ST-202: August 3:0

Energy Systems and Sustainability

Instructor

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Teaching Assistant

Email:

Department: Centre for Sustainable Technologies

Course Time: Tuesday 5:30 to 7 pm and Friday 5:30 to 7 pm

Lecture venue: CST and Management department

Detailed Course Page:

Announcements

Brief description of the course

The course attracts students from various disciplines and has been a popular course amongst the UG students also.

The course focuses on the Conventional and renewable fuel processes and technologies with climate change as an important feature.

Further, the course deals with using these technologies for arriving at sustainability practices through techno-economic studies.

This semester it attracted 51 students.

Prerequisites

None

Syllabus

Basics of energy resources and systems, renewable energy technologies, climate change and sustainability, climate change mitigation options and low carbon future, energy technologies, economics, policies and programmes. Case studies on renewable energy projects.

Course outcomes

The course provides an insight into various energy conversion technologies with emphasis on addressing the overall mass and energy balance. Efficiency of the conversion processes and comparison with various technologies.

Using low carbon energy, creating scenarios using techno-economic studies which could intervene into the policy decisions.

Grading policy

Surprise test - 5 %

Tests - 10

Assignments - 10 %

Midterm 25 %

Final exam - 50 %

Assignments

Resources

M. M. El-Wakil, Power Plant Technology, McGraw Hill.1984.
Aldo Vieira Da Rosa, Fundamentals of Renewable Energy Processes , Elsevier, 2009.
Boyle, G., Everett, B. and Ramage, J., Energy Systems and Sustainability: Power for a Sustainable Future, Oxford University
Press, Oxford, UK, 2003.
Cassidy, E., and Grossman, P., Introduction to Energy Resources, Cambridge University Press, 1998.
IPCC, Renewable Energy Sources and Climate Change Mitigation - Special Report of the Intergovernmental Panel on
Climate Change (IPCC), Cambridge University Press, New York, 2012,
http://srren.ipccwg3.de/report/IPCC_SRREN_Full_Report.pdf.
Current literature