.

Teaching Scheme (In Hours)			Total Credits (L+T+P)	Examination Scheme				Total Marks
				Theory Marks		Practical Marks		
L	T	P	C	ESE	PA	ESE	PA	
3	0	2	5	70	30	20	30	150

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

5. COURSE DETAILS

Unit	Major Learning Outcomes (in cognitive domain)	Topics and Sub-topics
Unit – I Introduction to self-employment and entrepreneurship development.	1a. Appreciate the need of self-employment and entrepreneurship development. 1b. Explore inner creativity and innovativeness in identifying areas for self-employment and entrepreneurship development.	1.1 Introduction of self-employment <ol style="list-style-type: none"> i. Concept and need in present Indian job market context. ii. Characteristics of self-employment areas for mechanical engineering field. iii. Broader ways to identify self-employment areas in mechanical engineering. 1.2 Creativity- concept, examples related to applications in mechanical engineering, ways to develop. 1.3 Innovativeness- concept, examples related to applications in mechanical engineering, ways to develop. 1.4 Entrepreneurship development: <ol style="list-style-type: none"> i. Concept and need. ii. Scope in local and global market. iii. Qualities of entrepreneur and Characteristics of Diploma holder as a self-employer like developing networking and personal contacts, communication skills, transferable work skills, positive work skills, conflict resolution, professional dress, workplace legal issues, work ethic, etc. 1.5 Concept and importance of productivity, quality, cost consciousness and customers' satisfaction. 1.6 Types of enterprise- <ol style="list-style-type: none"> i. Sole partnership. ii. Partnership firm. iii. Joint stock company. iv. Co-operative society.
Unit II Entrepreneurial support agencies.	2a. Know registration process/ procedure for enterprise. 2b. Explore the avenues for getting beneficial promotional schemes for establishment of new enterprise.	2.1. Definition – Micro, small and medium industries. 2.2. Registration process of an enterprise with Government agencies. 2.3. Name, type and role of state and national level support agencies for: <ol style="list-style-type: none"> i. Sources of information. ii. Financial assistance. iii. Technical assistance. iv. Training. 2.4 Current state & national level promotional schemes for establishment of new

Unit	Major Learning Outcomes (in cognitive domain)	Topics and Sub-topics
<p>Unit – III</p> <p>Project set up planning.</p>	<p>3a. Understand process of product selection and stages of product development.</p> <p>3b. Select appropriate process considering productivity.</p> <p>3c. Determination of capacity based on identified product & process.</p> <p>3d. Select proper location and prepare suitable plant layout.</p>	<p>enterprise</p> <p>3.1 Product (Physical and service both-having mechanical features) selection:</p> <ol style="list-style-type: none"> i. Concept and importance ii. Product selection iii. Effect of competitive or similar types of products on product selection iv. Product development stages. <p>3.2 Process Selection:</p> <ol style="list-style-type: none"> i. Concept and importance. ii. Factors affecting process selection. iii. Technology life cycle. iv. Productivity-concept & importance. v. Flexibility. <p>3.3 Process Conversion- Capacity Planning :</p> <ol style="list-style-type: none"> i. Concept. ii. Importance. iii. Basic method to assess / estimate capacity. <p>3.4 Selection of location and layouts:</p> <ol style="list-style-type: none"> i. Concept. ii. Factors affecting selection of location. iii. Objectives and types of plant layout. iv. Factors affecting plant layout.
<p>Unit – IV</p> <p>Project proposal planning.</p>	<p>4a. Describe the Management of the critical resources.</p> <p>4b. Define Marketing.</p> <p>4c. Explain need for enterprise, 4Ps channels (product, price, place and promotion).</p> <p>4d. Prepare preliminary and detailed project report.</p>	<p>4.1 7-M resources.</p> <p>4.2 Marketing- definition, need for enterprise, 4Ps channels (product, price, place and promotion).</p> <p>4.3 Market survey-concept, need and methods.</p> <p>4.4 Managing finance :</p> <ol style="list-style-type: none"> i. Terminology used in financial management. ii. Concept of financial statement and types (balance sheet, profit & loss statement and funds flow statement). <p>4.5 Project report preparation for mechanical feature based product:</p> <ol style="list-style-type: none"> i. Meaning of project planning and report. ii. Feasibility study. iii. Details required for preparing project plan. iv. Project cost estimation. v. Cost, Volume and Profit (CVP) analysis. vi. Preliminary project report (PPR) and detailed project report (DPR).

