GUJARAT TECHNOLOGICAL UNIVERSITY (GTU)

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

Course Title: Entrepreneurship & Start-ups
(Course Code: 4300021)

Diploma programmer in which this course is offered	Semester in which offered
All Branches of Diploma Engineering	5th Semester

1.   RATIONALE

Entrepreneurs have significant impact on our country's current developing economy. The social expectations towards engineering professionals are certainly emerging as job creators especially with the thrust given to "Make in India" and "Vocal for Local" campaigns. Startup India is a well-known flagship initiative of the Government of India, intended to catalyze startup culture and build a strong and inclusive ecosystem for innovation and entrepreneurship. The last 6 years have witnessed tremendous growth of start-ups i.e. from 733 in 2016-17 to 14000 in 2021-22. This course focuses on the basic roles, skills and functions of entrepreneurship with special attention to startup. The course is directed to help students to enhance capabilities in the field of managing the given task as well as to understand peripheral influencing aspects for starting a new business. It will certainly help students to think in a direction to establish a small industry /start-up and develop /validate it using fundamental know how.

2.   COMPETENCY

The purpose of this course is to help the student to attain the following industry identified competency through various teaching learning experiences:

- **Establish a small enterprise /start-up validate it and make it scalable.**

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

Upon completion of the course, the student will be able to demonstrate knowledge of the following topics:
1) Understanding the dynamic role of entrepreneurship and Startups by Acquiring Entrepreneurial spirit and resourcefulness, quality, competency, and motivation
2) Identify a Business Idea and implement it
3) Select suitable Management practices like leadership and Ownership, resource institutes
4) Overview of Support Agencies and Incubators
5) Building Project Proposal & knowing CSR , Ethics, Ex-Im, & Exit strategies

4.   TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)	Total Credits (L+T+P/2)	Examination Scheme		
		Theory Marks	Practical	Total Marks

L	T	P	C	CA	ESE	Marks		
						CA	ESE	
3	0	0	3	30*	70	0	0	100

(*): Out of 30 marks under the theory CA, 10 marks are for assessment of the micro-project to facilitate integration of COs and the remaining 20 marks is the average of 2 tests to be taken during the semester for the assessing the attainment of the cognitive domain UOs required for the attainment of the COs.

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

5.   SUGGESTED Soft PRACTICAL EXERCISES (During Theory)

The entrepreneurial or start-up journey begins by readying for your future dream from college projects and pursuing the same beyond college hours also. It is encouraged to go through COs and identify traits and search for various state and national agencies for your entrepreneurship / start-up journey and convert the same into successful product in market.

The following practical outcomes (SPrOs) are the sub-components of the Course Outcomes (COs). Some of the **SPrOs** marked **'*'** are compulsory, as they are crucial for that particular CO at the 'Precision Level' of Dave's Taxonomy related to 'Psychomotor Domain'.

Note

 i. *Though the course does not contain any Practical work, a few **Practical Exercises** can be designed and offered by the respective course teacher to develop the industry relevant skills/outcomes to match the COs. The below table is only a suggestive list.*

 ii. *The following are some **sample** 'Process' and 'Product' related skills (more may be added/deleted depending on the course) that occur in the above listed **Practical Exercises** of this course required which are embedded in the COs and ultimately the competency.*

Sr. No.	Sample Performance Indicators for the PrOs	Weightage in %
1	Entrepreneur Traits and Behavior Modelling	30
2	Various State and Central Entrepreneurship Promotional Schemes and Start-up Policies	30
3	Business Model for a Startup and study of Unicorns*	40
Total		**100**

6. AFFECTIVE DOMAIN OUTCOMES

The following **sample** Affective Domain Outcomes (ADOs) are embedded in many of the above-mentioned COs and PrOs. More could be added to fulfill the development of this course competency.

 a. Work as a leader/a team member (while doing a micro-project).
 b. Model behavioral practices of an entrepreneur while planning for an enterprise
 c. Practice ethics and consider methods/ processes that reduce waste and/or possibly conserve environment in designing a new business till it's commercialization.

The ADOs are best developed through the laboratory/field-based exercises. Moreover, the level of achievement of the ADOs according to Krathwohl's 'Affective Domain Taxonomy' should gradually increase as planned below:

i.   'Valuing Level' in 1st year-Planning
ii.   'Organization Level' in 2nd year-Model Development
iii.   'Characterization Level' in 3rd year-Make it Scalable

7. UNDERPINNING THEORY

The major underpinning theory is given below based on the higher level UOs of *Revised Bloom's taxonomy* that are formulated for development of the COs and competency. If required, more such UOs could be included by the course teacher to focus on attainment of COs and competency.

