

Module Handbook

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Course WIW-SUE-RET-K-7

Introduction to Renewable Energy Technologies (2V, 2.0 LP)

Course Type

SWS	Type	Course Form	CP (Effort)	Presence-Time / Self-Study
2	V	Lecture	2.0 CP	30 h 15 h
(2V)			2.0 CP	30 h 15 h

Basedata

SWS	2V
CP, Effort	2.0 CP = 45 h
Position of the semester	1 Sem. in SuSe
Level	[7] Master (Advanced)
Language	[EN] English
Lecturers	Kandpal, Tara, Prof. Dr. (EXT DEPT: WIW)
Lifecycle-State	[NORM] Active

Contents

- Global energy scenario and issues with fossil fuel utilization
- Different renewable sources of energy, their origin and basic characteristics
- Renewable energy resource assessment (solar, biomass, wind and hydro)
- Solar collectors- flat plate, evacuated tubular and concentrating type
- Thermal applications of solar energy
- Solar cells and their applications
- Thermo-chemical and bio-chemical conversion of biomass, bio-diesel
- Wind energy conversion systems

- Mini and micro-hydro systems
- Geothermal energy utilization
- Ocean thermal energy conversion
- Energy from tides and waves
- Integrated energy systems
- Renewable energy utilization in rural areas

Literature

- Chan S. Park "Contemporary Engineering Economics", Fifth Edition, Pearson Prentice Hall (2011)
- Gerald J. Thuesen and W. J. Fabrycky, Engineering Economy, Prentice Hall Inc. (2001)
- Harry Campbell and Richard Broron, Benefit – Cost Analysis, Cambridge University Press (2003)
- or any other standard text book on engineering economics
- T. C. Kandpal and H. P. Garg, "Financial Evaluation of Renewable Energy Technologies" Macmillan India Ltd. (2003) (soft scanned version of relevant portions can be made available to the students)
- Relevant literature from Research Journals, Reports etc (soft version shall be made available to the students)
- John Twidell and Tony Weir, Renewable Energy Resources, Taylor and Francis (2006).
- Godfrey Boyle, Renewable Energy: Power for a Sustainable Future, Oxford University Press (2004)

Requirements for attendance (informal)

None

Requirements for attendance (formal)

None

References to Course [WIW-SUE-RET-K-7]

Module	Name	Context	
[WIW-RE-ERT-M-7]	Economics and Financing of Renewable Energy	WP: Obligation to choose	2V, 2.0 LP