**III.2.14 BIOLOGICAL INDICATORS FOR ENVIRONMENT**

**A. Course description**

**1. Credit points: 2 ECTS**

**2. Time commitment**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Items | Lecture | Tutorial/  Exercise | Practice/  Assignment | Lab-work | Total |
| No. of hours | 17 | 3 |  |  | 20 |

3. **Prerequisites:** General and Organic Chemistry

**4. Recommended background knowledge:** Biology, General Chemistry, Water Pollution

**5. Subject description**

Environmental problems are of great concern to both the developed and developing countries because almost all of the chemicals are semi-volatile and are distributed globally via various transport pathways. Pollution by many man-made chemicals always occur on a global scale and can never be regional. Therefore all nations have the urgent duty of making an organized effort to evaluate the environmental changes caused by such chemicals and to control their negative effects. The easiest possible method is to use suitable bioindicators. The concentrations of chemicals in several organisms have thus far been quatified in various parts of the world.

**6. Objectives & Outcome**

Know how to use the techniques of Green Chemistry in catalysis and organic synthesis

**7. Assessment/ Evaluation**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Component | Attendance | Exercises | Assignments | Practicals | Midterm | Final |
| Percentage % |  |  |  |  |  | 100 |

**8. Prescribed Textbook(s):** N/A

**B. Course content**

1 Introduction

2 Using mussels as bioindicator

3 Squids as bioindicator

4 Fish as bioindicator

5 Bird as bioindicator

6 Marine mammals as bioindicator

7 Human as bioindicator