



Scheme & Syllabus of

**Bachelor of Vocational (B.Voc.)
in
Solar System Technology
(Batch 2026 & Onwards)**



By

Board of Studies Electrical Engineering

Department of Academics

I.K. Gujral Punjab Technical University Jalandhar



1. Introduction

All India Council for Technical Education (AICTE) Ministry of HRD, Government of India has introduced Entrepreneurship oriented Skill development courses of B.Voc. /D. Voc. /Skill Diploma. These courses will be run by AICTE approved institutes by using available infrastructure and facilities. In these courses the institute will conduct general education content and sector specific skills will be imparted by Skill Knowledge Providers/ Training Providers/ Industries.

Key Features: Objectives

- To provide judicious mix of skills relating to a profession and appropriate content of General Education.
- To ensure that the students have adequate knowledge and skills, so that they are work ready at each exit point of the programme.
- To provide flexibility to the students by means of pre-defined entry and multiple exit points.
- To provide vertical mobility to students admitted in such vocational courses.
- The certification levels will lead to Diploma/Advanced Diploma/B. Voc. Degree in Solar Engineering Technology and will be offered by respective affiliating University/Board of Technical Education.
- Students may be awarded Diploma/Degree as out-lined in the Table below:

Award	Duration after class XII
Diploma	1 Year
Advanced Diploma	2 Year
B.Voc Degree	3 Year

2. Course Objectives

After successfully completing the vocational course, the student would have acquired relevant appropriate and adequate technical knowledge together with the professional skills and competencies in the field of Solar System so that he/she is properly equipped to take up gainful employment in this Vocation. Thus he/she should have acquired.



A. Understanding of

- (a) The relevant basic concepts and principles in basic science subjects (Physics, Chemistry and Mathematics) so that he/she is able to understand the different vocational subjects.
- (b) The basic concepts in engineering workshops.
- (c) The concepts, principles of working of solar systems.
- (d) The knowledge of testing procedure of components used in solar systems and making use of different test instruments.



- (e) The procedure of installing the solar systems.
- (f) The concepts and principles used in Solar Systems and its maintenance.

B. Adequate Professional Skills and Competencies in

- (a) Selecting the material required for solar system and its layout.
- (b) Testing the performance of Solar Systems.
- (c) Locating the fault at component level and at the stage level.

C. A Healthy and Professional Attitude so that She/he has

- (a) An analytical approach while working on a job.
- (b) An open mind while locating/rectifying faults.
- (c) Respect for working with his/her own hands.
- (d) Respect for honesty, punctuality and truthfulness

3. Course Structure

The course will consist of combination of practice, theory and hands on skills in the Solar Engineering sector.

Curriculum

The curriculum in each of the years of the programme would be a suitable mix of general education and skill development components.

Skill Development Components:

- The focus of skill development components shall be to equip students with appropriate knowledge, practice and attitude, to become work ready. The skill development components will be relevant to the industry as per its requirements.
- The curriculum will necessarily embed within itself, National Occupational Standards (NOSs) of specific job roles within the industry. This would enable the students to meet the learning outcomes specified in the NOSs.
- The overall design of the skill development component along with the job roles selected



will be such that it leads to a comprehensive specialization in few domains.

- The curriculum will focus on work-readiness skills in each of the year of training.
- Adequate attention will be given in curriculum design to practical work, on the job training, development of student portfolios and project work.

General Education Component:

- The general education component adheres to the normal senior secondary and university standards. It will emphasize and offer courses which provide holistic development. However, it will not exceed 40% of the total curriculum.
- Adequate emphasis is given to language and communication skills.



Bachelor of Vocational (B. Voc.)-Solar System Technology
Teaching Scheme for Undergraduate Degree Programme

Curriculum

Sem ester	Code	Educational Component	L	T	P	No of hour s/we ek	Credit	Mark s
I	Theory							
	SST.101	Basics of Mathematics	4	0	0	4	4	50
	SST.102	Communication Skills(Reading and Writing)	4	0	0	4	4	50
	SST.103	Basics of Computers	4	0	0	4	4	50
	SST.104	Solar Energy System	4	0	0	4	4	50
	Practical							
	SST.105	Solar Technology-1	2	0	0	2	2+2	50
	UGDM-101-26	Disaster Management and Preparedness	1	0	2	3	Non-credit	100
	Training							
	Operation and Maintenance of solar plant		4 weeks				10	150
II	Theory							
	SST.201	Spoken English	4	0	0	4	4	50
	SST.202	Entrepreneuership Development	4	0	0	4	4	50
	SST.203	Drug Abuse : Problem, Management and Prevention	4	0	0	4	4	50
	SST.204	Solar Photovoltaic Power Plants	4	0	0	4	4	50
	Practical							
	SST.205	Solar Technology-2	2	0	0	2	2+2	50
	EMC-101-25	Entrepreneurship Setup and Launch*	0	0	4	4	2	100
	Training							
	Solar Installation Field Technician		6 weeks				10	150

- Internal marks: 60 and external marks: 40



Bachelor of Vocational (B. Voc.)-Solar System Technology
Teaching Scheme for Undergraduate Degree Programme

Semester	Code	Educational Component	L	T	P	H	Credit	Marks
III	Theory							
	SST.301	Soft Skills	3	0	0	3	3	50
	SST.302	Basics of programming-I	3	0	0	3	3	50
	SST.303	Solar Cell and Photovoltaic Technologies	4	0	0	4	4	50
	SST.304	Solar Energy Storage and Management	4	0	0	4	4	50
	Practical							
	SST.305	Programming Lab-I	0	0	2	4	2	50
	SST.306	Electrical Technology Lab	2	0	2	4	2+2	50
	EMC-102-25	Entrepreneurship (Marketing Basics)	0	0	4	4	2	100
	On-Job-Training (OJT)*							
	PV Installation and Maintenance						22	400

Detailed Curriculum

(Semester I)

(SST.101) Basics of Mathematics

Course Outcomes – After the completion of this course, students will be :

- 1 Be able to perform basic computations
- 2 Be able to write and understand basic proofs.
- 3 Develop and maintain problem-solving skills.
- 4 Use **mathematical** ideas to model real-world problems.

Module 1 –Matrices: Concept, notation, order, equality, types of matrices, zero and identity matrix, transpose of a matrix, symmetric and skew symmetric matrices. Operation on matrices: Addition and multiplication and multiplication with a scalar. Simple properties of addition, multiplication and scalar multiplication. Non- commutativity of multiplication of matrices and existence of non-zero matrices whose product is the zero matrix (restrict to square matrices of order 2).Concept of elementary row and column operations.

Module 2 -Trigonometric Functions: Positive and negative angles. Measuring angles in radians and in degrees and conversion of one into other. Definition of trigonometric functions with the help of unit circle. Truth of the $\sin^2 x + \cos^2 x = 1$, for all x . Signs of trigonometric functions. Domain and range of trigonometric functions and their graphs. Identities related to $\sin 2x$, $\cos 2x$, $\tan 2x$, $\sin 3x$, $\cos 3x$ and $\tan 3x$.

Module 3 -Limits and Derivatives: Derivative introduced as rate of change both as that of distance function and geometrically. Intuitive idea of limit. Limits of polynomials and rational functions trigonometric, exponential and logarithmic functions. Definition of derivative relate it to slope of tangent of the curve, derivative of sum, difference, product and quotient of functions. Derivatives of polynomial and trigonometric functions.