Unit	Major LearningOutcomes (in cognitive domain)	Topics and Sub-topics
1) Introduction to Entrepreneurship and Start – Ups	1a) Define Entrepreneurship 1b) Discuss characteristics and functions of entrepreneurship. 1c) Identify different types of Entrepreneurships 1d) Compare the concepts entrepreneurand intrapreneur and find out the motivation behind it 1e) Distinguish between entrepreneur and managers 1f) Identify 7-M Resources 1g) Know MSME & Startup India, standup India, SSIP and its registration process for both.	1. Definition, Traits of an entrepreneur, 2. Functions of Entrepreneurship - Job Creation, Innovation, Inspiration, Economic Development 3. Types of Entrepreneurship 4. Motivation for Intrapreneurship 5. Types of Business Structures, 6. Similarities and differences between entrepreneurs and managers. 7. 7-M Resources 8. Micro, Small, Medium Enterprise/ MSME - Industry Registration Process 9. Startup India, Standup India and SSIP Gujarat & Startup registration process

| 2) Business Ideas and their implementation (Idea to Start-up) | 2a) Finding Ideas and making an activity map

2b) Develop the plans forcreating and starting the business

2c) To identify business using the ideation canvas and the business model canvas

2d) To know market research related terms

2e) To know market mix related terms

2f) Learn Product related terminologies

2g) Emphasize on Innovation

2h) Explain concept of Risk and SWOT | 1. Discovering ideas and visualizing the business with Activity map
  1.1 Idea Generation
  1.2 Product Identification
2. Business Plan- The Marketing Plan and Financial Plan/ Sources of Capital
3. Business opportunity identification and evaluation
4. Market research
  4.1.1. Questionnaire design
  4.1.2. Sampling
  4.1.3. Market survey
  4.1.4. Data analysis & interpretation
5. Marketing Mix (4Ps- product,price, promotion place)
  5.1.1. Identifying the target market
  5.1.2. Competition evaluation and Strategy adoption
  5.1.3. Market Segmentation
  5.1.4. Marketing, Advertising and Branding
  5.1.5. Digital Marketing
  5.1.6. B2B, E-commerce and GeM
6. Product Terms- PLC, Mortality Curve and New product Development Steps, Inventory, Supply Chain Management
7. Importance and concept of Innovation, Sources and Process
8. Risk analysis and mitigation by SWOT Analysis |
| 3) Management Practices | 3a) Explain the concept and differences between industry, commerce and business.
3b) Describe various types of ownerships in the organization.
3c) Explain different types of leadership models.
3d) Analyze the nature and importance of various functions of management
3e) Discuss Financial organization Management
3f) Distinguish management and administration | 1. Industry, Commerce and Business
2. Types of ownership in the organization -Definition, Characteristics, Merits &Demerits
3. Different Leadership Models
4. Functions of Management- Merits & Demerits
  4.1 Planning
  4.2 Company's Organization Structure
  4.3 Directing
  4.4 Controlling
  4.5 Staffing- Recruitment and management of talent.
5. Financial organization and management
6. Differences between Management and Administration |

| 4) Support Agencies and Incubators | 4a) Identify support agencies and current promotional schemes for enterprise and startups

4b) Advocacy to investor

4c) To Explain various Legal Issues | 1. State & National Level Support agencies and Current Promotional Schemes for new Enterprise
2. Start-up Incubation and modalities
3. Communication of Ideas to potential investors – Investor Pitch
4. Legal Issues
   4.1. Contracts
   4.2. Copyrights
   4.3. Insurance
   4.4. IPR
   4.5. Licensing
   4.6. Patents
   4.7. Trade Secrets
   4.8. Trademarks |
| 5) Project Proposal & Exit strategies | 5a) To work on the development of a project proposal

5b) Describe social responsibility and relate with economic Performance.

