



AISSMS **INSTITUTE OF INFORMATION TECHNOLOGY** **(IOIT)**



ADDING VALUE TO ENGINEERING

An Autonomous Institute Affiliated to Savitribai Phule Pune University
Approved by AICTE, New Delhi and Recognised by Govt. of Maharashtra
Accredited by NAAC with "A+" Grade | NBA - 5 UG Programmes

PROGRAM IN **INSTRUMENTATION ENGINEERING**

MINOR COURSE

on

“INNOVATION, ENTREPRENEURIAL AND VENTURE DEVELOPMENT”

*[Offered to the students of
Instrumentation Engineering, IT, Computer Engineering, AI&DS,
Electrical Engineering,
and Electronics and Telecommunication Engineering]*

STRUCTURE AND DETAIL SYLLABUS

(Pattern 2025)

AISSMS INSTITUTE OF INFORMATION TECHNOLOGY

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BOS-INSTRUMENTATION ENGINEERING
AISSMS IOIT (AUTONOMOUS),
PUNE-1.**

Program in Instrumentation Engineering**Structure for Minor Course on****“Innovation, Entrepreneurial and Venture Development”**

*[Offered to the students of
Instrumentation Engineering, IT, Computer Engineering, AI&DS,
Electrical Engineering,
and Electronics and Telecommunication Engineering]*

Sr. No.	Course Code	Course Name	Sem	Hours per week			Credit	Examination Scheme				Total
				L	T	P		ISE	ESE	TW	OR	
1.	IOMNR303	UDYAME	III	3	--	--	3	--	75 ^{##}	--	--	75
2.	IOMNR304	UDYAME Lab	III	--	--	2	1	--	--	25	--	25
3.	IOMNR403	Design Thinking and Innovation	IV	3	--	--	3	--	75 ^{##}	--	--	75
4.	IOMNR404	Design Thinking and Innovation Lab	IV	--	--	2	1	--	--	25	--	25
5.	IOMNR503	UDYAM (Sales and Marketing)	V	3	--	--	3	--	75 ^{##}	--	--	75
6.	IOMNR504	UDYAM (Sales and Marketing lab)	V	--	--	2	1	--	--	25	--	25
7.	IOMNR603	UDYAM (Financial Management)	VI	3	--	--	3	--	75 ^{##}	--	--	75
8.	IOMNR604	UDYAM (Financial Management) LaB	VI	--	--	2	1	--	--	25	--	25
Total				12		8	16		300	100		400

Note: It is mandatory to register the with one company (MSME/Udyam, (LLP/Pvt. Ltd/OPC) for all students who enroll this course related to their field of study as part of the curriculum.

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Innovation, Entrepreneurial and Venture Development (2025 Course) UDYAME (IOMNR303)			
Course Code:	IOMNR303	Credit	3
Contact Hours:	3 Hrs/week (L)	Type of Course:	Lecture
Examination Scheme	End-sem. Examination: 75 Marks		

Pre-requisites: --

Course assessment methods/tools:

Sr. No.	Course assessment methods/tools	External/ Internal	Marks
1.	Term work	Internal	25
2.	End Semester Examination	External	75

Course Objectives: During the course study students will be able to

1	To discuss the fundamental concepts, nature, and various forms of entrepreneurship to understand its scope and significance in different business contexts.
2	To describe the ethical considerations in entrepreneurship and their impact on responsible decision-making and sustainable business practices

Course Outcomes: On completion of the course, Students will be able to

303.1	Explain the importance and role of entrepreneurship in economic development.
303.2	Explain the nature and various forms of entrepreneurship
303.3	Analyze the role of creativity in developing and sustaining an entrepreneurial venture
303.4	Evaluate the key challenges faced by entrepreneurs and develop strategies to overcome them
303.5	Explain ethical considerations in entrepreneurship and their impact on business decisions and societal well-being


Topics covered:

UNIT I: Introduction (8 hrs.)

Concept and Definitions, Importance of Entrepreneurship, Concepts of Entrepreneurship, Understanding entrepreneurial characteristics within oneself, Application of entrepreneurial characteristics in day to day life, Entrepreneurship Mind Set, Role of entrepreneurship in economic development; Entrepreneurship process. Factors impacting emergence of entrepreneurship;

UNIT II: Nature and Forms of Entrepreneurship (8 hrs.)