Module 4 –Integrals:Integration as inverse process of differentiation. Integration of a variety of functions by substitution, by partial fractions and by parts. Definite integrals as a limit of a sum, Fundamental Theorem of Calculus (without proof). Basic properties of definite integrals and evaluation of definite integrals. Applications in finding the area under simple curves, especially lines, circles/ parabolas/ellipses.

References:

- Mathematics, *NCERT-XI* (Volume- 1) & (Volume-2) •
Mathematics, *NCERT-XII* (Volume-1) &(volume-2)
- Mathematics by *R D Sharma*,Dhanpat Rai Publications •
Mathematics by *J.P.Mohindru* ;Modern publications
- Mathematics by *Romesh Kumar*; Pardeep publications

(SST.102) Communication Skills (Reading and Writing)

Course Outcomes – After the completion of this course, students will be :

- 1 Be able to adopt strategies for effective reading
- 2 Be able to write formal and informal letters
- 3 Be able to write official reports.
- 4 Be able to deliver professional presentations.

Syllabus

1. Reading comprehension.
2. Letter writing: Various types of letters formal e.g. letter to the editor or director of your institute and informal e. g letters to friends & family members.
3. Paragraph writing.
4. Making notes, using Abbreviations and symbols in note making.
5. Paraphrasing.
6. Writing reports- Business, Official.

References:

- Practical English Usage. Michael Swan. OUP. 1995.
- Remedial English Grammar. F.T. Wood. Macmillan.2007
- On Writing Well. William Zinsser. Harper Resource Book. 2001
- Study Writing. Liz Hamp-Lyons and Ben Heasley. Cambridge University Press. 2006. •
- Communication Skills. Sanjay Kumar and Pushp Lata. Oxford University Press. 2011

(SST.103) Basics of Computers

Course Outcomes – After the completion of this course, students will be able to :

1. Learn Basic Applications of Computer and its component
2. Know Fundamentals of computer sciences get knowledge of Hardware & Software, open Source Technologies etc.
3. Learn about various computational tools internet and email etc.
4. Know Computer Virus, Anti-Virus, Terms and Abbreviation used in IT.

Module 1 : Introduction and Objectives, Basic Applications of Computer and its component.

Module 2 : Bringing computer to life, Fundamentals of computer sciences, Hardware & Software, Concept of Open Source Technologies, Input & output Devices.

Module 3 : Knowledge of MS Word, MS Excel, MS Access, MS PowerPoint, PDF Internet and E-mail.

Module 4 : Concept of Computer Virus and Latest Anti-Virus, Terms and Abbreviation used in IT.

References/Books

- Basic Computer Course by *C S Changeriya*.
- Computer Basics by *Bittu Kumar*.
- Fundamentals of Computers by V. Rajaraman
- Fundamentals of Computers by E Balagurusamy
- Computer Hardware: Installation, Interfacing, Troubleshooting and Maintenance by James K.L

(SST.104) Solar Energy System

Course Outcomes – After the completion of this course, students will be able to :

1. Get familiar with basic principles of solar technology & solar photovoltaic cells.
2. Learn about Solar Radiation, solar spectrum, optimal tilt for solar equipment, monthly averaged global radiation etc,
3. Get knowledge of Fundamentals of Solar Cells, I-V Characteristics Solar Cell parameters, conversion efficiency and power output of solar cell
4. Know about Solar Photovoltaic Lighting System, Lead-Acid Batteries, Maintenance of Battery, Cleanliness etc.

Module I : Basic Principles in Solar Technology: Solar Thermal Conversion: Principles of Solar Radiation, Solar Collector, Absorption of radiation and Conversion to Thermal Energy, Collection & Storage of Thermal Energy, Solar Photovoltaic Cells.

Module II : Solar Radiation: Solar Spectrum, Extra-terrestrial Radiation, Radiation on the Earth Surface, Global, Direct and Diffuse Solar Radiation, Solar Radiation at a Given Location, Annual Variation in Solar Radiation, Optimal Tilt for Solar Equipment, Monthly Averaged Global Radiation at Optimal Tilt.

Module III: Fundamentals of Solar Cells : Characteristics of semiconductors, Differences between semiconductors, insulators and conductors, Theory of p n junction, Principle of operation of p-n junction Solar Cell, I-V Characteristics Solar Cell parameters, V_{oc} , I_{sc} , FF, conversion efficiency and power output of solar cell.

Module IV : Solar Photovoltaic Lighting System: Principle of Photovoltaic lighting system, Solar Array, Battery Bank, Electronic Controller, Inverter, Solar photovoltaic street lighting system, Maintenance of Battery, Cleanliness, Adding water, Kind of water, Discharge limits, Basics of Lead-Acid Batteries, Discharge limits of Lead-Acid batteries.

References/Books:

- Renewable Energy Technologies: A Practical Guide for Beginners, Chetan Singh Solanki, PHI|School Books (2008)
- Solar Photovoltaics: Fundamentals, Technologies and Applications, Chetan Singh Solanki PHI; 3 edition 2015

- Renewable Energy Sources and Emerging Technologies, Kothari D.P. and Singal K. C, New Arrivals - PHI; 2 edition (2011)
- Solar Photovoltaic Technology and Systems: A Manual for Technicians, Trainers and Engineers, Chetan Singh Solanki PHI (1 January 2013)
- Fundamentals of Renewable Energy Systems Paperback – D. Mukherjee, New Age International Publisher; First edition (2011)
- Science & Technology of Photovoltaics P Jayrama Reddy, BS Publications ,CRC Press 2010

SST.105 – Solar Technology-1**Course Outcomes:**

At the end of this course, students will demonstrate the ability to:

1. Recognize/use basic solar technology.
2. Develop a comprehensive technological understanding in solar PV system components.
3. Provide adequate inputs on a variety of issues in solar technology.
4. Acquire training in solar technology.

Lectures/Demonstrations:

1. Basics of electrical systems such as current, voltage, power, Ohm's law, series and parallel connections etc.
2. Basic measuring instruments such as voltmeter, ammeter, wattmeter and energy meter & their use.
3. Cells and batteries.
4. Diodes and solar cells.
5. Solar PV modules, their measurements and connections.
6. Solar photovoltaic system and its applications.

Experiments

1. Verification of Ohm's Law.
2. Series and parallel connection of cells in circuits.
3. Charging and discharging of a lead-acid battery.
4. Current and voltage measurement using ammeter and voltmeter.
5. Power and energy measurement using wattmeter and energy meter.
6. V-I characteristics of a diode.
7. Familiarization with solar energy gadgets.
8. To determine voltage and current of solar cells.
9. Demonstration of solar panels.
10. Identifying and measuring the parameters of a solar PV module.
11. Series and parallel connection of PV modules.
12. Study of applications of solar photovoltaic system.

Recommended Books

1. Renewable energy Technologies: A practical Guide for Beginners, Chetan Singh Solanki, PHI School Books (2008).
2. Solar Photovoltaics: Fundamentals, Technologies and Applications, Chetan Singh Solanki, PHI; 3 edition 2015.
3. Solar Photovoltaic Technology and systems: A Manual for Technicians, trainers and Engineers, Chetan singh Solanki, PHI 2011.
4. Fundamentals of Renewable Energy Systems Paperback- D. Mukherjee, New Age International Publishers; First edition(2011).

UGDM-101-26	Disaster Management and Preparedness	1 L: 0 T: 2 P	0 credits
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Internal marks: 100**External marks: 00****Total marks: 100****Course outcomes:**

By the end of this course, students will be able to:

CO1: Identify hazards, vulnerabilities and risks at individual, institutional and community levels.

CO2: Outline the legal and institutional frameworks of DRR in India and globally.

CO3: Demonstrate life-saving skills, emergency communication, disaster response and risk mitigation techniques.

