



MG281 JAN 3:0

Management of Technology for Sustainability

Instructor

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Department: Department of Management Studies

Course Time: Tue., Wed., 9:30 - 11:00 AM

Lecture venue: Class Room; Department of Management Studies

Detailed Course Page:

Announcements

Brief description of the course

This course is an attempt to introduce the concepts and principles of sustainability to the Management and Engineering students. Further, it covers the complex underlying interactions between resources, technologies and human activities. Next, it elaborates on how these interactions impact the natural system (environment/ecology) and man-made systems (economic and social), collectively termed as Sustainability. Finally, students are exposed to different methods to measure and quantify sustainability, possible solutions/approaches for achieving sustainability and pathways & case studies of sustainability transitions.

Prerequisites

NONE

Syllabus

1. Introduction to technology, sustainability and sustainable development - Technology; concepts and definitions; Concepts of sustainability and sustainable development; Components of sustainability (Social, Economic, Environmental).

2. Linkages between resource use, technology and sustainability - Interactions between energy and technology, and their implications for environment and sustainable development; Technology diffusion and commercialization; Business and sustainability

3. Measuring and Benchmarking Sustainability - Sustainability proofing; Frameworks for measuring sustainability; Indicators of sustainability

4. Sustainability transitions – Technologies and Economic sectors/systems; Sustainability transition – Case Studies; Sustainable innovations – Drivers and Barriers; Policy and institutional innovations for sustainability transition

Course outcomes

Better understanding of the whole issue of "Sustainability" and its critical relevance for future managers and professionals.

Need for an integrated approach in evaluating performances of business, organisations and individuals by taking into account both the positive and negative impact on economic, social and environmental systems.

Rethinking on depending "profit" alone as business performance to "triple bottom-line"

Methods to synthesize multi-dimensional, hierarchical and quasi-quantitative information.

Grading policy

Class Attendance & Participation - 10%

Mid-term Test - 25%

Individual seminar on sustainability topics - 15%

Final Term paper (Take-home exam) 20%

Final Exam - 30%

Assignments

Individual seminar on sustainability topics

Final Term paper (paper with about 5,000 words on a chosen topic - submitted and presented)

Resources

1. Dorf, Richard C., Technology, humans, and society: toward a sustainable world, Academic Press, 2001.
2. Rogers, P.P., Jalal, K.F. and Boyd, J.A., An Introduction to Sustainable Development, Prentice-Hall of India Pvt. Ltd., New Delhi, 2008.
3. Weaver, P., Jansen, L., Grootveld, G.V., Spiegel, E.V. and Vergragt, P., Sustainable Technology Development, Greenleaf Publishing, Sheffield, 2000.
4. Grubler, A., Technology and Global Change, Cambridge University Press, Cambridge, 2003.
5. Published papers and reports