Features - Entrepreneur's competencies, Stages of Entrepreneurship Process, Attitudes of an Entrepreneur, Entrepreneur v/s Intrapreneur, Qualities of Entrepreneurship functions, Functions of Entrepreneur, corporate entrepreneurship, intrapreneurship, Preparing oneself for entrepreneurship and intrapreneurship, Entrepreneur v/s Intrapreneur, Understanding the importance of being an individual brand


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UNIT III: Creativity and Business Idea (6 hrs.)
Introduction, Creativity and Entrepreneurship, Business planning process; Importance of Business Plan, Drawing business plan; Business plan failures, Blocks of Creativity, Sources of Creativity, Techniques of generating Ideas
UNIT IV- Challenges in Entrepreneurship (8 hrs.)
Potential Drawbacks of Entrepreneurship, Entrepreneurial Challenges, College: The Ideal Place to Launch a Business, The Cultural Diversity of Entrepreneurship, Young Entrepreneurs, Women Entrepreneurs; Social Entrepreneurship, Successful Entrepreneurs, Failure Entrepreneurs, Myths of Entrepreneurship. Problem faced by Entrepreneurs.
UNIT V- Ethics of Entrepreneurship (6hrs)
Ethical Perspective, Ethical Standards, Establishing and Maintaining Ethical Standards, Types of Startups, Social Entrepreneurship and responsibility, Small and Medium Business Enterprises, Entrepreneurial leadership – components of entrepreneurial leadership, Business Model

Text Books:

1. Kumar, Arya, —Entrepreneurship: Creating and Leading an Entrepreneurial Organization, Pearson ISBN-10: 8131765784; ISBN-13: 978-8131765784.
2. Charantimath, Poornima, —Entrepreneurship Development and Small Business Enterprises, Pearson Education, ISBN, 8177582607, 9788177582604.
3. Badhai, B, —Entrepreneurship for Engineers, Dhanpat Rai & Co. (p) Ltd.
4. Norman M. Scarborough, Jeffrey R. Cornwall, —Essentials of Entrepreneurship and Small Business Management, Eight Edition, Pearson.

E- Books / E- Learning References:

1. NPTEL Course on —Entrepreneurship Essentials
Link of Course: https://onlinecourses.nptel.ac.in/noc25_ge11/preview
2. NPTEL Course on —Entrepreneurship Development
Link of Course: https://onlinecourses.swayam2.ac.in/cec20_mg19/preview



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Innovation, Entrepreneurial and Venture Development (2025 Course)**UDYAME Lab (IOMNR304)**

Course Code:	IOMNR304	Credit	1
Contact Hours:	2 Hrs/week	Type of Course:	Practical
Examination Scheme	Term work 25 Marks		

Pre-requisites: --**Course assessment methods/tools:**

Sr. No.	Course assessment methods/tools	External/ Internal	Marks
1.	Term work	Internal	25

Course Objectives : During the course study students will be able to

- 1 Discuss the types of Entrepreneurs
- 2 Describe Real life problem in society and conduct SWOT analysis of company

Course Outcomes: On completion of the course, Students will be able to

- 502.1 Explain successful, failure and accidental type of Entrepreneur.
- 502.2 Analyze real-world societal challenges and SWOT analysis of company

List of Experiments:

1. Case study on any two Indian successful Entrepreneurs – Journey, Challenges and Strategies
2. Case study on any two Failure Entrepreneurs (Companies)
3. Case study on accidental push type entrepreneur - The Entrepreneurial Story
4. Identify a real life problem in society and propose an innovative startup solution.
5. Conduct a SWOT analysis for an existing company, identifying its internal strengths and weaknesses, along with external opportunities and threats.

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**Innovation, Entrepreneurial and Venture Development (2025 Course)
Design Thinking and Innovation (IOMNR403)**

Course Code:	IOMNR403	Credit	3
Contact Hours:	3 Hrs/week (L)	Type of Course:	Lecture
Examination Scheme	End-sem. Examination: 75 Marks		

Pre-requisites: Introduction to Entrepreneurship, Project based learning and IDEA Lab

Course assessment methods/tools:

Sr. No.	Course assessment methods/tools	External/ Internal	Marks
1.	Term work	Internal	25
2.	End Semester Examination	External	75

Course Objectives: During the course study students will be able to

1	To familiarize students with design thinking concepts and principles
2	Apply design thinking phases to create successful prototypes

Course Outcomes: On completion of the course, Students will be able to

403.1	Explain various tools of empathy and define phase to define a problem statement.
403.2	Evaluate different ideation methods and decide on the most optimal idea to implement the problem statement
403.3	Design and develop a prototype using various methods

Topics covered:

UNIT I: Introduction to Design Thinking and Innovation (8 hrs.)

