

Charutar Vivya Mandal 's

**C. L. PATEL INSTITUTE OF STUDIES AND
RESEARCH IN RENEWABLE ENERGY**

PROSPECTUS 2018

M.Sc. RENEWABLE ENERGY



**C. L. Patel Institute of Studies and Research in
Renewable Energy**

**(Affiliated to Sardar Pater University | 'A' grade by NAAC | CGPA 3.25)
www.isrre.edu.in**

Chairman's Message

Er. Bhikhubhai B. Patel, Chairman, Charutar Vidya mandal



I am happy to learn about the course and the research work in the field of renewable energy is being undertaken at the ISREE. It is high time to develop a skilled human resource with theoretical and practical knowledge of renewable energy technologies when the whole world is increasingly inclined toward renewable energy. The country has set up a certain goal to generate the power from renewable energy sources and reduce the dependency on fuel import. ISRRE is putting efforts in this direction with great zeal and continuous efforts to train the future human recourses as well as the conducting some good research through government funding. I heartily express all my good wishes for the progress of this institute and bright future for the students.

About Renewable Energy

Energy is essential for the progress and development of the mankind and nation. The availability of energy resources and capability to use in appropriate manner for the productive development of a nation is the key factor in the economic growth of the country.

The adequate supply of fuel ensures the continuous and sustainable growth. Presently we are more dependent on conventional petroleum fuels which causes the air and water pollution, emits hazardous emissions and responsible for global

warming. Rising prices of fuel and shortage in supply are major concern of our times. Energy crisis in late 70's forced the world to think about the alternative sources of energy which is clean and environmental friendly. The energy crisis had led to many innovations as well as research and development programmes in all sectors related to the energy. Ozone depletion and climate change have become more prominent issues in science and technology, industry and international relations. The role of renewable energy, energy conservation and energy management has come into a sharp focus in recent years.

To build sufficient technical capacity and develop economically viable renewable energy technologies and energy efficient systems and to meet the major objectives of the Ministry of New and Renewable Energy (MNRE) and the Bureau of Energy Efficiency (BEE), India, adequate scientific and technical manpower at all levels is required. Energy conservation and renewable energy utilization hold tremendous potential of employment generation and social entrepreneurship for human resources trained in almost all streams of engineering, technology, sciences and humanities. In fact, several self-employment opportunities in renewable energy and energy efficiency sectors for modestly-trained and self-trained human resources exist in all parts of country.

About Us

C. L. Patel Institute of Studies And Research in Renewable Energy (ISRRE) is one of the humble undertakings of CVM that upholds the mission of making a modern and prosperous independent India by providing modern education in the field of renewable energy. The institute is located in the blooming

environment of the extended educational township "New Vallabh Vidyanagar".

- The institute is located in vibrant campus of new Vallabh Vidyanagr, Anand and having 10 different institutes like engineering, biotechnology, ayurvedic, architectures, hotel management etc.
- The campus offers a state of art sport complex, gym, auditorium, amenities centers etc.
- Campus is active with co-curricular and extra-curricular activities providing opportunity for all round personality development.
- The institute has well qualified faculty members with PhD and NET
- The department has ongoing research project funded by Department of Science and Technology (DST) and GUJCOST
- Students are encouraged for regular industrial visit and industrial training
- The academic program is designed to establish an apex studies and research institution for carrying out state-of-the art teaching, research and developmental activities in the thrust area of renewable energy
- The course imparts an advanced technical level of education in renewable energy with specialization in systems technology, Environmental Modeling and Energy Management.

Vision

To develop renewable energy solutions & nurture human resources for sustainability of energy

Mission

- To promote use of renewable energy resources and sustainable technologies through education and technical assistance
- To provide the trained manpower in the field of renewable energy.

About Course

The institute offers a 2 year full time post graduate course; M.Sc. in Renewable Energy, with semester pattern (total four semesters) based on Choice Based Credit System (CBCS) and affiliated to Sardar Patel University, Vallabh Vidyanagar.