CO4: Utilize and implement basic tools and technologies for risk assessment, preparedness and resilience-building.

CO5: Prepare disaster management plans and design community awareness activities, or prototypes in regional/local contexts.

Module 1: Understanding disaster risk reduction and managements

Basic concepts and terminology: Hazard, Vulnerability, Capacity, Exposure, Disaster, Risk, Disaster Management & Disaster Risk Reduction. Hazard profile of India: Regional profile.

Disaster Management Cycle: Mitigation, preparedness, response, relief, recovery, rehabilitation.

Policy and legal frameworks: DM Act 2005, DM Amendment Act 2025, National Policy, State-specific Acts; PM 10 Points agenda. International frameworks: Sendai Framework, Paris Agreement, SDGs. Role of Institutions in DRR (overview only): NDMA, NIDM, IMO, CWC, GSI, BIS, ISRO, INCOIS, SDMA, DDMA, NDRF. Case studies of different disasters in India: Lessons learned (minimum 2).

Module 2: Preparedness, mitigation and response planning

Framework for Developing Disaster Management Plans. Hazard, Vulnerability, Capacity and Risk (HVCR) Assessment tools and techniques: Transect walk, Hazard mapping, Problem tree, Chapatti diagram etc. Mitigation and Preparedness: Evacuation planning, mock drills, tabletop exercises; disaster-specific mitigation, Crowd Management techniques. Basics of Incident Response System (IRS). Role of emergency forces: NDRF, SDRF, police, fire services, armed forces, NCC, NSS. Planning for more vulnerable groups. Emerging technologies: Drones, digital literacy, mobile apps (GIRI tool, SAFAR, Meghdoot, UMANG, Sachet, CWC Flood Alerts, IMD, BIS, IHIP), social media for DRR. Basics of safe construction and structural & nonstructural audit exercise (safety of home/ college buildings). Funding mechanisms for disasters in India. Emergency Communication network.

Module 3: Life-saving skills

First Aid in disasters: Golden hour concept, CPR, wounds, choking, burns, fractures, animal bites (snake/dog/rabid), heat-related illnesses, triaging, stampede. Household and personal preparedness and protection: 72-hour emergency kit, safe food storage, water purification, ORS use, water sanitation and hygiene (WASH) and Infection Prevention Control (IPC) practices, Basic Sign Language. Search and Rescue methods. Fire safety and electrical/gas/LPG safety: Causes, prevention, fire extinguisher demonstration, indigenous methods (Natural first-aid remedies- aloe vera, turmeric, coconut oil, salt solution); traditional risk-reduction practices. Disaster-specific response: Floods, landslides, earthquakes, CBRN emergencies, pandemics, drowning, lightning, gas leakage, cyclone, heatwave, coldwave.

Psychosocial support in DRR; Steps for implementing psychological first aid and its importance. Public

health preparedness: Public health impacts of various disasters, Prevention of post-disaster water-borne and vector-borne diseases.

Module 4: Field exposure and community engagement

Field visits: District Emergency Operations Centre, State Disaster Response Force/ National Disaster Response Force units, fire stations, State Emergency Operations Center, hazard-prone communities, heat-prone areas (flood-prone village, fire-vulnerable urban slum). Practical exposure: Mock drills, demonstrations and simulations (multi-hazard, evacuation, earthquake, flood); interaction with responders and officials (Aapda Mitras, National Cadet Corps/National Service Scheme/Nehru Yuva Kendra Sangathan, Red Cross). Community Engagement projects: Street plays (nukkad natak), awareness campaigns, DRR clubs (institute and community level clubs), Information, Education and Communication material (podcasts, videos, comics, photo essays, posters, Knowledge exchange webinars). Environmental hazards: Youth/community participation (tree plantation, soil conservation). Project/assignment: Preparation of institutional/household DM plan in local language; budget-friendly multi-disaster survival kit prototype; reflective field report, youth-led community engagement projects and creation of IEC/digital communication materials. Multidisciplinary integration: Links with local governments, HEIs, youth/adolescent networks. Activities for mitigating disaster risks: Increasing green cover, plantation and knowledge of human anatomy. Interaction with: State, district, gram panchayat level officials, DRR helpline numbers, and knowledge of physical resources required and available locally; interview /session with disaster survivors.

Reference books/Textbooks:

1. Sphere Handbook for humanitarian response standards.

Link: <https://spherestandards.org/handbook/>

2. Health emergency and disaster risk management framework (Health EDRM).

WHO. Link: <https://www.who.int/publications/i/item/9789241516181>

(Semester II)

(SST.201) Spoken English

Course Outcomes –After the completion of this course, students will be able to –

5. Frame grammatically correct sentences in English.
6. Fluently speak in English in many situations.
7. Able to present thought's more effectively.
8. Able to translate between different languages.

Module 1: Basic English Grammar

Parts of speech and their uses, Word formation, Tenses and their Uses, Articles and their uses, Types of sentences and sentence patterns, Synonyms and their uses, Antonyms and their uses.

Module 2: Conversation in English

Greeting, Introducing Oneself, Invitation, Making Request, Expressing Gratitude, Complimenting and Congratulating, Expressing Sympathy, Apologizing, Asking for Information, Seeking Permission, Complaining and Expressing Regret

Module 3: Using English in Real Life Situation

At the Bank/ post office/ College office, At the Green Grocer, At the Temple, At the College Canteen or Restaurant, At the Police station, At the Railway Station/ Bus Station, At the Medical Shop, At the Library, Interviews, Booking a Room in a Hotel

Module 4: Translation

Translation from PUNJABI/HINDI to English

Books –

- ‘Basic Grammar in Use’ by Raymond Murphy, Cambridge University.
- ‘English Grammar Workbook’ by Wendy Wilson and James H. Barlow, Kindle Edition, 2020.
- ‘Handbook of English Translation (Punjabi-English)’ by Balwant Kaur and Pratap Rastogi, Ramesh Publishing House, 2021.
- ‘High School English Translation’ by Sharma R.K. LUCENT’S Publishing, 2020.

(SST.202) Entrepreneurship Development

Module-I :Introduction to Entrepreneurship

Definition of Entrepreneur, Entrepreneurial Traits, and Entrepreneur vs. Manager, Entrepreneur vs. Entrepreneur. The Entrepreneurial decision process. Role of Entrepreneurship in Economic Development, Ethics and Social responsibility of Entrepreneurs. Opportunities for Entrepreneurs in India and abroad. Woman as Entrepreneur.

Module-II : Creating and Starting the Venture

Sources of new Ideas, Methods of generating ideas, creating problem solving, product planning and development process.

Module-III : The Business Plan

Nature and scope of Business plan, Writing Business Plan, Evaluating Business plans, Using and implementing business plans. Marketing plan, financial plan and the organizational plan, Launching formalities.

Module – IV : Financing and Managing the new venture

Sources of capital, Record keeping, recruitment, motivating and leading teams, financial controls. Marketing and sales controls. E-commerce and Entrepreneurship, Internet advertising.

References:

- Entrepreneurial Development, Khanka S.S, S.Chand ,2006.
 - Entrepreneurship development, Sangeeta Sharma, 2016.
 - Entrepreneurship Development, S.Anil Kumar, 2008.
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(SST.203) Drug Abuse : Problem, Management and Prevention

Module I : Problem of Drug Abuse: Concept and Overview:What are drugs and what constitutes Drug Abuse?Prevalence of menace of Drug Abuse, How drug Abuse is different from Drug Dependence and Drug Addiction?Physical and psychological dependence- concepts of drug tolerance

Introduction to drugs of abuse: Short Term, Long term effects & withdrawal symptoms: Stimulants; Amphetamines, Cocaine, Nicotine.**Depressants;** Alcohol, Barbiturates- Nembutal, Seconal, Phenobarbital Benzodiazepines –Diazepam, Alprazolam, Flunitrazepam.Narcotics; Opium, morphine, heroin. Hallucinogens; Cannabis & derivatives (marijuana, hashish, hash oil).

