**EXPLORING LIFE IN THE NEIGHBORHOOD**

**LAB COURSE (BIO-1002/ ES-2901)**

**Course instructors:**

Dr Imroze Khan

Email: [imroze.khan@ashoka.edu.in](mailto:imroze.khan@ashoka.edu.in)

Office: AC-03, 3rd floor, Room No. 309

Office hours: By prior appointment

Dr Kritika Garg

Email:kritika.garg@ashoka.edu.in

Office: AC-02, 341

Office hours: By prior appointment

Dr Shivani Krishna

Email: shivani.krishna@ashoka.edu.in

Office: AC-03, 3rd floor, Room No. 307

Office hours: By prior appointment

**Course Objectives:**

The goal of this course is to introduce students to their local ecosystem and biological world by involving both fieldwork and lab work. The course will also have open ended exercises, wherein students will be encouraged to come up with small questions and seek answers by experimentation.

**Course structure:**

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| **Week** | | **Theme** | | **Topic** | | **Lecture** | |
| 1 | Our neighborhood | | Diversity around us:  e.g. Birds around us | | Breaking the Ice | |
| 2 |  | | Tiny neighbors: Insects around us | | Hypothesis testing and plotting data | |
| 3 |  | | Spot and track: How do they behave? | | Understanding behavior | |
| 4 |  | | Aligning with ants | | Hypothesis formulation | |
| 5 |  | | Sounds around us: Acoustic diversity | | Introduction to bioacoustics and how to record sound data | |
| 6 |  | | See the unseen I: Planktonic world Diversity | |  | |
| 7 |  | | See the unseen II: Microbes around us | | Introduction to microbial world | |
| 8 | Conflict in nature | | Predator-prey systems: The red hourglass | |  | |
| 9 |  | | Animal interactions | | Categorize behavioral interactions | |
| 10 |  | | Battle of sexes: In search of Dorian Gray's world | |  | |
| 11 | Organisms and environment | | Being cannibals: Are they around us? | |  | |
| 12 |  | | Spread of disease: Can we track them? | |  | |
| 13 |  | | Chemical world of our tiny neighbors | | Organisms and their chemical pursuits | |

*Note that this is a tentative course structure and hence, is subject to further change, if*

*necessary.*

**Important points to remember:**

1. Coming late to class is not acceptable and will result in reduction of your participation grade. So please be on time. Also, attendance will not be counted unless the student is present for the entire duration of the class.
2. Attendance is mandatory. Absences are only excused if the student routes their excused absences via the OAA’s office.
3. It is not possible to repeat experiments that have been missed.
4. This course is about observing ecology at work and involves field work. While in the field, utmost care must be taken so as not to disturb the life forms. The following precautions should also be taken:

* Dull-colored clothes should be worn, and one should talk softly. Noise levels should be minimized to avoid disturbing birds etc.
* Do not interact with or attempt to change the behaviour of any study subject in any way.
* Full pants and closed shoes are preferable over shorts and sandals/ slippers. This is for the sake of protecting oneself from thorns etc.
* One must not stray away from the group and go off exploring alone.

1. Field or lab notes should be properly maintained. Every detail of whatever was done or observed in the field or lab should be noted down then and there. Photographs of life forms observed should be clicked wherever possible. This is so that students will not face problems while writing the homework assignment.
2. If the experiment results are to be collected on the day after the experiment, then students must make sure that they do so. If a time is given, it has to be adhered to.
3. Reports will notbe accepted after the deadline. The submission from each class will be due by 12 midnight on the day before the next class, and delays are not acceptable.
4. Any work submitted within the first 24 hours following the submission deadline will receive a penalization of 10% of the maximum marks allocated. Any work submitted at any time between 24 hours and up to 48 hours late will receive a deduction of 20% of the marks available, and so on, at the rate of an additional 10% of available marks deducted per 24 hours, until the report is submitted or no marks remain.
5. **There is a *strict* anti-plagiarism policy.** Each student’s assignment should be their own independent work, and *not* copied from any other student or any other source. Even in case of group work (5-6 people), each student in the group should submit an independent homework assignment. Information taken from another source should be paraphrased and mentioned with proper referencing.
6. As far as images connected to the day’s work are concerned, it is best for the homework assignment to contain relevant photographs clicked by the student themselves during the field or lab work. In the event that an image from another source needs to be used, it should be properly referenced.
7. Language of instruction is English. However, if you feel the necessity of language diversity, please inform us.

**Tentative grading and evaluation scheme:**

1. Attendance and discussion (5%): Every week, there will be one class, where activities include field visits, lab exercises and discussion. Students will be evaluated on their participation in these, where participation grades will be based on quality of participation.
2. Weekly lab reports (90%): Students will have to submit weekly lab reports on their experiment. However, we will drop the lowest two assignment scores during final evaluation. We will consider best 9 assignments. You will be evaluated based on how structured and meticulous (and honest) you are, not entirely on the experimental results. We will also consider your critical abilities (e.g. pointing out strength and weakness of experimental methods, future direction) while writing the report.
3. Lab etiquettes (5%): You will be evaluated based on how you behave and follow the lab protocols in the lab.
4. Percentage to grade conversion: >= 90% A, 85- < 90 A-, 75- < 85 B+, 70- < 75 C+, 60- < 70 C, 40- < 60 D, <40 F.