What is Design, History of Definition of Design Thinking, Principle of Design thinking, Phases of design thinking, who is Designer, steps to facilitate design thinking, 5 stages of Design thinking process. Definition of Innovation, seed of innovation, Innovation domains, Innovation sustainable conditions. types of innovations. Differentiating culture requirement for innovation from other sectors of industries. Challenges to inculcate attitude of innovation.

UNIT II: Empathize and Define Phase (8 hrs.)

Introduction to empathize mode, Importance of Empathy phase, Steps, tools of empathy map, Benefits, drawbacks, Difference between journey map and an Empathy Map, Introduction of Define Phase, Point of View (POV), —How Might Wel.

UNIT III: Ideate Phase (6 hrs.)

Ideate Phase – Introduction, Importance, Uses and Needs, Ideation Methods, Brainstorming, Mind maps Barriers to Ideation, Idea Validation.

UNIT IV- Prototype Phase (8 hrs.)

Introduction, key Benefits, Need of Prototype, What is Prototype? Why Prototype? Rapid Prototype Development process, Common Low-Fidelity Prototypes and Their Best Practices, Common

Pitfalls in Prototyping and How to Avoid Them, From Prototype to Product.
UNIT V- Testing Phase (6 hrs)
Introduction, Importance and Need of Testing, Different Types of Evaluative Research, Heuristic Evaluation, Prototype testing.

Text Books:

1. Handbook of Design Thinking - Tips & Tools for how to design thinking, Christian Mueller-Roterberg.
2. Design Thinking Process & Methods 5th Edition, Robert Curedale, 2019.

E- Books / E- Learning References:

1. NPTEL Course on —Design, Technology and Innovation||
Link of the Course: https://onlinecourses.swayam2.ac.in/aic25_ge11/preview
2. NPTEL Course on —Innovation, Business Models and Entrepreneurship||
Link of the Course: https://onlinecourses.nptel.ac.in/noc21_mg63/preview



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Innovation, Entrepreneurial and Venture Development (2025 Course) Design Thinking and Innovation Lab (IOMNR404)			
Course Code:	IOMNR404	Credit	1
Contact Hours:	2 Hrs/week	Type of Course:	Practical
Examination Scheme	Term work 25 Marks		

Pre-requisites: Project based learning IDEA lab

Course assessment methods/tools:

Sr. No.	Course assessment methods/tools	External/ Internal	Marks
1.	Term work	Internal	25

Course Objectives : During the course study students will be able to

1	Discuss the innovative product ideas using brainstorming techniques.
2	Discuss the challenges and design techniques of old, new and future products
3	Describes the prototype and testing techniques

Course Outcomes: On completion of the course, Students will be able to

404.1	Apply brainstorming and ideation techniques to generate creative product solutions.
404.2	Evaluate successful and failed product innovations to understand key design and product design

List of Case Studies :

1. Planning a study tour to Incubation Unit/IDEA Lab/FAB Lab.
2. A Case study on obsolete products and challenges in introducing products using latest technology.
3. Group wise brainstorming sessions for Idea generation, validation based on venue specific challenges e.g. – Traffic, water scarcity problem, medical facilities, pollution.
4. A case study on future trends in product innovation and design based on emerging technologies.
5. To Generate an Idea having Novelty.
6. Comparative study of two innovative products from different industries and discuss how their design approaches influenced consumer adoption.

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**Innovation, Entrepreneurial and Venture Development (2025 Course)
UDYAM (Sales and Marketing) (IOMNR503)**

Course Code:	IOMNR503	Credit	3
Contact Hours:	3 Hrs/week (L)	Type of Course:	Lecture
Examination Scheme	End-sem. Examination: 75 Marks		

Pre-requisites: Introduction of Entrepreneurship, Design Thinking, Innovation, Introduction of Entrepreneurship

Course assessment methods/tools:

Sr. No.	Course assessment methods/tools	External/ Internal	Marks
1.	Term work	Internal	25
2.	End Semester Examination	External	75

Course Objectives: During the course study students will be able to

1	Discuss Marketing management strategies
2	Describe Business models with challenges and customer service management

Course Outcomes: On completion of the course, Students will be able to

503.1	Explain Marketing management in details
503.2	Analyze Business models and Sales challenges
503.3	Explain Customer Service Management

Topics covered:

UNIT I: Marketing Management I (8 hrs.)