The institute focuses on academic studies as well research and development programmes. This will help the students to enhance their theoretical knowledge with practical understanding. The students can choose specialization with three distinct disciplines from third semester-

- I. System Technology
- II. Environmental Modeling
- III. Energy Management

The programme focuses on-

- Solar energy technologies for thermal & photovoltaic application
- Wind energy conversion technology
- Biomass conversion technology for thermal & power application
- Energy Conservation and management practices
- Compulsory project work/ dissertation in final semester for all students

- Curriculum is designed as per the guidelines of Sardar Patel University, V. V. Nagar
- It is at par with the global prerequisite for advanced Education
- Choice based specialization

Admission Procedure

Application

The admission to the M.Sc. renewable Energy is being conducted through Online Centralized Admission process by the Sardar Patel University, Vallabh Vidyanagar. The prior admission advertisement is published by the university in major news papers as well as it is available on university website (http://www.spuvvn.edu/students_corner/admissions/). Interested students have to fill up Online Application forms generally available in the month of May for every academic year. There will be help station at the University and the institute to assist the students to fill the online application.

Eligibility Criteria

The students from B.Sc. (any science graduate), B. E./B.Tech (All branches) /other science related fields from a recognized University of Gujarat / India are eligible.

Foreign students from SAARC and nearby countries, developing countries from Asia and Africa are also eligible for as per SPU norms.

Documents Required

Along with duly filled application form, following documents are to be submitted

1. Copy of degree certificate/ Grade certificate
2. Copy of leaving certificate
3. Copy of caste certificate if you belong to SC/ST/OBC
4. Two passport size photographs

At the time of admission, students will have to submit the following original documents, which will be returned after verification

1. Degree certificate/ Grade certificate
2. Leaving certificate
3. Caste certificate

Selection Procedure

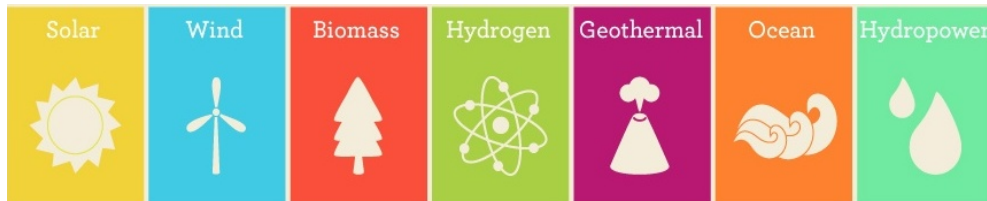
Selection of the candidates will be done on merit list from application received

Fee Structure

The tuition fees for the course is Rs. 32,500/- per semester. The hostel fees and gymkhana fees shall be applicable as per rules

Seats Available

Total available seats for the programme are 75



Course Content

M.Sc. Renewable Energy-First Year

SEMESTER-I

CORE COURSES

PS01CREN01: Fundamental of Renewable Energy Technology
 PS01CREN02: Solar Energy
 PS01CREN03: Geothermal Energy and Biomass Energy

ELECTIVE COURSES

PS01EREN01: Wind Energy
 PS01CREN04: Practical
 PS01CREN05: Practical
 PS01CREN06: Viva Voce

SEMESTER-II

CORE COURSES

PS02CREN01: Renewable Energy: Conversion, Storage and Environmental aspects
 PS02CREN02: Ocean Energy and Tidal Energy
 PS02CREN03: Hydro Energy and Chemical Energy Sources

ELECTIVE COURSES

PS02EREN01: Alternate Energy Sources
 PS02CREN04: Practical
 PS02CREN05: Practical
 PS02CREN06: Viva Voce

M.Sc. Renewable energy-Second Year (System Technology)

SEMESTER-III

CORE COURSES

PS03CREST1: Solar Photovoltaic Technology
 PS03CREST2: Numerical Method and Computer Programming
 PS03CREST3: Advances in Biomass Gasification
 PS03CREST4: Practical
 PS03CREST5: Practical
 PS03CREST6: Viva Voce

ELECTIVE COURSES

PS03EREST1: Optimum Utilization of Heat and Power
 PS03EREST2: Energy Economic, Policy & Regulation act
 PS03EREST3: Solar Thermal Technology

SEMESTER-IV

CORE COURSES

PS04CREST1: Wind Energy Technology
 PS04CREST2: Practical
 PS04CREST3: Project/ Dissertation
 PS04CREST4: Viva Voce

ELECTIVE COURSES

PS04EREST1: Research Methodology
 PS04EREST2: Modeling of Solar Thermal system
 PS04EREST3: Biofuel Technology

M.Sc. Renewable energy-Second Year (Environmental Modeling)

SEMESTER-III

CORE COURSES

PS3CREENM1: Combustion Technology
PS3CREENM2: Environmental and Pollution Control Technology
PS3CREENM3: Numerical Method and Computer Programming
PS3CREENM4: Practical
PS3CREENM5: Practical
PS3CREENM6: Viva Voce

ELECTIVE COURSES

PS3EREENM1: Green Energy Technology
PS3EREENM2: Energy Economic, Policy & Regulation act
PS3EREENM3: Energy and Environment

SEMESTER-IV

CORE COURSES

PS4CREENM1: Clean Development Mechanism
PS4CREENM2: Practical
PS4CREENM3: Project/ Dissertation
PS4CREENM4: Viva Voce

ELECTIVE COURSES

PS4EREENM1: Research Methodology
PS4EREENM2: Environment Policy and Environment Impact Assessment

M.Sc. Renewable energy(Energy Management), Second Year

SEMESTER-III

CORE COURSES

PS03CREEM1: Energy Audit and Management
PS03CREEM2: Energy Conservation in Thermal Systems
PS03CREEM3: Numerical Method and Computer Programming
PS03CREEM4: Practical
PS03CREEM5: Practical
PS03CREEM6: Viva Voce

ELECTIVE COURSES

PS03EREEM1: Demand Side Management of Energy
PS03EREEM2: Energy Economic, Policy & Regulation act
Management and Energy Recovery

SEMESTER-IV

CORE COURSES

PS04CREEM1: Energy Management in Buildings
PS03CREEM2: Practical
PS03CREEM3: Project/ Dissertation
PS03CREEM4: Viva Voce

ELECTIVE COURSES

PS04EREEM1: Research Methodology
PS04EREEM2: Energy Economics
PS04EREEM3: Energy Efficient Devices

Infrastructure Facility

Building

The institute has good infrastructure with all facilities like class room, laboratories. The new building construction is in progress in the same campus.



C. L. Patel Institute of Studies and Research in Renewable Energy (ISRRE)

Library

C. L. Patel Institute of Studies and Research in Renewable Energy (ISRRE) has a well-equipped Library with the latest Text book Reference books, Newsletters. We are in process of creating best facility with subscription of national, international journals, magazines.

Hostel

Hostel facilities are available to both boys and girls, on the campus with facilities of providing good mess facilities, Wi-fi connectivity

Transport facility

Charutar Vidya Mandal is providing the transport facilities for the students commuting from the outstation. The facility will be available from Railway Station, Vallabh Vidyanagar to New Vallabh Vidyanagar.

Laboratory

The institute has well equipped laboratory with all necessary equipments and instruments. Currently the institute has State of art solar park, biomass conversion, biomass gasification power generation laboratory, wind energy laboratory. Other required facilities development with advanced equipments and instrumentation is in progress.

Laboratory facility

Solar Laboratory

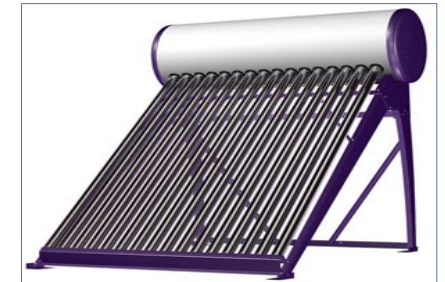
A dedicated and fully functional solar energy laboratory is equipped with high quality systems and instruments required for conducting the practical as well as research. The solar lab has been developed keeping in a view to give the students insight of the different solar energy technologies.

Wind Energy Laboratory

Wind energy laboratory focus on the studies related to wind energy generation technology and hybrid power generation. The wind energy lab has a prototype of wind and solar hybrid system to study the power generation characteristics of the combine energy generation.



Parabolic Solar Cooker



Solar Water Heater



Box type solar cooker



Pyranometer



Solar Dryer



Solar rooftop PV system



Wind –Solar Hybrid Laboratory Model

Biomass Conversion Laboratory

Biomass is one of the major sources of energy on the earth. The biomass conversion laboratory is dedicated to studies on the conversion and utilization of the biomass energy into different forms. The laboratory is equipped with all required facilities to conduct the practical as well as research projects.



Biomass Gasifier Power system



Gas Chromatograph



Online data logger



Improved Biomass Cookstove



Hot air oven



Muffle furnace

Career Prospects

Renewable Energy is fast growing sector as more and more industries are entering in Renewable Energy sector with requirement of skilled manpower. In India, renewable energy sector has created over 50,000 direct jobs in the last three years. It is estimated to create 2.4 million more jobs by 2030.

The prime areas where the students can mould their career are Project planning, manufacturing, installation, commissioning, operation and maintenance of renewable energy projects

- Energy management, energy conservation, energy audit
- Environmental policy/ legislation for both Government and private organization
- Waste management (municipal, large industries)

Career in Research and Development

- Scientific manpower in renewable energy technologies like solar photovoltaic, solar thermal, fuel cells, hydrogen, biomass conversion, wind energy
- Scientific data analysis
- University/ R & D institutions
- Private research organizations
- Private consulting and manufacturing firms
- Laboratories
- NGO's in the field of renewable energy

Recent Placement of our student:

Our students have usually gone on to jobs within the energy sector for variety of companies including MNCs as well as in academia. The recent placements of our students were in Illumine Energy Solutions, Lumino Energy Solutions, Zero Carbon Solution, Supernova Technologies, Titlis Energy Pvt. Ltd., JSL Industries Ltd.

Charutar Vidya Mandal

The town is the synthesis of varied cultures, which enable it to evolve and expand the quality life, as well as to foster the environment of creativity amongst the student citizens. Those who stay here always cherish the golden moments of life on the campus. Today, the town has compounded in strength and consolidated itself to take on the challenges of emerging future.

Vallabh Vidyanagar, established fifty-five years ago, carries a rarity of purpose behind its origin and a variety of education with its development and growth. Strategically located between Ahmedabad and Vadodara, Vallabh Vidyanagar today has emerged to be an Active Educational Hub in the Western parts of India. Just six kilometers from India's milk city-Anand, it has made its distinct identity in the sector of education by offering numerous emerging and innovative



educational programs and by attracting students from across the globe. Anand is situated between Ahmedabad and Vadodara on the main rail-link and also NH8, about 75 kms from Ahmedabad and 40 km from Vadodara.

Vallabh Vidyanagar is blessed with the beauty of nature. Its lush green trees of different types and kinds have not only made the town environment-friendly, but also created a serene and ever-enjoyable peaceful atmosphere generating synergistic pleasure on the campus. The pollution-free climate, attracting many to make the town their permanent home, adds value to the academic life on the campus. Vallabh Vidyanagar has all the amenities which major metropolis has; rather it has best of both the worlds - glamour of a big city and simplicity of a small town. On one hand, it captures the current trends of the youth, while it attempts to make those trends meaningful by making the presence of different spiritual centers felt. The town is the synthesis of varied cultures, which enable it to evolve and expand the quality life, as well as to foster the environment of creativity amongst the student citizens. Those who stay here always cherish the golden moments of life on the campus. Today, the town has compounded in strength and consolidated itself to take on the challenges of emerging future.

Present Team



Shri Prayasvin B Patel

President



Shri Manishbhai S. Patel

Vice - President



Shri Sumanthbai J. Patel

Trustee



Shri Hemantbhai J. Patel

Trustee



Er. Bhikhubhai B. Patel

Chairman



Dr. S. G. Patel

Hon. Secretary



Shri Mehul D. Patel

Hon. Jt. Secretary



Shri B. P. Patel

Hon. Jt. Secretary



Er. M. J. Patel

Hon. Jt. Secretary



Dr. Nikhil Zaveri

Director General



Contact Us

C. L. PATEL INSTITUTE OF STUDIES AND RESEARCH IN RENEWABLE ENERGY

ARIBAS Campus, New Vallabh Vidyanagar -388 121
Anand, Gujarat, India

Phone: +91 2692 231894

Mobile: (+91) 8758539347 | 9712422855 | 9427603032

E-mail: isrre.cvm@gmail.com | isrre.info@gmail.com

Website: www.isrre.edu.in, www.ecvm.net/isrre