Unit	Major Learning Outcomes (in cognitive domain)	Topics and Sub-topics
Unit – V Enterprise and risk management.	5a. Know strategies to overcome risk areas.	5.1 Concept of risk in the context of enterprise / project. 5.2 Uncertainty and certainty of project elements. 5.3 Decision making under risk. 5.4 Methods of risk management. 5.5 Strength, Weakness, Opportunity and Threat (SWOT) analysis.
Unit – VI Case studies.	6a. Analyze success and failures of entrepreneur & self employer and integrate positive conclusions.	6.1 Case studies of entrepreneur and self employer. : (at least two for success and two for failure.) i. Important features. ii. Reasons for success and failures. iii. Analyzing success and failure criteria. iv. Integration of case analysis conclusions in enterprise management for improvement.

6. SUGGESTED SPECIFICATION TABLE WITH HOURS AND MARKS (THEORY).

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
I	Introduction to self-employment and entrepreneurship development.	8	8	2	4	14
II	Entrepreneurial support agencies	5	6	2	0	8
III	Project set up planning.	10	4	8	4	16
IV	Project proposal planning.	8	3	4	7	14
V	Enterprise and risk management.	5	2	4	2	8
VI	Case studies.	6	0	0	10	10
	Total	42	23	20	27	70

Legends: R = Remember U = Understand; A = Apply and above levels (Bloom's revised taxonomy)

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table.

General Notes:

- If mid semester test is part of continuous evaluation, unit numbers I, III (Up to 3.3 only) and IV are to be considered.
- Ask the questions from each topic as per marks weight age. Numerical questions are to be asked only if it is specified. Optional questions must be asked from the same topic.

7. SUGGESTED LIST OF EXERCISES/PRACTICALS.

The practical/exercises should be properly designed and implemented with an attempt to develop different types of skills (**outcomes in psychomotor and affective domain**) so that students are able to acquire the competencies/programme outcomes. Following is the list of practical exercises for guidance.

*Note: Here only outcomes in psychomotor domain are listed as practical/exercises. However, if these practical/exercises are completed appropriately, they would also lead to development of certain outcomes in affective domain which would in turn lead to development of **Course Outcomes** related to affective domain. Thus over all development of **Programme Outcomes** (as given in a common list at the beginning of curriculum document for this programme) would be assured.*

Faculty should refer to that common list and should ensure that students also acquire outcomes in affective domain which are required for overall achievement of Programme Outcomes/Course Outcomes.

Sr. No.	Unit No.	Practical Exercises (outcomes in Psychomotor Domain)	Approx Hours. required
1	ALL	Preparatory activity: a. List various types of industries. b. Narrate need of self employment. c. Anticipate importance of entrepreneurship development.	2
2	I	Creativeness and innovativeness: a. Teacher will assign any one mechanical feature based (in a group of not more than 5-6 students) item/product,(may be pen, gear, mouse, notebook, chair, table, fan, mobile, bicycle, etc.). List at least ten uses of this item/product other than pre-defined. Think out of box. b. Teacher will assign any one mechanical feature based (in a group of not more than 5-6 students) process, product or service, tangible or intangible, (may be milk packaging, service offers, camera, farm equipments, machine tools, automobiles, tools, travelling bags, material handling, logistics, construction, customer services, etc.), List at least ten innovations of assigned process, product or service. Imagine out of box. c. List at least ten mechanical engineering products which have passed through innovativeness.	4
3	I	Identification of self-employment areas: a. Teacher will assign this exercise in group of 5-6 students. b. List at least five mechanical feature based areas which have, in group's opinion, self-employment potential. Select any one promising area. c. Develop market survey format for the selected area. d. Perform market survey for self-employment	4

		<p>opportunities.</p> <p>e. Describe the outcome. Also narrate the experience.</p> <p>f. It is compulsory to attach photographs of group conducting market survey.</p>	
4	II	<p>Visit report:</p> <p>a. Visit nearby :</p> <p>i. District Industries Centre (DIC).</p> <p>ii. Any one financial institution including bank.</p> <p>iii. Training institute / GITCO/EDI/ iNDEXTb/etc.</p> <p>b. Prepare the visit report which include followings:</p> <p>i. Brief history of organization.</p> <p>ii. Type and details of services /support/ assistance being given.</p> <p>iii. Any other information which are useful to be self-employer or entrepreneur.</p> <p>iv. Brochures/technical literature collected from agencies.</p>	4
5	III and IV	<p>Preparing project feasibility report of assigned product:</p> <p>a. Teacher will assign any one product (physical or service based having mechanical features) to the group of 5-6 students.</p> <p>b. Prepare project feasibility report (Technical and financial). Specifically include capacity requirement calculations and project set up planning details. Also present the same to whole batch.</p>	8
6	VI	<p>Case analysis and presentations:</p> <p>a. Teacher will assign one case of successful entrepreneur and one case of failed entrepreneur to the group of 5-6 students. Student will discuss in group, will analyze and will present the same to whole batch. Student will also prepare the report on analysis. Case may be put up with printed pages but analysis has to be hand written.</p>	6
Total Hours			28

Notes:

- It is compulsory to prepare log book of exercises. It is also required to get each exercise recorded in logbook, checked and duly dated signed by teacher. PA component of practical marks is dependent on continuous and timely evaluation of exercises.
- Term work report must not include any photocopy, printed manual/pages, litho, etc. It must be hand written / hand drawn by student only.
- For practical ESE part, students are to be assessed for competencies achieved.

8. SUGGESTED LIST OF STUDENT ACTIVITIES

The student activities are same as given in list of practical/exercises. Teacher may give more such activities to interested/bright students.

9. SPECIAL INSTRUCTIONAL STRATEGIES (IF Any)

During practical exercises teacher should not prescribe solutions to students and should motivate them to come out with different alternatives (even if they may not be feasible) and should allow them to try and learn on their own from their mistakes. Teacher should help students only when they are completely stuck.

10. SUGGESTED LEARNING RESOURCES**A) List of Books**

S. No.	Title of Book	Author	Publication
1.	Developing Entrepreneurship		Pareek & Co. Learning systems, Delhi.
2.	Entrepreneurship & Venture - Management	Clifford and Bombak, Joseph R. Momanso.	
3.	Planning an Industrial unit	J. N. Vyas.	
4.	Small Industries management	Karmakar M.B.	
5.	Manual for the preparation of industrial - feasibility studies		UNIDO
6.	New project opportunities		GITCO
7.	Creativity	Pradeep Khandwala	
8.	Project profile for reserved - Development commissioner SSI, Items - VOL, I, II & III New Delhi. Small scale industry - Ministry of Industry Govt. of India. Policy & Perceptive, Dialogue with the Entrepreneur – GSFC, Import-Export Policy for SSI - Govt. of India.	GOVERNMENT PUBLICATIONS.	GOVERNMENT PUBLICATIONS.
9.	EDI STUDY MATERIAL	EDI, BHAT, Ahmedabad	Website : http://www.ediindia.org
10.	Entrepreneurship development and Management	R.K.Singal	S.K.Kataria and Sons.

B) List of Learning Websites.

- i. <http://www.ediindia.org>
- ii. <http://niesbud.nic.in/docs/SelfEmploymentBook.pdf>
- iii. <http://smallb.in/>
- iv. <http://www.msme.gov.in/>
- v. <http://nimsme.org/>
- vi. <http://www.nsic.co.in/>

- vii. <http://iie.nic.in/>
- viii. http://msme.gov.in/guidelines_pmegp_24092008.pdf
- ix. <http://www.gujagro.org/pdf/guidelines.pdf>
- x. <http://www.entrepreneurshipsecret.com/8-factors-to-be-considered-in-products-selection/#sthash.goWj3LcV.dpbs>

11. COURSE CURRICULUM DEVELOPMENT COMMITTEE

Faculty Members from Polytechnics.

- **Prof. R.B.Patel**, Lecturer in Mechanical Engineering, RCTI,Ahmedabad.
- **Prof. A.M.Talsaniya**, Lecturer in Mechanical Engineering, Sir BPI, Bhavnagar.
- **Prof. Patel Kalpesh P.**, Head of Mechanical Engineering, B.S.Patel Polytechnic, Kherava.
- **Prof. Patel Shailesh Kantilal**, Head of Mechanical Engineering, Swami Sachidanand Polytechnic College, Visnagar.

Coordinator and Faculty Members from NITTTR Bhopal.

- **Prof. S.K.Pradhan**, Associate Professor, Mechanical Engg. NITTTR,Bhopal
- **Dr. A.K.Sarathe**, Associate Professor, Mechanical Engg. NITTTR,Bhopal