MODULE II : Nature of the Problem: Vulnerable Age Groups,Signs and symptoms of Drug Abuse ;Physical indicators, Academic indicators, Behavioral and Psychological indicators

MODULE III : Causes and Consequences of Drug Abuse:Causes; Physiological, Psychological, Sociological.Consequences of Drug Abuse; For individuals ,For families, For society & Nation

MODULE IV : Management & Prevention of Drug Abuse:Management of Drug Abuse, Prevention of Drug Abuse, Role of Family, School, Media, Legislation&De-addictionCenters

References:

- Kapoor.T. (1985) Drug Epidemic among Indian Youth, New Delhi: Mittal Pub
 - Modi, Ishwar andModi, Shalini (1997) Drugs: Addiction and Prevention,Jaipur: Rawat Publication. Ahuja,
 - Ram,(2003),Social Problems in India, Rawat Publications: Jaipur
 - 2003 National Household Survey of Alcohol and Drug Abuse. New Delhi, Clinical Epidemiological Unit, All India Institute of Medical Sciences,2004.
 - World Drug Report 2011, United Nations Office of Drug and Crime. World
 - Drug Report 2010, United nations Office of Drug and Crime.
 - Extent, Pattern and Trend of Drug Use in India, Ministry of Social Justice and Empowerment, Government of India,2004.
 - The Narcotic Drugs and Psychotropic Substances Act, 1985, (New Delhi: Universal, 2012)
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(SST.204) Solar Photovoltaic Power Plants

Course Outcomes –After the completion of this course, students will be able to –

- Understand basics of Solar Modules and Arrays ●
Understand the working of solar plants
- Understand the grid connections with solar plants ●
Learn about the applications of solar panels

Module 1 – Solar Modules and Arrays: Characteristics, Classification, Construction of module, panel and array. Solar PV Systems (stand-alone and grid connected), Solar PV Applications. Government schemes and policies.

Module 2 - Solar Thermal Power Plants: Working of a typical Concentrated Solar Power (CSP) plant Maintenance procedure of CSP systems

Module 3 - Solar Photovoltaic (PV) Power Plants: Working of a typical Solar PV Power plant, types of Batteries for solar PV system, Maintenance procedure of typical Solar PV Power plant.

Module 4 - Grid Connection of Solar Power Plants - Grid connection of CSP plants, Grid connection of Solar PV power plants.

Reference books

- S. P. Sukhatme and J.K. Nayak, Solar Energy –Principles of Thermal Collection and Storage, Tata McGraw- Hill, New Delhi.
 - Sukhatme. S.P., Solar Energy, Tata McGraw Hill Publishing Company Ltd., New Delhi, 1997.
 - Garg, Prakash, Solar Energy, Fundamentals and Applications, Tata McGraw Hill.
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(SST.205) Solar Technology-2

Course Outcomes – At the end of this course, students will demonstrate the ability to –

- Understand the concept of Solar PV module and its parameters ●
Design the model of solar module on software platform
- Understand the effect of parameters on solar panel performance ●
Learn about the connections of Grid connected Solar system

Lectures/Demonstrations –

1. Concepts related to Solar PV systems – Voltage, Current, Power and Solar insolation
2. Connections of Solar PV module to converter circuit and battery bank
3. Solar PV system characteristics with varying values of solar insolation
4. Designing of solar cell and module on software platform.
5. Measurements of various parameters of a Solar PV plant
6. Understanding of grid connections with solar plant

List of Experiments

1. To study about the configuration of solar PV system
2. To plot the V-I characteristics of solar PV system
3. To plot the power characteristics of solar PV system
4. To analyze the effect of temperature on solar output voltage and current
5. To analyze the effect of temperature on solar output power
6. To study the operation of battery charge using a PV module
7. To study the effect of partial shading on PV panel operation
8. To plot solar panel performance versus insolation
9. To study sun tracking system in solar panels
10. To take readings using Pyranometer
11. To take readings of various parameters from a grid connected solar plant

Category	Entrepreneurship Course			
Course title	Entrepreneurship Setup and Launch (Lab)			
Semester	I/II			
Scheme and Credits	L	T	P	Credits
	0	0	4	2
Pre-requisite (if any):	Nil			

Course code: EMC-101-25

Course Title: Entrepreneurship Setup and Launch (2 credits) [L: 0; T: 0; P: 4]

Internal Marks: 60 External Marks: 40 Total Marks: 100

12 weeks, 2 weekly slots of two hours each, 4 hours per week

Revenue Target: ₹10,000

Introduction:

This semester lays the foundation for the learner to understand what entrepreneurship is, beyond just starting a business. It introduces key ideas like problem-solving, value creation, and self-awareness. The learner will begin exploring basic business concepts while discovering their own interests and strengths.

Learners Objective:

- Understand the core concepts of entrepreneurship through relatable, real-life examples.
- Begin to see themselves as problem-solvers and creators.
- Learn about business paths and choose one to try based on interest or local fit.
- Launch a micro-hustle (online or offline) to earn their first income.
- Build confidence and self-belief by doing.

Outcome: By the end of this semester, learners will start a simple business activity, earn their first income, and build belief in their ability to do business.

Guiding Principles/Approach:

This syllabus is built on principles of **experiential learning**, **growth mindset development**, and **identity-first learning**. Drawing from learning science and behavior design, the course shifts students from passive learning to *active doing*, where they try out small business activities in real contexts. The design helps students not just learn entrepreneurship but begin to see themselves as entrepreneurs. Emphasis is placed on *small wins*, *peer collaboration*, and *locally relevant opportunities* to ensure learning feels achievable and connected to their realities. The curriculum focuses on conceptual understanding without heavy theory, combining *practical action*, *reflection*, and *collaboration*. *By making progress visible and success feel possible, it plants the seeds of self-reliance, initiative, and long-term motivation.*

Detailed contents

Week	Learning Goal	Measurable Outcome
1	Understand what entrepreneurship is and who can be an entrepreneur	Students define entrepreneurship in their own words and list 2 entrepreneurs from their local area or community
2	Connect personal identity to entrepreneurship (strengths, interests, struggles)	Students create a “value map” showing how a skill/interest/problem from their life could become a business opportunity
3	Learn about 5 business paths: content creation, drop-shipping, cloud kitchen/food business, gig economy and local services	Students explore 1–2 examples from each domain and share one they’re most curious to try and why
4	Choose a path and generate a basic business idea	Students write down a clear offer (what, for whom, why) and one way to reach their customer
5	Take first real action: message, post, pitch, or sell	Students reach out to or serve 1 real potential customer and record what happened
6	Reflect on first attempt and share with peers	Students share their result, a challenge faced, and one idea to improve next time
7	Improve and try again: aim for first ₹100	Students apply a change, try again, and aim to make their first ₹100 or get meaningful response
8	Learn how to identify and understand your target customer	Students talk to 2 potential customers or observe them and list 3 insights about their needs
9	Learn how to serve your target audience better	Students improve one part of their offer (product, delivery, messaging, or interaction) based on customer feedback or need
10	Explore core entrepreneurial values (resilience, honesty, effort)	Students reflect on 1 value they’re building and show it in a business task or peer story
11	Focus on earning and staying consistent	Students complete a second earning task and track their consistency (e.g., same product or message for 3 days)
12	Reflect on earnings, grit, and how to keep going	Students record total earnings, one resilience moment, and one support system or habit they’ll continue with

