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| _Pic2 | The Islamia University of Bahawalpur  Abbasia Campus, Bahawalpur, Pakistan Ph: +92 - 62 - 9239114, Fax: +92 - 62 - 9250099 [Email:qec@iub.edu.pk](mailto:qec@iub.edu.pk) |

**Tentative Course Plan**

**Department of Entomology**

**University College of Agriculture & Environmental Sciences**

**Class:** B.Sc. (Hons.) Entomology **Semester-** 2nd (Section D)

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| **Instructor** | Dr. Sajjad Ali | | **Email:** Sajjad.ali@iub.edu.pk | |
| **Course Title** | Introductory Entomology | | **Program** | B.Sc. (Hons.) Agriculture |
| **Course Number** | ENT-302 | | **Credit Hours** | 3(2-1) |
| **Lecture** | As per time table of College | | | |
| **Course Objective:** | | | | |
| This course is designed to introduce the students to basic concepts of entomology.  1. To familiarize the students with insects and arachnids and their external and internal features  2. To equip the students to identify insects and arachnids of economic importance.  3. To acquire working skills for collecting, mounting, and preserving insects | | | | |
| **Course Outcomes:**  Students will be familiarized with insects and arachnids in general. They will also be familiarized with classification of insects, their morphology, anatomy and physiology in general. They will learn about the process of metamorphosis and its types. Besides this, they will learn about different insect orders and important families. | | | | |
| **Methods of Teaching** | | | | |
| • Audiovisual lectures  • Assigned readings  • Group activities & Discussion (Analytical and critical thinking)  • Web-assisted instruction  • Student Questions Encouraged  • Well moral and educational ethics during the class | | | | |
| **Resource**  **Material** | Books Prescribed: | | | |
| 1. Ahmad, I. 2010. Hashriat ―Insects‖. National Book Foundation, Lahore 2. Awastheir, V.B. 2009. Introduction to General and Applied Entomology. Scientific Publisher, Jodhpur, India. 3. Dhaliwal, G.S. 2007. An Outline of Entomology. Kalyani Publishers, Ludhiana. 4. Elzinga, R.J. 2003. Fundamentals of Entomology. Prentice Hall. 5. Lohar, M.K. 2001. Introductory Entomology. Department of Entomology, Sindh Agriculture University Tandojam Sindh, Pakistan. 6. Richards, O.W. and Davies, R. G. 2004. Imm‘s General Text-book of Entomology, Vol. I. and II, 10th Ed. Chapman & Hall, London, N.Y. 7. Triplehorn, C.A. and Jhonson, N.F. 2005. Borror and DeLong‘s Introduction to the study of Insects. Brooks Cole. 7th Ed. 8. Trigunayat, M.M. 2009. A Manual of Practical Entomology. 2nd Edition Scientific Publisher (India) Judhupur. 9. Yousuf, M. Tayyab, M. and Shazia, Y. 2007. Manual of Introductory Entomology, University of Agriculture, Faisalabad. 10. Fenemore, P.G. and Prakash, A. 2006. Applied Entomology (2nd Edition). New Age International (P) Limited, Publishers, New Delhi, India. | | | |
| 2.Reference Book | 3.Research papers | | |
| i | i |  | |
|  | ii | ii |  | |
| 4.Hot Research paper | 5.Web Resources | | |
| i | i |  | |
| ii | ii |  | |
| **Office Help Hours** | Monday to Friday: 8:30 am to 4:30 pm | | | |
| **Grading** | Exam (Date to be announced)  Mid- Exam (30%) Final Exam (50%)  Problem Session/Assignments (20%) | | | |
| **Problem Session** | Monday to Friday: 8:30 am to 04:30 pm | | | |
| **SEQUENCE OF TOPICS TO BE COVERED** | | | | |
| **Week #** | **Topics (outline of main topics and sub topics)** | | | |
| **1.** | Introduction of Entomology and Phylum Arthropoda with its classification | | | |
| **2.** | Introduction to different collection equipments, tools and devices, Methods to set, preserve and mount the insect specimen | | | |
| **3.** | Introduction to Insect metamorphosis and its types, Types of insect eggs, larvae and pupae | | | |
| **4.** | Morphology of insect head (frontal, lateral, dorsal and back view) | | | |
| **5.** | Morphology of insect thorax (Prothorax, Mesothorax and Metathorax of Ak Grasshopper) | | | |
| **6.** | Insect classification and orders (Families of economic importance with examples) | | | |
| **7.** | Appendages of insect head (Antenna structure and its types, structure of mouth parts and its types) | | | |
| **8.** | **Revision and Mid exams** | | | |
| **9.** | Morphology of Insect abdomen including Male and Female Genetalia | | | |
| **10.** | Appendages of insect thorax (wings and legs with their structures and types) | | | |
| **11.** | Insect classification and orders (Families of economic importance with example) | | | |
| **12.** | Structure of insect head endoskeleton | | | |
| **13.** | Study of digestive system and reproductive system, excretory systems of model insect | | | |
| **14.** | Study of circulatory system, nervous system, respiratory systems of model insect | | | |
| **15.** | Practical performance and Revision of the course | | | |
| **16.** | **Final Exams** | | | |

**Student Evaluation criteria:**

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| Attendance | 5% |
| Workshop / Assignments/Case study | 5% |
| Surprise Test/Sudden Test, Quizzes | 5% |
| Class Participation | 5% |
| Mid Term Paper | 30% |
| Final Term paper | 50% |
| **Total** | **100%** |

**Student Responsibilities:**

Students must attend class. Failure to attend class may result in failure in the course. Students must also arrive on time and remain in class for the entire period. Cellular Phones and Beeper must be Turned off (Proper classroom decorum [behavior] adopts, Course outlines and calendars explain requirements and assignments, students are responsible for knowing what they say. Students are also responsible for doing all assigned work on time. Excessive absences (more than 03) will result in “F Grade”. Students may prepare Sketchbook for taking notes and for references.

**Instructor/Tutor**

Approved by:

**Dean/ Chairman/ HOD/ Subject Specialist/ Program Coordinator**

COURSE CONTENTS

**Theory**:

Introduction; phylum Arthropoda and its classification; insect metamorphosis and its types (types of insect eggs, larvae and pupae); Insect morphology (insect body structure, regions and their appendages), Insect anatomy and physiology (endoskeleton and its different body systems); insect classification, salient characters of insect orders; families of economic importance with examples of each family.

**Practical**:

Characters of classes of Arthropoda; collection and preservation of insects; morphology and dissection of a typical insect (digestive, reproductive, excretory, nervous, circulatory and tracheal systems); temporary mounts of different types of appendages of insects; types of metamorphosis.