



**TATA INSTITUTE OF SOCIAL SCIENCES (TISS)  
SCHOOL OF SKILL EDUCATION (SSE)**

*(Declared as a Deemed to be University under Section 3 of UGC act 1956)  
A grant-in-aid institute under the Ministry of Education, Government of India)*

# GLOBALLY RECOGNIZED **SKILL DEGREE**



## **WORK INTEGRATED TECHNOLOGY PROGRAM**

**Certification Programs**

**Diploma Programs**

**Bachelor Degree Programs**

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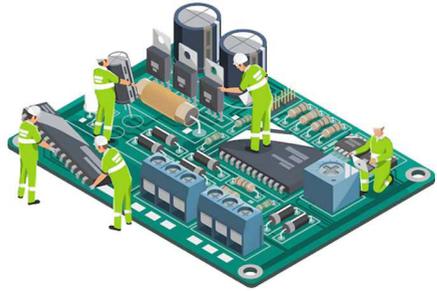
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# PROGRAM SYLLABUS

## ELECTRONICS

### Introduction of the Sector

The Indian electronics industry is one of the largest and fastest growing industries in the world. Electronics manufacturing industry in India is growing at a much faster pace due to the ever-growing demand for consumer electronics, IT and telecom goods. India is an attractive hub for foreign investments in the



manufacturing sector as well. Several mobile phones, luxury and automobile brands, among others, have set up or are looking to establish their manufacturing bases in the country. Here rises the demand for skilled professional Electronics Manufacturing Service providers.

## Bachelor in Electronic Manufacturing Services

### Programme Introduction

Bachelor in Electronic Manufacturing Services is specifically designed for students to gain skills and knowledge of Electronic Manufacturing so that they can relate themselves to the expected surge in Electronic Manufacturing industry.

### Eligibility for Admission

The eligibility for admission to Bachelor in Electronics Manufacturing Services is 10+2 or equivalent, in any stream

### Career Prospects/Job Roles

The job prospects after completion of the course of Bachelor in Electronic Manufacturing Services, are Line Supervisor, Production Supervisor, Quality Engineer, Product Quality Control Engineer, Incoming Quality Control Engineer and Material Controller.

## Semester wise list of Courses

SEMESTER I		
Course Code	Course Name	Credits
GE 1.1	Functional English	2
GE 1.2	Computing Skills and Digital Literacy	2
EMS 1.1	Fundamentals of Electrical Power Supply	2
EMS 1.2	Identification of components, tools, SOP and Work instructions	2
EMS 1.3	Tools, Equipment and Safety Measures	2
EMS ST1	Skill Training	12
CDPNE	*Domain Practicum	NC

SEMESTER II		
Course Code	Course Name	Credits
GE 2.1	Communication Skills	2
GE 2.2	Environment Studies and Sustainability	2
EMS 2.1	Fundamentals of Electronics	4
EMS 2.2	Soldering and De-soldering of Components and Emergency Actions	2
EMS ST2	Skill Training	12
CDPNE	*Domain Practicum	NC

SEMESTER III		
Course Code	Course Name	Credits
GE 3.1	Financial Literacy	2
GE 3.2	Basics of Legal and HR Policies	2
EMS 3.1	Fault Analysis and Repairs	4
EMS 3.2	Good Manufacturing Concept and Practices - I	2
EMS ST3	Skill Training	12
CDPNE	*Domain Practicum	NC

SEMESTER IV		
Course Code	Course Name	Credits
GE 4.1	Design Thinking	2
GE 4.2	Organizational Behaviour	2
EMS 4.1	Good Manufacturing Concepts Practices - II	2
EMS 4.2	Manufacturing and Quality Norms	2
EMS 4.3	Good Manufacturing Concepts and Practices - III	2
EMS ST4	Skill Training	12
CDPNE	*Domain Practicum	NC

SEMESTER V		
Course Code	Course Name	Credits
GE 5.1	Health and Wellness	2
GE 5.2	Personal Grooming	2
EMS 5.1	Valuation and Storage	2
EMS 5.2	Shelf Life, Warehouse Operations Management and Material Transactions	4
EMS ST5	Skill Training	12
CDPNE	*Domain Practicum	NC