Introduction of market and Marketing Plan, Define Marketing, Marketing of Innovation, Technology Innovation Process, Undertaking Marketing Research, Benefits of Undertaking Marketing Research, Factors Affecting the Decision to Undertake Marketing Research, Scope and Steps Involved in Marketing Research, Categories and Types of Market Research

UNIT II: Marketing Management II (8 hrs.)

Digital marketing, Define Target Market, Market Segmentation, Market Positioning, Content marketing Strategy, Social Marketing, Focus on engaging with customers rather than just selling, Building a Marketing Plan, Marketing Mix, Critical Factors for Devising a Market Strategy, Growth hackers Marketing.

UNIT III: Business Model Canvas (8 hrs.)

Business model definition, Model canvas template, Business model innovation, Business Model Failure: Reasons and Remedies, value proposition, Customer Segment, Channel model, Customer relationship, Revenue model, Key Resources, Key Activities, key Partnership, Cost structure, Criticism of Business Model Canvas

UNIT IV- Sales Channels & Distribution (6 hrs.)

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What is Sales channel, Physical sale channel, Onlines sales channel, omnin Channel, Definition of distributor, Distributor Management, What is retailer, Retail management, Retail management Skills, sale Process, B2B and B2C selling, B2B Sales Funnel, Selling Skills.

UNIT V- Customer Service Management (6hrs)

What is Customer service, Customer loyalty measure, Components of Customer Service, Customer Service Quality, Supply Chain, Types of Supply Chain, Supply Chain Flow, Supply Chain Planning, optimization, digitization.

Text Books:

1. Kumar, Arya, —Entrepreneurship: Creating and Leading an Entrepreneurial Organizationl, Pearson ISBN-10: 8131765784; ISBN-13: 978-8131765784.
2. Charantimath, Poornima, —Entrepreneurship Development and Small Business Enterprisesl, Pearson Education, ISBN, 8177582607, 9788177582604.
3. Badhai, B, —Entrepreneurship for Engineersl, Dhanpat Rai & Co. (p) Ltd.
4. Norman M. Scarborough, Jeffrey R. Cornwall, —Essentials of Entrepreneurship ad Small Business Managementl, Eight Edition, Pearson.

E- Books / E- Learning References:

1. NPTEL course on —Business Fundamentals for Entrepreneursl
Link of course: https://onlinecourses.nptel.ac.in/noc25_mg13/preview
2. NPTEL course on Innovation, Business Models and Entrepreneurship
Link of Course: https://onlinecourses.nptel.ac.in/noc21_mg63/preview
3. NPTEL course on —Entrepreneurship Essentialsl
Link of course: https://onlinecourses.nptel.ac.in/noc25_ge11/preview

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**Innovation, Entrepreneurial and Venture Development (2025 Course)
UDYAM (Sales and Marketing lab) (IOMNR504)**

Course Code:	IOMNR504	Credit	1
Contact Hours:	2 Hrs/week	Type of Course:	Practical
Examination Scheme	Term work 25 Marks		

Pre-requisites: Introduction to marketing research

Course assessment methods/tools:

Sr. No.	Course assessment methods/tools	External/ Internal	Marks
1.	Term work	Internal	25

Course Objectives : During the course study students will be able to

1. Discuss the market Research
2. Describe the Business Model canvas

Course Outcomes: On completion of the course, Students will be able to

- 504.1 Analyze the Market strategy of organization
- 504.2 Describes the company's Delivery Models

List of Case Studies :

1. Interview the three owners of a local restaurant about its marketing strategy- target market, clientele, demographic profile etc.
2. Case study on E-commerce company – market research, expansion, customer satisfaction, BMC etc.
3. Case study on Technology and Entertainment company - Marketing and Promotion Strategies, Pricing and Subscription Models, Consumer Behavior Analysis, Content Strategy Research, Competitor Benchmarking.
4. Case study on comparative Analysis of Traditional vs. On-Demand Delivery Models.
5. A Comparative Analysis on Franchise vs. Direct Sales Models.
6. To create the pitch deck.