Weekly Component:

Component	Duration	Description
Learning Module	~1.5 hrs	- Introduces key concepts in a simple and engaging way - Includes, examples, and 1–2 interactive discussions or quizzes
Action Lab	~2 hrs	- Hands-on task on the weekly concept - Includes step-by-step guidance, templates, and worksheets - Ends with a submission (e.g., video, reflection, or proof of action)
Resources	Self-paced	- Supplementary videos, short readings, real-life stories, and tools to deepen understanding at their own pace

Evaluation Criteria

Evaluation Component	Description	Weightage
Weekly Task Completion	Timely submission of weekly tasks including reflections, activities, quizzes etc.	40%
Target Completion	Performance-based evaluation on hitting revenue or profit targets (e.g., generating ₹10,000 revenue)	30%
Final Project	A comprehensive project based on the semester's theme	30%

Week 1: What is Entrepreneurship? Who Can Be an entrepreneur?**INTRODUCTION: Could *You* Be an entrepreneur?**

When people hear “entrepreneur,” they often think it means having a company, investors, or an MBA. Some even believe it's only for toppers or those with high grades. But entrepreneurship is more about mindset than qualifications: it's about seeing a problem and doing something about it. Like someone who starts selling snacks because their school canteen is always shut, or a friend who fixes broken chargers for others. If you've ever spotted a need and thought, “I can solve this,” - you’ve already taken your first step.

Component 1: Learning Module (~1.5 hours) Unit 1:**What is Entrepreneurship?**

1. *Solving problems or creating value in exchange for money.*
2. Entrepreneurship is not just about starting a company: it's about initiative, resourcefulness, and value creation.
3. Different types of entrepreneurs: small shop owners, street vendors, YouTubers, local tailors, mechanics, and more.
4. Entrepreneurs build opportunities instead of waiting for them.

Simple Slide/Visual Aid Tip:

A circle that says "Problem", an arrow pointing to "Solution", then an arrow to "Earn". That's entrepreneurship.

<A video that visually shows how entrepreneurship starts with spotting a problem (e.g., long food lines), creating a solution (e.g., pre-order lunch service), and earning from it: illustrating the simple flow: Problem → Solution → Earn>

MCQ 1

Q: What best describes entrepreneurship?

- A. Getting a job in a company
- B. Solving problems for others and earning from it
- C. Studying business in college
- D. Buying expensive things

Feedback:

1. *Correct! Entrepreneurs solve problems or offer value and get paid for it.*
2. *Not quite! Entrepreneurship is about creating something useful, not just getting a job or studying.*

Unit 2: Who Can Be an entrepreneur?

Entrepreneurship starts with spotting a problem, finding a solution, and creating value. Today, anyone with a phone and an internet connection can start a business: money helps, but mindset and initiative matter more at the start.

You just need:

1. A problem to solve
2. A simple skill or product
3. The courage to start small

Examples Carousel (Swipeable cards)

1. **Pooja (India)** – Sells handmade rakhis on Instagram, learned designing on YouTube.
Problem she saw: Expensive or generic rakhis in the market; no personal touch.
2. **Luis (Mexico)** – Repairs used phones in his garage, now has loyal customers.
Problem he saw: Many people couldn't afford new phones or didn't trust local repair shops.
3. **Sana (Kolkata)** – Started tiffin delivery from her home kitchen, now earns ₹500/day.
Problem she saw: Office workers struggled to find affordable, homemade meals.
4. **Sal Khan (USA)** – Started Khan Academy with YouTube lessons to help his cousin. *Problem he saw:* His cousin needed help with math, but good learning resources were hard to access.

MCQ

Q: Which of these can be a form of entrepreneurship?

- A. Making reels on skincare tips and selling homemade face packs
- B. Buying new clothes from malls
- C. Studying engineering
- D. Playing games without sharing or streaming

Feedback:

1. *Correct! Sharing useful tips + selling a product = solving a need!*
2. *Try again! Entrepreneurship is about creating value and helping others.*

Reflection Prompt

1. If you had to earn ₹100 this week, what would you do?

Component 2: Action Lab (~2 hours) Task Find & Learn from 2

Entrepreneurs Near You

Steps (Checklist):

1. Look around your neighborhood or online: find 2 people who earn through their own work
2. Ask or observe:
 - a) What do they do?
 - b) How do they earn?
 - c) What makes them entrepreneurial?
3. Use the **Entrepreneur Tracker Template** (available in the resources tab)

Final Deliverable

Learner submits:

1. A short definition of entrepreneurship (in their words)
2. 2 entries from the Entrepreneur Tracker (name, what they do, what learner learned)

→ Submitted in the submissions tab. Supplementary Resources

(Optional)

1. Danny O'Neill - Getting started | Entrepreneurship | Khan Academy
2. The Better India – Stories of local entrepreneurs

Syllabus 3rd Semester

(SST.301) SOFT SKILLS

Course Outcomes – After the completion of this course, students will be able to

- Achieve basic awareness about the significance of soft skills in professional and interpersonal communications
- Facilitate an all-round development of personality
- Develop his/her personal traits
- Expose their personality effectively

Module I – Soft Skills

Introduction to Soft Skills, Aspects of Soft Skills, Identifying your Soft Skills, Importance of Soft Skills, SWOT Analysis.

Module II - Forming Values

Values and Attitudes, Importance of Values, Self-Discipline, Personal Values - Cultural Values-Social Values-some examples, Recognition of one's own limits and deficiencies.

Module III – Email Writing

Email writing Skills, definition, examples, format and samples.

Module IV - Etiquette and Manners

ETIQUETTE- Introduction, Modern Etiquette, Benefits of Etiquette, Do's and Don'ts for Men and Women. MANNERS- Introduction, Importance of manners at various occasions, Professional manners, Mobile manners.

Reference books

- Butterfield, Jeff, 'Soft Skills for Everyone', Cengage Learning, New Delhi, 2010.
- G.S. Chauhan and Sangeeta Sharma, 'Soft Skills', Wiley, New Delhi, 2016.
- Klaus, Peggy, Jane Rohman & Molly Hamaker, 'The Hard Truth About Soft Skills', Harper Collins E-books, London, 2007.
- S.J. Petes, Francis, 'Soft Skills and Professional Communication', Tata McGraw Hill Education, New Delhi, 2011.

(SST.302) Basics of Programming- I

Course Outcomes – After the completion of this course, students will be able to

- Learn features of MATLAB as a programming tool.
- Promote new teaching model that will help to develop programming skills and technique to solve mathematical problems.
- Understand MATLAB graphic feature and its applications.
- Use MATLAB as a simulation tool.

Module I – Introduction to MATLAB

The MATLAB Environment, MATLAB Basics – Variables, Numbers, Operators, Expressions, Input and output. , Vectors, Arrays – Matrices

Module II – MATLAB Functions

Built-in Functions, User defined Functions.

Module III – Programming with MATLAB

Conditional Statements, Loops, MATLAB Programs – Programming and Debugging. Applications of MATLAB Programming.

Module IV – Basics of Python Programming

Introduction, python features, python variables, types of operators.