SEMESTER VI		
Course Code	Course Name	Credits
GE 6.1	Entrepreneurship	2
GE 6.2	Employment Readiness	2
EMS 6.1	Pre-Production Activities	2
EMS 6.2	5S and Supervision	4
EMS ST6	Skill Training	12
CDPNE	*Domain Practicum	NC

\*Domain Practicum - "Compulsory and Non-credit, non-evaluative component"

**\*The skill training component is 50% to 60% ranging from 600 hours to 720 hours per year depending upon the industry requirement.**

# POWER

## Introduction of the Sector

Power is the most critical requirement towards the development and social parity of any country. With the increasing focus on Sustainable Development and resulting Sustainable Development Goal it is pertinent to harness the Renewable Sources of the Energy to its fullest. The existing source of power generation are also gradually being converted into more sustainable alternatives viz. Solar, Wind, Biomass, etc. |



## Bachelor in Renewable Energy Technology

### Programme Introduction

Bachelor in Renewable Energy deals with each source of renewable energy and the technical aspects associated with them. Let us consider solar energy as an example. The academic programme deals with various aspects of solar energy such as photovoltaic technology, solar power system, solar panels, installation, configuration, cost estimation, etc.

### Eligibility for Admission

The eligibility for admission to Bachelor in Renewable Energy Technology in shall be 10+2 (Science Stream) or equivalent OR 10+ITI (Trade: Wireman, Electrician).

### Career Prospects/Job Roles

Various sectors in engineering are electrical, environmental, mechanical, biochemical, IT and more. All types of engineers have a great career in the renewable energy sector as their role is to solve problems and develop new technologies.

Some of the prime recruiters are Solar Energy Firms, Wind Energy Technology Firms, Tidal Energy Technology Firms and Equipment Manufacturing Firms.

## Semester wise list of Courses

SEMESTER I		
Course Code	Course Name	Credits
GE 1.1	Functional English	2
GE 1.2	Computing Skills and Digital Literacy	2
RET 1.1	Fundamentals of Solar Energy	2
RET 1.2	Solar Radiation and Energy Conversion	2
RET 1.3	Solar Thermal Engineering and Application	2
RET ST1	Skill Training	12
CDPNE	*Domain Practicum	NC

SEMESTER II		
Subject Code	Course Name	Credits
GE 2.1	Communication Skills	2
GE 2.2	Environmental Studies and Sustainability	2
RET 2.1	Solar Photo Voltaic System and Plants	2
RET 2.2	Site assessment Array Structural Design	4
RET 2.3	Solar Energy Storage and Load Management	2
RET ST2	Skill Training	12
CDPNE	*Domain Practicum	NC

SEMESTER III		
Course Code	Course Name	Credits
GE 3.1	Financial Literacy	2
GE 3.2	Basics of Legal and HR Policies	2
RET 3.1	Bio-Gas, Bio-Mass and Bio Fuels	2
RET 3.2	Environmental Impact Assessment (EIA) Waste to Energy Conversions	2
RET 3.3	Micro-Hydro Power, Hydrogen Energy and Fuel Cell	2
RET ST3	Skill Training	12
CDPNE	*Domain Practicum	NC

SEMESTER IV		
Course Code	Course Name	Credits
GE 4.1	Design Thinking	2
GE 4.2	Organizational Behaviour	2
RET 4.1	Wind Energy Technology and Systems	2
RET 4.2	Other Renewable Energy Resources	2
RET 4.3	Solar Architect and Green Concept in building	2
RET ST4	Skill Training	12
CDPNE	*Domain Practicum	NC

SEMESTER V		
Course Code	Course Name	Credits
GE 5.1	Health and Wellness	2
GE 5.2	Personal Grooming	2
RET 5.1	Power Plant Engineering	2
RET 5.2	Energy Management Auditing and Energy Conversion	2
RET 5.3	Economics and Financing of Renewable Energy Systems	2
RET ST5	Skill Training	12
CDPNE	*Domain Practicum	NC