5c) Explain managerialethics

5d) To know Ex-Im Policies

5e) Identify suitable strategies of succession and harvesting | 1. Project Planning
   i. Project planning and report
   ii. Feasibility study
   iii. Project cost estimation
   iv. Breakeven point,
   v. Return on investment and Return on sales
2. Corporate Social Responsibilities and Economic performance
3. Business Ethics
4. Ex-Im policies
5. Succession and harvesting strategy
6. Bankruptcy and avoidance |

8. SUGGESTED SPECIFICATION TABLE FOR QUESTIONPAPER DESIGN

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
I	Introduction to Entrepreneurship and Start – Ups	08	4	6	2	12
II	Business Ideas and their implementation (Idea to Startup)	08	6	4	4	14
III	Management Practices	12	6	8	8	22
IV	Support Agencies and	08	4	4	4	12

	Incubators					
V	Project Proposal & Exit strategies	06	2	4	4	10
	Total	**42**	**22**	**26**	**22**	**70**

Legends: *R=Remember, U=Understand, A=Apply and above (Revised Bloom's taxonomy)*
<u>Note</u>: *This specification table provides general guidelines to assist students for their learning and to teachers to teach and question paper designers/setters to formulate test items/questions to assess the attainment of the UOs. The actual distribution of marks at different taxonomy levels (of R, U and A) in the question paper may slightly vary from above table.*

9.   SUGGESTED STUDENT ACTIVITIES

Other than the classroom learning, following are the suggested student-related *co-curricular* activities which can be undertaken to accelerate the attainment of the various outcomes in this course. Students should make a portfolio i.e. perform at least FIVE from following list of activities individually or in group (not more than 2). They should prepare reports of about 2-5 pages for each activity and collect/ record physical evidence for their portfolio which may be useful for their placement interviews:

   i.   Develop two products from household waste (attach photographs).
   ii.   Download product development and innovative films from internet.
   iii. Prepare a collage for "Traits of successful entrepreneurs."/ "Motivation & Charms of Entrepreneurship"
   iv.   Invite entrepreneurs, industry officials, bankers for interaction. Interview at least four entrepreneurs or businessman and identify
   v.   Identify your hobbies and interests and convert them into business idea.
   vi.   Mock Business Model- Choose a product and design a unique selling preposition, brand name, logo, advertisement (print, radio, and television), jingle, packaging, and labeling for it.
   vii. Develop your own website. Share your strengths and weakness on it. Declare your time bound goals and monitor them on the website.
   viii. Choose any product/ advertisement and analyze its good and bad points/ cost sheet/ supply chain etc. (individuals should select different ads)
   ix.   Compare schemes for entrepreneurship promotion of any bank.
   x.   Visit industrial exhibitions, trade fairs and observe nitty-gritty of business. Get news of Vibrant Gujarat Events. (Upcoming in Jan 2024)
   xi.   Open a savings account and build your own capital.
   xii. Arrange a visit to a Mall, observe products, supply chain management and prepare report.
   xiii. Organize industrial visit and suggest modifications for process improvement. Conduct a market survey for a product /project before visit. In the visit collect data on machinery specifications, price, output/hour, power consumption, manpower requirement, wages, raw material requirement, specification, price, competitor's product price, features, dealer commissions, marketing mix etc. Make a detailed report at the end of the visit.
   xiv. Select a social cause, set objectives, plan and work for its accomplishment. Find details about some famous NGOs
   xv.   Present Own Dream Start-up story as Seminar OR Analyze 2 products from Shark Tank program.

10.   SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES (if any)

These are sample strategies, which the teacher can use to accelerate the attainment of the various outcomes in this course:

a) Massive open online courses (**MOOCs**) may be used to teach various topics/subtopics.
b) Guide student(s) in undertaking micro-projects.
c) **'L' in section No. 4 means** different types of teaching methods that is to be employed by teachers to develop the outcomes.
d) Show animation/ video related to course content.
e) Various Apps related to subject topics/ sub-topics
f) Other Common instructions as under
  1) Instructors should emphasize more on exemplary and deductive learning.
  2) Students should learn to recognize, create, shape opportunities, and lead teams forproviding economic-social value to society.
  3) Business simulations should be used to enhance behavioral traits of successfulintrapreneurs and entrepreneurs amongst students.
  4) Emphasis should be on creating entrepreneurial society rather than only setting upof enterprise.
  5) They must be encouraged to surf on net and collect as much information aspossible.
  6) Each student should complete minimum ten activities from the suggested list.Minimum possible guidance should be given for the suggested activities.
  7) Students should be promoted to use creative ideas, pool their own resources, finishtheir presentation, communication and team skills.
  8) Alumni should be frequently invited for experience sharing, guiding andrewarding students.
  9) Display must be arranged for models, collages, business plans and othercontributions so that they motivate others.
  10) You may show video/animation film / presentation slides to demonstrate variousmanagement functions, traits of entrepreneur etc.
  11) Arrange a visit to nearby venture capital firm.
  12) Give 1 Mini project and 1project report for future business to all the students.
  13) The following pedagogical tools will be used to teach this course:
     a) Lectures and Discussions
     b) Role Playing
     c) Assignments and Presentations
     d) Case Analysis
     e) Quiz on Management and Entrepreneurship
     g) Mimic/ narrate examples from world's leading businessmen among the students.
     h) Guide students on how to address issues on environment and sustainability

