Module Code: AD-4307 / AV-4307

Module Title: Biomimicry

Programme: Bachelor of Arts

Type of Module: Major Option/Breadth

Modular Credits: 4

Student Workload: 8 – 10 hours per week

Contact Hours for timetabling: 2 hours per week

Prerequisite: None

Anti-requisite: None

Aims:

Biomimicry is an approach to sustainable development where nature is employed as the model of sustainability to stimulate and guide innovation across the gamut of activities in development, industrial and life processes to direct current trends towards a sustainable pathway. It calls for a closer examination of nature in order to discover sustainable designs embedded in structures and processes of living systems. The module aims to introduce the student to this perspective and approach of addressing common environmental and development issues. It will also engage the student to address specific sustainability issues using lessons learned from biomimicry research, fundamental principles of biomimicry and a closer examination of organisms and natural systems. The module hopes to instill a deep, life-long appreciation of natural forms and processes, and inspire the student to innovate sustainable solutions through mimicking nature.

Module Content:

- Industrial revolution & the beat-heat-treat mantra
- Embedded wisdom through 4 billion years of evolution
- The egg shell: natural vs. industrial approach
- Harnessing energy and material from the environment
- Growing cities like rainforests
- Facing environmental change like mussels and mangroves
- Realigning with nature vs. mechanization: sustainability debate

Assessment:

Examination: 60%

Coursework: 40%

1 essay (20%)
1 project report (20%)

Textbook(s)/References:

