**Finishing School Program (Online Internship)-2021**

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| **Name of Department** | **Department of Mechanical Engineering** |
| **Module Name** | **Renewable Energy: Applications& Modelling** |
| **Module Coordinators** | 1. Dr. Amrat Kumar Dhamneya 2. Dr. RaviKant Ranjan 3. Prof. Puneet KumarNema |
| **Module Objective** | The objective of this online internship is to give the idea about various sources of the renewable energy and its application in the different areas.The contents of the module are different from the syllabus and it is targeted towards industryrequirements. |
| **Module Content** | 1. Introduction of renewable energy. 2. Modelling and applications of Photovoltaic cell and flat plate collector. 3. Modelling and application of solar cooling system for Air Conditioning |
| **Module Methodology** | The module will cover the various aspects of Renewable energy resources and its applications. There will be some Interactive theory/modelling sessions to share the knowledge, followed by assignments, quizzesand worksheets. Students are required to submit the Internship Report in the department at the end of themodule. |
| **Module Outcome/ Impact** | Students will be able to:   1. Understand various resources of renewable energy. 2. Understand the basic concept of PV system and its design & applications. 3. Understand the basic concept of Flat plate collectorand its design & applications. 4. Understand the basic concept of single effect/double effect absorption refrigeration system and its design & applications. 5. Understand the basic concept of solar desiccant A/C system |
| **Duration** | 3 Weeks (15 days) |

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| **Day Wise Schedule** | | | | |
|  | **Date** | **Day** | **Module Contents to be covered/Interactive Session/Assignment/Quiz/Exercises/Daily practice sheets (DPP)/Tutorial/Project etc(10:00 AM onward, 2-3 Hrs/ Day)** | **Faculty** |
| **Week 1** | **14/05/2021** | Fri | **Energy in India today, Evolution of India’s energy system.** | Prof. Puneet KrNema |
| **15/05/2021** | Sat | **Introduction of Clean Energy.** | Prof. Puneet Kr Nema |
| **17/05/2021** | Mon | **Overview of solar energy technologies, Wind energy, technology and geographical aspects.** | Prof. Puneet Kr Nema |
| **18/05/2021** | Tue | **Geothermal and Biomass.** | Prof. Puneet Kr Nema |
| **19/05/2021** | Wed | **Wave energy and Hybrid Systems.** | Prof. Puneet Kr Nema |
| **Week 2** | **20/05/2021** | Thu | **Introduction to Photovoltaic system.**  **Introduction of Different solarair conditioning system.** | Dr. Amrat Kumar Dhamneya/ Dr. Ravi Kant Ranjan |
| **21/05/2021** | Fri | **Photovoltaic system and its characteristics curve.**  **Characteristics and working of Desiccant Indirect evaporative solar cooling.** | Dr. Amrat Kumar Dhamneya / Dr. Ravi Kant Ranjan |
| **22/05/2021** | Sat | **Types of Photovoltaic system and its applications.**  **Characteristics and working of Desiccant Indirect direct evaporative solar cooling.** | Dr. Amrat Kumar Dhamneya / Dr. Ravi Kant Ranjan |
| **24/05/2021** | Mon | **Introduction to materials used for the manufacturing of PV cell.**  **Introduction of absorption refrigeration system.** | Dr. Amrat Kumar Dhamneya / Dr. Ravi Kant Ranjan |
| **25/05/2021** | Tue | **Design of Solar PV System.**  **Design of single effect absorption refrigeration system.** | Dr. Amrat Kumar Dhamneya / Dr. Ravi Kant Ranjan |
| **Week 3** | **26/05/2021** | Wed | **Introduction to Flat plate collector: construction and working.**  **Design of double effect absorption refrigeration system.** | Dr. Amrat Kumar Dhamneya / Dr. Ravi Kant Ranjan |
| **27/05/2021** | Thu | **Types of different flat plate collectors.**  **Characteristics and Classification of Adsorption Refrigeration Systems Driven by Solar Energy.** | Dr. Amrat Kumar Dhamneya / Dr. Ravi Kant Ranjan |
| **28/05/2021** | Fri | **Design & modeling of Flat plate collector: I**  **Design & modeling of solar cooling system: I** | Dr. Amrat Kumar Dhamneya / Dr. Ravi Kant Ranjan |
| **29/05/2021** | Sat | **Design & modeling of Flat plate collector: IIDesign & modeling of solar cooling system: II** | Dr. Amrat Kumar Dhamneya / Dr. Ravi Kant Ranjan |
|  | **31/05/2021** | Mon | **Design & modeling of Flat plate collector: III Design & modeling of solar cooling system: III** | Dr. Amrat Kumar Dhamneya/ Dr. Ravi Kant Ranjan |

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| **Module Coordinators Email Id and Mobile Number** | 1. **Dr.AmratKr.Dhamneya**, [amratkumardhamneya@mitsgwalior.in](mailto:amratkumardhamneya@mitsgwalior.in)   Mob: 9981504706   1. **Dr. Ravi kantRanjan**, [rkranjan.11@mitsgwalior.in](mailto:rkranjan.11@mitsgwalior.in)   Mob: 8709413223   1. **Prof. Puneet Kumar Nema**, [puneetnema.1990@gmail.com](mailto:puneetnema.1990@gmail.com)   Mob: 8818828354 |

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# Eligibility and Important Instructions :-

1. The Online Finishing School Program (Online training/Internship) is designed only for Pre-final & Final Year students of Mechanical EngineeringDepartment.
2. The students may applyonline.
3. The Online Finishing School Program/ Summer Internship Program is free for the participants of Pre-final & Final year students of MITS,Gwalior.
4. The participants outside the Institute may also join the Program on paymentbasis.
5. This online module will be conducted under the Finishing School Program which will be considered equivalent to Online Internship of Pre-final year students who could notget any Internship during thissituation.
6. Duration of this program will be of four weeks which is equivalent to summer Internship period as per AICTE and our Institute policy. Daily no. of hours ofonline training may beflexible.
7. Certificates will be issued to candidates who have attendance 75% or more andalso score more than 60% in thetest.