

## Science

### **Evolution: A Journey through Life and Science**

#### **Course Outline:**

Darwin's theory of Evolution by Natural Selection took the world by storm when it was first proposed in a joint publication along with Alfred Russell Wallace in 1858. The theory shattered several illusions held by lay person and scientist alike. The Origin of Species which was published the subsequent year continues to be widely read, debated and thought about. Natural Selection is a slow, non-directional and yet non-random process. The discovery of the gene by Mendel and the rediscovery of this work in 1900, led to a deeper understanding of the genetic basis of Evolution. These discoveries, besides giving an explanatory power to the discipline of biology, also had ramifications in various other disciplines such as: economics, sociology, etc. It also opened up areas in the Philosophy of Biology and our understanding of the nature and process of science. In recent times, many controversies regarding teaching of Evolution in Schools (especially in the West), and its contemporary presence in our daily lives have received much attention and debate. The course will thus also take students through a trans-disciplinary journey of science and sociology of Evolution as an idea.

Sindhu Mathai is a Faculty Member at the Azim Premji University. Her profile may be viewed at: <http://www.azimpremjiuniversity.edu.in/people>

### **Exploring the World of Trees – and the World through Trees**

#### **Course Outline:**

We have walked among, played in the branches and sat in the shade of these mighty giants since we were children. From wheels to draw water, to ploughs to grow our food, to leaves that were used as writing tablets, to timber that supported our habitat, trees have played a role in

the march of civilization. They have inspired poets and story tellers. Trees have been around much longer than humans or proto-humans. They grow taller and live much longer!

This course explores the varied queries about trees through documentaries, select readings, lectures, discussions, walks, a trip to the wood museum and a weekend trip to BR hills. The course is designed so students deepen and enrich their knowledge of trees through various inter-connected perspectives. It will explore trees through the medium of art, biology, social sciences and literature. A desired outcome would be a broader connect with nature and its services through the familiar and iconic 'trees'.

**Profile:**

Gladwin Joseph is a Faculty Member at the Azim Premji University. His profile may be viewed at: <http://www.azimpremjiuniversity.edu.in/people>.

## **Herpetology: An Introduction to the World of Reptiles and Amphibians**

**Course Outline:**

Tropical regions are typically characterized by frequent interactions between humans and reptiles. It is estimated that snakebites account for almost fifty thousand deaths in India each year. Many of these casualties can be avoided with a clear understanding of the appropriate first-aid and subsequent medical treatment. However, despite the increasing number of publications about reptiles, what one sees represented in the media remains largely based on fear, myths and misinformation.

This course will introduce students to the evolutionary and ecological basics of herpetology. On completion of the course the students will: **a.** Have an overview of the field of herpetology **b.** Learn basics of identifying snakes, lizards and frogs and **c.** Acquire elementary protocols for managing snakebite first aid.

**Profile:**

This course was offered in the semester Jan 2014- April 2014 and was anchored by Mr. Gerry Martin and Mr. Sumanth Madhav. Below is the brief profile of Mr. Martin and the course outline.

## Lives of Birds

### Course Outline:

Birds are everywhere. If you close your eyes and pay attention to the sounds around you, you are sure to hear a bird. Even a city as crowded and concretized as Bangalore is home to over 350 different kinds!

This course is aimed at people who want to pause and take notice of the birds in their lives. How do they fly? Why do some of them migrate from pole to pole every year? Why are they so noisy? Students will also get to meet and interact with a few Indian ornithologists. Finally, the course will look at the challenges that birds face in a world reshaped by and for humans.

### Profile:



Hari Sridhar is a post-doctoral fellow at the Indian Institute of Science, Bangalore. His main research interests are in behavioral ecology and community ecology, with a special focus on mixed-species social groups of birds. Hari also serves as an editor for the magazine Current Conservation.