12.   SUGGESTED MICRO-PROJECTS

Only one micro-project is planned to be undertaken by a student that needs to be assigned to him/her in the beginning of the semester. In the first four semesters, the micro-projects are group-based (group of 3 to 5). However, **in the fifth and sixth semesters**, the number of students in the group should **not exceed three.**

The micro-project could be industry application based, internet-based, workshop-based, laboratory-based or field-based. Each micro-project should encompass two or more COs which are in fact, an integration of PrOs, UOs and ADOs. Each student will have to maintain a dated work diary consisting of individual contributions in the project work and give a seminar presentation of it before submission. The duration of the guidance for micro project should be about **6-8 *(six to eight) student engagement hours*** during the theory/ course. The students ought to submit micro-project by the end of the semester to develop the industry-oriented COs.

A suggestive list of micro-projects/ practical exercise is given here. This has to match the competency and the COs. Similar micro-projects could be added by the concerned course teacher:
(It can be a Seminar with bound /hand written notes/ ppts of individual students OR a product/ service portfolio)

1) Entrepreneur Traits and Behavior Modelling
2) Various State and Central Entrepreneurship Promotional Schemes and Start-up Policies
3) Business Model for a Startup and study of Unicorns
4) Make your own Product / Service portfolio/ Proposal with USP, logo, advertisement (print, radio, and television), jingle,packaging, labeling and branding for it.

13. SUGGESTED LEARNING RESOURCES

Sr. No	Title of Book	Author	Publication with place, year and ISBN
1	Entrepreneurship in Action	Coulter	PHI 2nd Edition
2	Entrepreneurship Development	E. Gordon & K. Natarajan	Himalaya
3	Entrepreneurship	Robert D. Hisrich & Mathew J. Manimala	McGraw Hill Education; ISBN 978-1259001635
4	Entrepreneurial Development	S S Khanka	S Chand & Company; ISBN: 978-8121918015
5	Entrepreneurship Development and Management	A. K. Singh	Jain Book Agency (JBA) publishes, New Delhi
6	Entrepreneurship Development& Management	R.K. Singal	S K Kataria and Sons; ISBN: 978-8189757007
7	Small Scale Industries and Entrepreneurship	Vasant Desai	Himalaya 2008
8	Entrepreneurship	Roy Rajeev	Oxford University Press; ISBN: 978-0198072638
9	Industrial Engineering and Management	O.P.Khanna	Dhanpat Rai and Sons, Delhi
10	Industrial Organization and Management	Tara Chand	NemChand and Brothers; Roorkee
11	Industrial Management and Entrepreneurship	V. K. Sharma.	Scientific Publishers, New Delhi
12	Entrepreneurship Developmentand Small Business Enterprise	Poornima M Charantimath	Pearson Education; ISBN: 978-8131759196
13	Entrepreneurship Development	S Anil kumar	NEW AGE Intern. Pvt Ltd; ISBN: 978-8122414349

14	The Startup Owner's Manual: The Step-by-Step Guide for Building a Great Company	Steve Blank and Bob Dorf	K & S Ranch ISBN – 978-0984999392
15	The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses	Eric Ries	Penguin UK ISBN – 978-0670921607
16	Demand: Creating What People Love Before They Know They Want It	Adrian J. Slywotzky with Karl Weber	Headline Book Publishing ISBN – 978-0755388974
17	The Innovator's Dilemma: The Revolutionary Book That Will Change the Way You Do Business	Clayton M. Christensen	Harvardbusiness ISBN: 978-142219602
18	How to write a business plan,	Brian Finch	2nd edition, 2007, Kogan Page India Pvt. Ltd.
	Advance Reading		
19	HBR - Creating business plan	-	20-minute manager series, 2014.
20	HBR – Creating business plan	-	Expert solution to everyday challenges, 2007.