Reference books

- “A Guide to MATLAB - for Beginners and Experienced Users”, 2nd Ed., Brian R. Hunt, Ronald L. Lipsman, Jonathan M. Rosenberg, Cambridge University Press, (2006).
- “Essentials of MATLAB Programming”, 2nd Ed., Stephen J. Chapman, Cengage Learning, (2009).
- “MATLAB Demystified”, David McMahon, The McGraw-Hill Companies, (2007).
- “The Complete Reference : Python “ , Martin C. Brown, Mc Graw Hill Publication.

(SST.303) Solar Cell and Photovoltaic Technologies

Course Outcomes – After the completion of this course, students will be able to:

- Get familiar with basic principles of solar cells & PV modules.
- Learn about Solar Radiation.
- Get knowledge of fundamentals of flat-plate collectors.
- Know about solar cooker.

Module I: Solar Cells & PV modules

Solar cell types, equivalent circuit diagrams of solar cells, efficiency of solar cells and PV modules, solar photovoltaic systems & components.

Module II: Solar Radiation

Solar angles, day length, angle of incidence on tilted surface, sunpath diagrams, shadow determination, extraterrestrial characteristics, and effect of earth atmosphere.

Module III: Solar Collectors

Flat-plate collectors and concentrating type collectors.

Module IV: Applications of Solar Energy

Solar cooker, solar pond, solar passive heating and cooling systems, greenhouse technology.

References/Books:

- Solar Photovoltaics: Fundamentals, Technologies and Applications, Chetan Singh Solanki PHI; 3 edition 2015.
- Solar Photovoltaic Technology and Systems: A Manual for Technicians, Trainers and Engineers, Chetan Singh Solanki PHI (1 January 2013).
- Science & Technology of Photovoltaics P Jayrama Reddy, BS Publications, CRC Press 2010.
- From Sunlight to Electricity: A Practical Handbook on Solar Photovoltaic Applications, Suneel Deambi, The Energy and Resources Institute, TERI (30 January 2009).

(SST.304) SOLAR ENERGY STORAGE AND MANAGEMENT

Course Outcomes – After the completion of this course, students will be able to:

- Get familiar with basic principles of solar energy storage.
- Learn about Solar Battery storage.
- Get knowledge of fundamentals of mechanical storage.
- Know about thermal storage.

Module I: Grids

Need of storage, Types of solar energy storage system-Grid tied, grid/hybrid and off grid. Advantages and disadvantages.

Module II: Battery management & storage

Introduction, types of batteries and their working, battery capacity and other specifications, battery management, maintenance & testing of batteries.

Module III: Mechanical Storage

Introduction, Types, flywheel storage, pumped hydro storage, compressed-air storage.

Module IV: Thermal Storage

Introduction, types of thermal storage-two-tank direct system, two-tank indirect system, and single-tank thermocline system.

References/Books:

- R. Huggins, "Energy Storage", Springer science and business media, 2010.
- Y. Wu, "Lithium-Ion Batteries: Fundamentals and Applications (Electrochemical Energy Storage and Conversion)", CRC Press, 2015.
- T. M. Letcher, "Storing Energy: with Special Reference to Renewable Energy Sources", Elsevier science, 2016.
- P. T. Moseley, and J. Garche, "Electrochemical Energy Storage for Renewable Sources and Grid Balancing", Newnes, 2014.
- D. Wang, and G. Cao, "Nanomaterials for Energy Conversion and Storage", World Scientific Publishing Company, 2017

(SST.305) Programming Lab-I

Course Outcomes- At the end of this course, students will demonstrate the ability to-

- Understand the concept of MATLAB.
- Understand the concept of MATLAB-SIMULINK.
- Develop basic programmes using python.

List of Experiments

1. Introduction to MATLAB, Creating variables, some useful MATLAB Functions, Data Types.
2. Introduction to Graphing Functions Using MATLAB
3. Input and Output Statements
4. Conditional Statements, Introduction to Loops, Nested Loops and the Break Statement
5. Arrays & Array Functions
6. Introduction to MATLAB-SIMULINK.
7. Matlab/SIMULINK model of a photovoltaic cell.
8. Introduction to python programming.
9. To compute the GCD of two numbers using python.
10. To find the square root of a number using python.

(SST.306)Electrical Technology Lab

Course Outcomes- At the end of this course, students will demonstrate the ability to-

- Understand the use and importance of various types of equipments used in the laboratory.
- Understand the working of diode and rectifiers.
- Understand the working of transistor in various configurations.
- Understand the operation of amplifiers and oscillators.

Lectures/Demonstrations

1. V-I characteristics of PN diode.
2. Construction and working of rectifiers (Half wave & full wave).
3. Zener diode as voltage regulator.
4. Construction and working of transistor, transistor configurations (CB, CE & CC).
5. Voltage and power amplifiers.
6. Basics of oscillators.

List of Experiments

1. To plot V-I characteristics of PN diode.
 2. To study the operation of half wave rectifier.
 3. To study the operation of mid-point full wave rectifier.
 4. To study the operation of bridge type full wave rectifier.
 5. To study the operation of Zener diode voltage regulator.
 6. To draw the input-output characteristics of CB transistor.
 7. To draw the input-output characteristics of CE transistor.
 8. To draw the input-output characteristics of CC transistor.
 9. To study the operation of voltage and power amplifier.
 10. To study the working of oscillator and to observe the waveforms using CRO.
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Semester Snapshot - Semester 2

Entrepreneurship 102/201 (Marketing Basics)

6m2-102-25

Introduction

This semester helps learners understand marketing as a practical life skill - not just "advertising." It teaches them how to communicate value, attract the right customers, and grow something small into something sustainable. Learners explore the basics of customer psychology, messaging, content creation, and simple sales strategies. Through hands-on activities, they will practice real marketing techniques for their micro-hustle or a simulated business idea, learning how to get attention, build trust, and generate sales.

Learners Objective

- Understand the core concepts of marketing using simple, relatable real-world examples.
- Learn how customers think, choose, and buy—and how businesses influence decisions ethically.
- Identify and define a target customer clearly instead of "selling to everyone."
- Create clear messaging: what they sell, who it helps, and why it matters.
- Use basic marketing channels (offline + online) to attract customers.
- Run a simple marketing campaign and measure what worked.
- Build confidence in selling, promoting, and talking about their product/service.

Outcome

By the end of this semester, learners will be able to market a product/service using basic strategies, attract real customers, and improve their results through feedback and experimentation.

Guiding Principles/Approach

This syllabus is built on action-based learning, clarity-first communication, and customer-first thinking. Learners don't just *study* marketing - they *practice* it in real situations through small experiments and repeated improvement. The course is designed to feel approachable and practical: learners create simple content, test messaging, talk to real people, and observe what influences decisions.

Instead of heavy theory, students build marketing skills through doing: customer discovery, storytelling, channel experiments, and reflection. The curriculum emphasizes confidence-building, ethical marketing, and communication as a leadership skill. By helping learners see results quickly (even small wins like one customer or one inquiry), the program builds motivation, creativity, and real-world business readiness.

Semester 2 Curriculum

Recap Milestone

The recap milestone focuses on revising all the 12 milestones of semester 1 and also helps students understand the upcoming 12 milestones journey of semester 2.

Milestone #	Milestone Name	Milestone Description	Task #	Task Title	Activity title
Recap	Recap and Introduction	Revise what you learned in Semester 1 and plan what you will do in Semester 2	1	Revise first 12 milestones of Semester 1	Watch a video on "Semester 1 summary"
					Download 12 summary cards of Semester 1 milestones
					Write 3 key learnings of Semester 1
					Write 3 things you will improve in semester 2
					Attempt Semester 1 Recap Quiz
			2	Set your goals for Semester 2	Learn how to 4X your revenue in Semester 02 using Marketing
					Read how famous brands use marketing to increase revenue
					Set your marketing goals
					Attempt Semester 2 Readiness Quiz

Milestone 13: Marketing Fundamentals

Marketing Fundamentals milestone focuses on helping students understand the basics of marketing and how they can use marketing to scale their businesses and generate revenue.