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Innovation, Entrepreneurial and Venture Development (2025 Course)
UDYAM (Financial Management) (IOMNR603)

Course Code:	IOMNR503	Credit	3
Contact Hours:	3 Hrs/week (L)	Type of Course:	Lecture
Examination Scheme	End-sem. Examination: 75 Marks		

Pre-requisites:

Course assessment methods/tools:

Sr. No.	Course assessment methods/tools	External/ Internal	Marks
1.	Term work	Internal	25
2.	End Semester Examination	External	75

Course Objectives: During the course study students will be able to

1	Discuss financial management
2	Describe Profit and financial ventures

Course Outcomes: On completion of the course, Students will be able to

603.1	Explain Financial management in details
603.2	Describe profit , Pricing and credit strategies
603.3	Explain stages of financing and financing ventures in details

Topics covered:

UNIT I: Financial Management I (8 hrs.)

Introduction of Financial statements, Meaning and Objectives of Financial Statement, Assumptions Underlying Preparation of Financial Statements, Balance Sheet—Concepts and Understanding, Profit and Loss Account/Income Statement, Fund Flow and Cash Flow Statements, Inventory Management, ratio Analysis

UNIT II: Financial Management II (8 hrs.)

Depreciation definition, methods of Depreciation- straight line method, declining balance method is also called declining value method, some of years digit method, amortization, treatment of capital gain or Loss on sale of fixed asset.

UNIT III: Cost, Volume, Profit: Break-Even Point Analysis (6 hrs.)

Relation between cost, volume of sale and profit, Break Even Point Analysis, Ratio Analysis—Tool for Analysis, Advantage and Limitations of BEP, Operating and Financial Leverage, Cost Indifference point, Cash Management, Cash and Profits are not the Same

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UNIT IV- Pricing and Credit Strategies (8 hrs.)

Pricing Strategies and Tactics, Three Potent Forces: Image, Competition, and Value, Pricing Strategies and Methods for Retailers, Pricing Concepts for Manufacturers, Pricing Strategies and Methods for Service Firms, The Impact of Credit on Pricing.

UNIT V- Financing Venture (6hrs)

Introduction, Why Does One Need Money, Different Stages of Financing, Sources of Finance, Other Methods of Financing, Seed Funding, Venture Capital Funding, of venture Funding From Banks, Lease Financing, Funding Opportunities for Start-ups in India

Text Books:

1. Kumar, Arya, —Entrepreneurship: Creating and Leading an Entrepreneurial Organization, Pearson ISBN-10: 8131765784; ISBN-13: 978-8131765784.
2. Charantimath, Poornima, —Entrepreneurship Development and Small Business Enterprises, Pearson Education, ISBN, 8177582607, 9788177582604.
3. Badhai, B, —Entrepreneurship for Engineers, Dhanpat Rai & Co. (p) Ltd.
4. Norman M. Scarborough, Jeffrey R. Cornwall, —Essentials of Entrepreneurship and Small Business Management, Eight Edition, Pearson.

E- Books / E- Learning References:

1. NPTEL course on —Business Fundamentals for Entrepreneurs
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2. NPTEL course on —Entrepreneurship Essentials
Link of course: https://onlinecourses.nptel.ac.in/noc25_ge11/preview


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Innovation, Entrepreneurial and Venture Development (2025 Course) UDYAM (Financial Management) (IOMNR604)			
Course Code:	IOMNR604	Credit	1
Contact Hours:	2 Hrs/week	Type of Course:	Practical
Examination Scheme	Term work 25 Marks		

Pre-requisites: --

Course assessment methods/tools:

Sr. No.	Course assessment methods/tools	External/ Internal	Marks
1.	Term work	Internal	25

Course Objectives : During the course study students will be able to

- 1 Discuss the Balance sheet and financial statement of organization
- 2 Describe profit, loss and cash flow statement of company

Course Outcomes: On completion of the course, Students will be able to

- 604.1 Examine the balance sheet of company
- 604.2 Illustrate the cash and Fund flow of any company

List of Case Studies :

1. Analysis of a financial statement for an organization. In a group of two to three people, visit an organization in your area, and seek permission to prepare an analysis based on the organization's recent financial report.
2. Compute the different profit margins for the company of last three years. Analyse their trends. Identify the key areas that need to be focused on for improvement in profit margins.
3. Cash flow and fund flow analysis of any one company and critically comment on the cash position of the company.
4. Compute the different ratios and compare them with industry average for the large software industries.
5. Analyse the balance sheet of two industries.