14. SOFTWARE/LEARNING WEBSITES

[A] List of Software/Learning Websites:

Sr. No.	Topic Key Word	Link
1	MoCI	https://www.india.gov.in/website-ministry-commerce-and-industry
2	MSME	1)https://msme.gov.in/ 2) https://www.msmex.in/learn/government-schemes-for-startups-and-msmes-in-india/
3	Start-up, Stand-up India & SSIP Gujarat	1) https://www.startupindia.gov.in/ 2) https://www.standupmitra.in 3) https://udyamimitra.in/page/standup-india-loans 4) https://www.ssipgujarat.in/
4	Make in India	https://www.makeinindia.com/
5	Atmanirbhar Bharat Abhiyan Vocal for Local	https://indiancc.mygov.in › uploads › 2021/08
6	Skill India	https://skillindia.gov.in
7	MSDE	https://www.msde.gov.in/
8	Vibrant Gujarat	https://www.vibrantgujarat.com/
9	NABARD	www.nabard.com
10	PAN	https://www.onlineservices.nsdl.com/paam/endUserRegisterContact.html
11	I-hub	https://ihubgujarat.in
12	GSTIN	https://reg.gst.gov.in/registration

13	IEC Code	https://www.dgft.gov.in/CP
14	Mudra	https://www.mudra.org.in/
15	Export-Import	http://niryatbandhu.iift.ac.in/exim/
16	NSIC	https://www.nsic.co.in/
17	DIC	https://ic.gujarat.gov.in/dic -contact.aspx -District Industries Centre
18	EDI	https://www.ediindia.org/
19	CED	https://ced.gujarat.gov.in/home
20	NIESBUD	https://www.niesbud.nic.in/
21	Start-up Talky	https://startuptalky.com/list-of-government-initiatives-for-startups/
22	Invest India	https://www.investindia.gov.in/startup-india-hub
23	SAAC	https://www.saccindia.org/india/startups.html?utm_source=google&utm_medium=cpc&gclid=EAIaIQobChMIutLQ4dfW_wIVeppmAh1cOAAIEAMYASAAEgIJO_D_BwE
24	Action for India	https://actionforindia.org/afi-activity-accelerator-programs.html?gclid=EAIaIQobChMIutLQ4dfW_wIVeppmAh1cOAAIEAMYAiAAEgLVGvD_BwE
25	Indian Chamber of Commerce	https://www.indianchamber.org/
26	FICCI	https://www.ficci.in/api/home
27	GCCI	https://www.gujaratchamber.org/

[B] Some Films (To be seen on Sundays/holidays by students on their own, not to be shown in polytechnics in any case**)**

  i.   Any Body Can Dance (2013)
  ii.   Corporate (2006)
  iii. Do Duni Char (2010)
  iv.   Guru (2007)
  v.   Oh My God (2013)
  vi.   Pirates of Silicon Valley (1999)
  vii. The Pursuit of Happiness (2006)
  viii. Rocket Singh (2010)
  ix.   Start-up.com (2001)
  x.   The Social Network (2010)
  xi.   Wall Street (1987)
  xii. Band Baja Barat (2010)
  xiii. You've Got Mail (1998)
  xiv. Steve Jobs (2015)
  xv.   Chef (2014)
  xvi. "Office Space (1999)
  xvii. Erin Brockovich (2000)
  xviii. The Founder (2016)

15.   PO-COMPETENCY-CO MAPPING:

Semester V	Entrepreneurship & Startups

Competency & Course Outcomes	(Course Code: **4300021**)						
	POs						
	PO 1 Basic & Discipline specific knowledge	PO 2 Problem Analysis	PO 3 Design / development of solution	PO4 Engineering Tools, Experimentation & Testing	PO 5 Engineering practices for society, sustainability & environment	PO 6 Project Management	PO 7 Life-long learning
Competency	Use concepts of management optimally to establish a small enterprise or start-up, validate it and make it scalable.						
CO1-Understanding the dynamic role of entrepreneurship and Startups by Acquiring Entrepreneurial spirit and resourcefulness, quality, competency, and motivation	3	1	2	-	-	2	2
CO2- Identify a Business Idea and implement it	3	2	2	1	1	3	3
CO3-Select suitable Management practices like leadership and Ownership, resource institutes	3	-	1	1	2	2	3
CO4- Overview of Support Agencies and Incubators	2	3	2	2	1	2	2
CO5- Building Project Proposal & knowing CSR , Ethics, Ex-Im, & Exit strategies	3	2	2W	1	1	3	3

Legend: '**3**' for high, '**2**' for medium, '**1**' for low and '**-**' for no correlation of each CO with PO.

16. COURSE CURRICULUM DEVELOPMENT COMMITTEE

GTU Resource Persons

S. No.	Name and Designation	Institute	Contact No.	Email
1.	Mr. Ujjval V Buch (MBA)	G.P.Ahmedabad	9825346922	uvbuch@gmail.com
2.	Dr. Satya Acharya	EDI, Bhat.	7600050606	satya@ediindia.org