Milestone #	Milestone Name	Milestone Description	Task #	Task Title	Activity title
13	Learn marketing fundamentals to scale your business	Learn how you can use multiple types of marketing to scale your business and grow your revenue	1	Understand what is marketing	Watch a video on marketing fundamentals
					Read examples of famous marketing campaigns in India
					Explain what you learned about marketing
					Attempt task 01 quiz
			2	Learn different types of digital marketing	Watch a video on what is digital marketing
					Read a document on types of digital marketing
					Write what what kind of digital marketing works best for your business and why
					Attempt task 02 quiz
			3	Write 3 marketing ideas for your business	Read a document on how businesses like yours are using marketing to generate revenue
					Write 3 marketing ideas to scale your business
					Validate your ideas with 3-5 people
					Shortlist the best idea and explain how it will generate revenue
					Share your experience of doing this milestone
		Attempt task 03 quiz			

WhatsApp Community Marketing milestone focuses on helping students learn how to build a WhatsApp community for their users and use it to generate trust, engagement, and sales.

Year	Percentage of Respondents (%)
1997	65
1998	75
1999	70
2000	75
2001	80
2002	82
2003	84
2004	85

Milest one #	Milestone Name	Milestone Description	Task #	Task Title	Activity title
14	Build and activate your WhatsApp community	Build a WhatsApp community for your users and use it to generate trust, engagement, and sales	1	Create your WhatsApp community	Watch a video on why you should build a WhatsApp Community
					Read a document on how to create a WhatsApp community
					Enter the name of your community
					Upload your WhatsApp community link
					Attempt task 01 quiz
			2	Invite people to join your WhatsApp community	Read a few sample invite and welcome messages
					Draft an invite message to invite 50 people to join your community
					Draft a welcome message for your community members
					Upload a screenshot of your welcome message
					Attempt task 02 quiz
			3	Engage your community users and start building trust	Learn 'how to engage people in your community'
					Read top 10 community engagement ideas for your business
					Write 5 types of content to post weekly in your community
					Create and upload your weekly calendar
					Attempt task 03 quiz
			4	Get 3 sales from your WhatsApp Community	Learn how to do soft-selling on community
					Create a community-only offer
					Learn how to convert interested people into paid customers
					Write a simple plan to generate 3 sales per month from the community
					Share your experience of doing this milestone
Attempt task 04 quiz					

Milestone 15: Generating Content for Marketing using AI

AI-led Content creation and marketing milestone focuses on helping students learn how to use AI tools to generate creative ideas and create professional videos, posters, and blogs.

Milestone #	Milestone Name	Milestone Description	Task #	Task Title	Activity title
15	Use AI to generate content for marketing	Learn how to use AI tools to generate creative ideas and create professional videos, posters, and blogs	1	Learn what is content marketing	Watch a video on 'what is content marketing'
					Learn which content works for brand awareness or revenue generation
					Write 3 types of content you believe your customers like
					Attempt task 01 quiz
			2	Generate content ideas to attract customers	Learn how to use AI to generate content marketing ideas for your business
					Generate 10 small content ideas to attract your customers
					Discuss the ideas with your users and take feedback
					Shortlist top 3 content ideas to attract customers
					Attempt task 02 quiz
			3	Create your first brand video using AI	Watch a video on "How to use AI tools to create simple short videos"
					Read this guide on how to ask AI to write a video script
					Generate 5 ideas for your AI videos and write them here
					Upload your AI generated video link
			4	Create a brand poster using AI	Attempt task 03 quiz
					Learn how to create a poster using AI
					Write a prompt for the poster will you create using AI
					Upload the AI poster you have

					created
					Post this poster in your WhatsApp community
					Attempt task 04 quiz
			5	Write a blog using AI	Learn how to use prompt engineering to write content for your business
					Read list of topics on which you can write a blog
					Write the topic on which you will write a short blog
					Write the first version of your blog
					Share your blog with your friends and faculty
					Share your experience of doing this milestone
					Attempt task 05 quiz

Milestone 16: Social Media Marketing

Social Media Marketing milestone focuses on helping students learn what social media marketing is and how to create a social media weekly plan that engages users and improves brand visibility.

Milestone #	Milestone Name	Milestone Description	Task #	Task Title	Activity title
16	Plan your social media marketing strategy	Learn what is social media marketing and how can you execute it to scale your business	1	Learn what is social media marketing	Watch a video on "Introduction to Social media marketing"
					Learn different types of social media marketing
					Read a document on how to use social media marketing to generate revenue
					Write your understanding of social media marketing
					Write one social media marketing idea for your business
					Attempt Task 01 Quiz
			2	Research your competitors	Learn how to research your competitors
					Find your competitors
					Write top 3 things your competitors are posting
					Find one unique gap that you can capture
					Attempt task 02 quiz
			3	Finalize your content pillars	Watch a video on 'what are content pillars'
					Read examples of 'content pillars'
					Write 5 content pillars for your social media strategy
					Attempt task 03 quiz
			4	Create your weekly social media plan	Watch a video on 'how to create a weekly social media plan'
					Look at examples of 'social media calendar'
					Create and upload your weekly calendar
					Upload the link of your Instagram Channel
					Share your experience of doing this milestone
Attempt task 04 quiz					

Milestone 17: Trust-led Marketing

Trust-led Marketing milestone focuses on helping students build trust through social media proofs, testimonials, or basic engagement and later converting them into leads and sales.

Milestone #	Milestone Name	Milestone Description	Task #	Task Title	Activity title
17	Generate leads and turn them into sales	Use testimonials, conversations, and daily posts to generate leads and close sales.	1	Use social proof to build trust	Identify 2 happy customers
					Create a testimonial post with CTA
					Post testimonial on social media
					Post testimonial on the community
					Attempt task 01 quiz
			2	Make people share their problems	Learn how to ask open-ended questions
					List 5 customer problems
					Post these problems in community and social media
					Evaluate top 2 problems customers face
					Encourage people to share their problems
			3	Help your users with 3-5 days content sprint and generate leads	Attempt task 02 quiz
					Brainstorm or use AI to create a solution document for each problem
					Post solution to 1 problem on a daily basis
					DM people to check if your solution is helping them
					Write how many leads did you generate
			4	Convert leads into sales	Attempt task 03 quiz
					Learn how to convert leads into sales
					Soft sell your offering in community and social media
					DM people how can your product help them better
					Follow up after 24 to 48 hours
Write how many leads you converted into sales					
Share your experience of doing this milestone					
Attempt task 04 quiz					

Milestone 18: Viral/Trend Marketing

Viral Marketing milestone focuses on helping students learn how to launch viral campaigns for their businesses using the latest trends and make their brand go viral without spending any money.

