Education for the Sustainable Future

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Existing Energy Research in IIT-B

Energy Efficiency, Process Integration, Demand Side Management

Solar Thermal

Biomass Gasification & Pyrolysis
Upcoming Energy Research in IIT-B

Fuel Cells and Hydrogen

Solar PV

Wind Energy

Clean Coal Technologies

Carbon Sequestration/ Capture

PEM Test Station

Bipolar Plate
Environmental Research Areas in IIT-B

1. Aerosol and Air Quality
2. Water and Wastewater
3. Environmental Biotechnology
4. Solid Wastes
5. Modelling, Planning and Management
6. Environmental Policy and Sustainable Development
Upcoming Environmental Research Areas in IIT-B

1. Urban Planning
2. Recycle & Reuse of Wastewaters
3. Rural Development
4. Disaster Management
5. Risk Assessment
6. Eco-habitats and Eco-housing
Imminent Challenges

• Amendments to India’s Constitution
• Newer Laws & Regulations
• Climate Change, Ozone Depletion, Desertification
• Poverty, Health, Development Deficit, Gender Equality
• Millennium Development Goals, Agenda - 21
• Balancing National Development Goals & Global Environmental Priorities
• India is Signatory to Several Int’l Initiatives
• Inter-disciplinary approaches – Biotechnology, Nano-Technology, Materials Science, Systems approach
• Strategic Global Linkages and Collaborations
Educational Activities and Possibilities for Collaboration

- UG students exchange (semester-long / year-long)

- Action Learning Projects for UGs – Semester-long, Field-work based, Combine UG/Grad student projects
Educational Activities and Possibilities for Collaboration

- Faculty exchange
- Ph.D. projects, co-guiding
- Co-teaching of UG & Graduate courses
- Quality Improvement Training for faculty from other engineering schools
Possibility # 1

UG Course:  *Environmental Studies*
One-semester duration
Sophomore-level
Several McDonnell partnering universities can co-teach
4 month-long modules
Beamed to subscribers
Possibility # 2

UG Course: *Engineering for Sustainable Futures*

One-semester duration

Senior-level or First-year Masters

Several McDonnell partnering universities can co-teach

2 or 3 modules + Action Learning Project

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Environmental Information System for Achieving Growth and Equity

Launched a new initiative for providing critical information and expert advice to Govt. and NGOs

Empowerment of people through collecting, owning, and disseminating env & dev data

Knowing the reality in diverse regions of India will help CESE in searching the right focus
Launched a new initiative for transitioning to sustainability in IITB campus

Several efforts have already been made on IITB campus (e.g. Dorm kitchen)

Environment and Energy Audit

Assessment of Biodiversity

Powai Lake Rejuvenation and Conservation

Nation-wide movement (Academic, Industrial, Commercial Premises)
Possibility # 3

Graduate Courses

or

Modules of Courses

Several McDonnell partners can co-teach
4 month-long modules
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