SEMESTER VI		
Course Code	Course Name	Credits
GE 6.1	Entrepreneurship	2
GE 6.2	Employment Readiness	2
RET 6.1	Introduction to Energy Financing	2
RET 6.2	Grid Integration and Distributed Generation of RE	2
RET 6.3	Operations and Maintenance and plant safety.	2
RET ST6	Skill Training	12
CDPNE	*Domain Practicum	NC

\*Domain Practicum - "Compulsory and Non-credit, non-evaluative component"

**\*The skill training component is 50% to 60% ranging from 600 hours to 720 hours per year depending upon the industry requirement.**

# CAREER & PLACEMENT OPPORTUNITIES

## Bachelor in Electronic Manufacturing Technology

Graduating with a TISS Bachelor's Degree in Electronic Manufacturing Technology opens up a wide range of career paths and job opportunities across core electronics industries, tech companies, and government sectors. Here's an overview of potential career directions:

- ⚙️ Electronics Manufacturing Engineer
- ⚙️ Production & Quality Control Engineer
- ⚙️ PCB Design Technician / Engineer
- ⚙️ Technical Sales Engineer
- ⚙️ Embedded Systems Developer
- ⚙️ Industrial Automation Technician
- ⚙️ R&D Assistant or Technician
- ⚙️ Service & Maintenance Engineer
- ⚙️ Sales / Project Engineer



**This degree is valid for many government roles, especially in:**

- Technician Roles in **ISRO, DRDO, BHEL, BEL, Indian Railways**, etc.
- Junior Engineer (JE) posts in **state electricity boards** or **public utilities**.
- Apprenticeships and Graduate Trainee roles in **electronics-heavy PSUs**
  - **PSC** (Public Service Commission) in Technical or Sustainability fields
  - **SSC** Scientific Assistant / JE roles
  - **UPSC** exams (Civil Services, IFS, etc.)

### Higher Study Options

- **M.Tech / PG Diploma** in Embedded Systems, VLSI Design, or Automation.
- **Overseas Master's Programs** in Electronics/Manufacturing Systems.





## Bachelor in Renewable Energy Technology

Graduating with a Bachelor's Degree in Renewable Energy Technology from TISS (Tata Institute of Social Sciences) equips you with practical skills and knowledge aligned with one of the **fastest-growing global industries**. Here's a detailed breakdown of **the career and job opportunities** you can pursue after graduation:



- ⚡ Solar PV Design Engineer / Installer
- ⚡ Wind Energy Technician
- ⚡ Energy Auditor / Efficiency Consultant
- ⚡ Sustainable Energy Project Engineer
- ⚡ Grid Integration Technician
- ⚡ Battery & Storage Systems Technician
- ⚡ EV Charging Infrastructure Technician
- ⚡ Smart Grid & Microgrid Assistant Engineer
- ⚡ Sales Engineer / Project Engineer

**This degree is valid for many government roles, especially in:**

- **SECI** (Solar Energy Corporation of India)
- **IREDA** (Indian Renewable Energy Development Agency)
- **NTPC, NHPC, BHEL, ONGC** Renewable Division
- **State Electricity Boards & Renewable Energy** Agencies
- **MNRE** (Ministry of New and Renewable Energy) Projects
- **PSC** in Technical or Sustainability fields, **UPSC** exams, **SSC** exams.

**Higher Study Options** ■ **M.Tech / PG Diploma** in Renewable Energy, Energy Management, or Sustainable Engineering.  
■ **MBA in Energy Management** (for leadership or consulting roles)

Program Type	Duration	Eligibility
Certification Program	1 year	+2 or Equivalent / 2 Years of ITI
Diploma Program	2 years	
Bachelor Degree Program	3 years	

Program Recognitions:



## OUR FEATURES

Tech Touch Campus

Startup Incubations

On Job Training (OJT)

Expert Talk Sessions

Industrial Visits (IV)

Placement Assistance



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