SEMESTER S2

ENGINEERING ENTREPRENEURSHIP AND IPR
(Common to all Branches)

Course Code	**UCEST206**	**CIE Marks**	60
Teaching Hours/Week (L: T:P: R)	2:1:0:0	**ESE Marks**	40
Credits	3	**Exam Hours**	2 Hrs. 30 Min.
Prerequisites (if any)	None	**Course Type**	Theory

Course Objectives:

1. Develop a framework for identifying, curating and validating engineering-based business ideas.
2. Learn essential tools for understanding product-market fit and customer needs.
3. Create a comprehensive business plan for a new venture.
4. Gain foundational knowledge of Intellectual Property Rights (IPR) and their importance for startups.
5. Develop skills for prototyping, stakeholder engagement, and team collaboration.

SYLLABUS

Module No.	Syllabus Description	Contact Hours
1	**Introduction to Ideation, Innovation & Entrepreneurship** ● What is Ideation? ● Understanding Innovation ● Frameworks for Innovation ● The Entrepreneurial Mindset ● Starting a Business, types formation statutory compliances. ● Resources for Aspiring Entrepreneurs	9

	Introduction to Intellectual Property Rights (IPR) ● Types of IPR: Patents, trademarks, copyrights, trade secrets ● Strategies for protecting intellectual property based on the type of innovation ● Role of IPR in securing funding and competitive advantage **Importance of building a strong team** ● Identifying roles ● Skill sets ● Team dynamics **Identifying Pain Points and problem statement** ● Idea Generation Techniques ● Developing and Refining Ideas ● Develop strategies for bringing your innovation to life	
2	**Problem and solution canvas preparation** ● Orientation and canvas introduction ● Customer needs assessment ● Market segmentation ● Value proposition ● Competitive analysis ● Market entry strategy ● Market validation ● Regulatory and legal considerations **Customer profiling** ● Review of market research ● Customer segmentation ● Customer profiling ● Persona development ● Validation and feedback ● Prioritisation and selection ● Communication and messaging **Competitor analysis** ● Identify competitors ● Competitor profiling	**9**

	• SWOT analysis • Market positioning • Customer feedback and reviews • Pricing analysis • Differentiation strategy • Benchmarking and improvement	
3	**Business plan preparation** • Business plan framework • Market analysis • Product/ service description • Marketing and sales strategy • Operations plan • Financial projections • Risk management **Prototype development plan preparation** • Prototype requirements analysis • Technical specifications • Development approach • Development timeline • Resource allocation • Testing and quality assurance • Iterative development and feedback loop • Documentation and version control	**9**
4	**Prototype development Stakeholder engagement strategies** • Investors • Partners • Customers • Advisors & Mentors	**9**

Course Assessment Method
(CIE: 60 marks, ESE: 40 marks)

Continuous Internal Evaluation Marks (CIE):

Attendance	Micro Project	Internal Ex-1	Internal Ex-2	Total
5	35	10	10	60

Micro project / Comprehensive Business Plan:

The course will be evaluated based on a comprehensive Business Plan Report submitted and prototype development evaluation at the end of the course. The report should integrate learnings and activities from each module, demonstrating a deep understanding of the concepts and your ability to apply them to a chosen engineering venture.

End Semester Examination Marks (ESE)

In Part A, all questions need to be answered and in Part B, each student can choose any one full question out of two questions

Part A	Part B	Total
• Minimum 1 and Maximum 2 Questions from each module. • Total of 8 Questions, each carrying **3 marks (6x2 =12 marks)**	• 2 questions will be given from each module, out of which 1 question should be answered. • Each question can have a maximum of 3 subdivisions. • Each question carries 9 marks. **(4x7 = 28 marks)**	**40**

Course Outcomes (COs)

At the end of the course students should be able to:

Course Outcome		Bloom's Knowledge Level (KL)
CO1	Gain foundational knowledge of Innovation and Entrepreneurship, Intellectual Property Rights (IPR) and their importance for startups.	**K2**
CO2	Develop a framework for identifying, curating and validating engineering-based business ideas.	**K3**
CO3	Learn essential tools for understanding product-market fit and customer needs.	**K3**
CO4	Create a comprehensive business plan for a new venture.	**K6**
CO5	Develop skills for prototyping, stakeholder engagement, and team collaboration.	**K4**

Note*: K1- Remember, K2- Understand, K3- Apply, K4- Analyse, K5- Evaluate, K6- Create*

CO-PO Mapping Table:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	3	3	3	3	3						
CO2	2	2	3	3	3	3	3	3	3			
CO3	2	2	2	2	2	3	3	3	3	2	2	2
CO4	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	3	3	3	3	3

Text Books				
Sl. No	**Title of the Book**	**Name of the Author/s**	**Name of the Publisher**	**Edition and Year**
1	The Engineering Handbook	Richard C.Dorf	CRC Press	2nd Edn, 2004
2	The Innovator's DNA	Clayton M. Christensen and Jeffrey H. Dyer	Harvard Business Review Press;	Revised edition (June 4, 2019)
3	Start with Why	Simon sinek	Portfolio	Reprint edition (December 27, 2011)
4	Business Model Generation	Alexander Osterwalder & Yves Pigneur	Wiley	2010
5	The Engineering Entrepreneur: A Practical Guide to Starting and Running a Successful Engineering Business in India	Saibal Gupta and Ashok Jhunjhunwala	Sage Publications	2011
6	Innovation and Entrepreneurship for Engineers	Bharat Bhushan and Seema Bhushan	CRS Press	2016
7	Indian Patent Law	P. Narayanan	Eastern Book Company	2nd edn/ 2020
8	The Law of Copyright and Designs	B.L. Wadehra	Universal Law	5th edn/2010
9	Intellectual Property Rights (Including IPR in the Digital Age)	Prabuddha Ganguli	Tata McGraw-Hill Education	2001
10	The Startup India Manifesto: A Guide to the Indian Startup Ecosystem	Rashmi Bansal and Deepinder Goyal	Westland Publications	2020