Milest one #	Milestone Name	Milestone Description	Task #	Task Title	Activity title
18	Make your brand go viral	Design viral marketing campaigns to reach 5X users without spending any money	1	Learn viral marketing	Understand what is virality and how it works
					Read about top 10 viral marketing campaigns in India
					Write 3 reasons why people share content
					Attempt task 01 quiz
			2	Design 2 viral campaigns for your business	Learn 5 types of common viral marketing strategies
					Read 10 viral marketing ideas for your business
					Design 2 viral campaigns for your business
					Take feedback from people and finalize one campaign
					Set your campaign targets
					Attempt task 02 quiz
			3	Launch one viral campaign to increase customer reach	Create your campaign launch video or poster
					Create your campaign launch message
					Launch your campaign on your social media platform
					Launch your campaign in your WhatsApp community
					Attempt task 03 quiz
			4	Promote your campaign to make it viral	Share your campaign in other groups and forums
					Measure your campaign performance
					Learn how to improve your campaign
					Analyze your campaign and record final metrics
					Enter the summary of your campaign
Share your experience of doing this milestone					
Attempt task 04 quiz					

Milestone 19: BTL/Offline Marketing

BTL/Offline Marketing milestone focuses on helping users learn about BTL (below the line) or offline marketing and use it to reach out to local customers and generate revenue.

Milestone #	Milestone Name	Milestone Description	Task #	Task Title	Activity title
19	Drive revenue through offline/BTL marketing	Use offline activities to reach local customers and generate sales	1	Understand offline or BTL marketing	Watch a video on what is BTL marketing
					Read about famous BTL marketing campaigns
					Write how you can use BTL marketing for your business
					Attempt task 01 quiz
			2	Pick your offline marketing idea	Learn about common offline tactics for your business
					Write 1 offline marketing idea you can execute
					Design your brand poster for offline marketing
					Create your offline marketing offer or pitch
					Practice your pitch with friends and take feedback
					Attempt task 02 quiz
			3	Execute offline marketing in local market	Identify people or locations in local for offline marketing
					Pitch to at least 10 real customers
					Collect contact details for WhatsApp Community invite
					Close at least one sale
					Write your offline marketing metrics
Share your experience of doing this milestone					
	Attempt task 03 quiz				

Milestone 20: Collaboration and Affiliate Marketing

Collaboration and Affiliate Marketing milestone focuses on helping users learn about affiliate marketing and how to collaborate with individuals/businesses to reach more customers and generate revenue.

Milestone #	Milestone Name	Milestone Description	Task #	Task Title	Activity title
20	Grow through collaboration and affiliation marketing	Use partners and affiliates to reach new audiences and generate sales	1	Understand affiliate marketing and collaboration	Watch a video on what is affiliate marketing
					Read about top collaboration or affiliate marketing campaigns
					Learn 10 common types of collaboration or affiliate marketing for your business
					Pick 3 types that can work for your business
					Attempt task 01 quiz
			2	Design your affiliation model	Learn how to start an affiliation program
					Decide your commission structure
					Write a pitch for partnership
					Attempt task 03 quiz
			3	Finalize one person or business for collaboration	Learn how to find a right partner for collaboration
					Create a list of 5 to 10 people or businesses for collaboration
					Send your partnership pitch to potential partners
					Write the name of one final partner
					Attempt task 03 quiz
			4	Execute the collaboration	Explain how will the partner market your brand
					Post the link or screenshot of successful collaboration
					Respond to new leads within 24 hours
					Close at least one sale
Attempt task 04 quiz					

			5	Measure your collaboration	Write number of leads generated
					Write number of sales closed and revenue generated
					Write what worked and how to improve collaboration
					Share your experience of doing this milestone
					Attempt task 05 quiz

Milestone 21: Advertising Marketing (Meta)

Advertising Marketing milestone focuses on helping users learn how to post a paid ad on Meta (Instagram and Facebook) promoting their business and reach to more users or generate revenue.

Milestone #	Milestone Name	Milestone Description	Task #	Task Title	Activity title
21	Run your first ad on Instagram	Learn how to boost posts or run simple video ads to reach new viewers	1	Setup your Meta Business Suite	Watch a video on why to run ads on Meta
					Learn different types of ads
					Read the guide on Meta Ad account setup
					Setup your Meta Ad account
					Attempt task 01 quiz
			2	Design your first paid ad	Watch samples of good ad designs for your business
					Finalize your ad objective
					Upload the final draft of your ad with final copy and creatives
					Attempt task 02 quiz
			3	Define your target audience and budget	Watch a video on 'how to target the right people for ad'
					Define your target audience
					Learn how to decide the right budget for your ad
					Decide your final budget
			4	Launch your ad	Attempt task 03 quiz
					Learn how to create and launch your ad
					Create your ad and review ad preview
					Upload the screenshot of launched ad
			5	Manage incoming leads from ad	Attempt task 04 quiz
					Draft a message for incoming leads
					Send draft message to leads within 24 hours
					Pitch your offer to leads and follow

					up
					Close at least one sale
					Attempt task 05 quiz
			6	Measure your ad performance	Learn metrics to measure ad performance
					Write money spent and leads or impressions
					Mention CPL or CPM
					Write revenue generated and number of sales closed
					Write what worked and how to improve ads in future
					Share your experience of doing this milestone
					Attempt task 06 quiz

Milestone 22: Psychological Marketing

Psychological Marketing milestone focuses on helping users identify psychological triggers like urgency, pricing, and offers, and use them to increase conversions and revenue.

Milestone #	Milestone Name	Milestone Description	Task #	Task Title	Activity title
22	Use Psychological Triggers to Increase Sales	Learn how to use urgency, pricing, and offers to increase conversions and revenue	1	Understand the psychological triggers	Learn why people buy products
					Share a story of one product you purchased because of a trigger
					Identify buying triggers for your business
					Attempt task 01 quiz
			2	Execute FOMO or urgency marketing	Learn how to create a FOMO or urgency marketing campaign
					Write how will you create FOMO or urgency for your customers
					Create one FOMO/urgency marketing campaign
					Launch your campaign on social media and community
					Attempt task 02 quiz
			3	Execute one offer or discount marketing campaign	Learn how to create offer or discounting marketing campaigns
					Write how will you create an offer/discount campaign
					Create one offer/discount campaign for your customers
					Launch your campaign on social media and community
Share your experience of doing this milestone					
Attempt task 03 quiz					

Milestone 23: Data-Driven Marketing

Data-Driven Marketing milestone focuses on helping users analyze the data of the last 10 milestones and run specific campaigns or ideas that resulted in lead generation or revenue.

Milestone #	Milestone Name	Milestone Description	Task #	Task Title	Activity title
23	Use Data-Driven Marketing to Grow Faster	Analyze data of the last 10 milestones to identify top campaigns or ideas and decide what to continue, improve, or stop.	1	Analyze your marketing data	Learn how businesses make decisions using data
					List 3 things that worked well and why
					List 3 things that didn't work well and why
					Attempt task 01 quiz
			2	Re-execute top performing campaign	Re-execute top 1-2 campaigns for 1 week
					Write how it helped generate leads or revenue
					Attempt task 02 quiz
			3	Improve one low performing campaign and relaunch it	Pick one low performing campaign and write how to improve it
					Improve the campaign and relaunch it
					Measure its performance and see if it was better
Share your experience of doing this milestone					
		Attempt task 03 quiz			

Milestone 24: Closure and Next Step

The final milestone focuses on helping users reflect on their learnings and also create an action plan for the next few months to continue to scale and grow their business.

Milestone #	Milestone Name	Milestone Description	Task #	Task Title	Activity title
24	Plan your next growth phase	Document your 12 weeks of learning and create a 1 month plan to scale and grow your business	1	Review your progress	List all the ideas you executed
					Write which milestone helped you the most and how
					Write which milestone helped you the least and why
					Write your key learnings from this semester
					Create a not-to-do list for your business
					Attempt task 01 quiz
			2	Create your 1 month marketing plan	Learn how to create a 1 month marketing plan
					Set your marketing goal
					Create and upload your 1 month plan to achieve this goal
					Share your experience of doing this milestone
					Attempt final semester quiz

