



المركز الوطني للتقويم والاعتماد الأكاديمي
National Center for Academic Accreditation and Evaluation

ATTACHMENT 5.

T6. COURSE SPECIFICATIONS (CS)

Principles of Ecology (BIO 271)

Course Specifications

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|-------------------------------------|-----------------|
| Institution: University of Tabuk | Date: 19/1/1441 |
| College/Department: Science/Biology | |

A. Course Identification and General Information

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| 1. Course title and code: Principles of Ecology (BIO 271) | | |
| 2. Credit hours: 3 | | |
| 3. Program(s) in which the course is offered. (If general elective available in many programs indicate this rather than list programs) General Biology Program | | |
| 4. Name of faculty member responsible for the course: | | |
| 5. Level/year at which this course is offered: Level 4 | | |
| 6. Pre-requisites for this course (if any): General Biology 1 (BIO 101) | | |
| 7. Co-requisites for this course (if any): | | |
| 8. Location if not on main campus: | | |
| 9. Mode of Instruction (mark all that apply): | | |
| a. traditional classroom | <input checked="" type="checkbox"/> What percentage? | <input type="text" value="75"/> |
| b. blended (traditional and online) | <input type="checkbox"/> What percentage? | <input type="text"/> |
| c. e-learning | <input type="checkbox"/> What percentage? | <input type="text"/> |
| d. correspondence | <input type="checkbox"/> What percentage? | <input type="text"/> |
| f. other (Lab work) | <input checked="" type="checkbox"/> What percentage? | <input type="text" value="25"/> |
| Comments: | | |

B Objectives

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| <p>1. What is the main purpose for this course? The main purpose of the course are to provide information to the students about the following:</p> <ul style="list-style-type: none"> • What is ecology and what ecologists do and what they need to understand to make sense of the patterns and processes in nature. • This course also aims at providing students with an introduction to the fundamentals of ecology and conservation. • Subjects such as components of environment, diversity of ecosystems, and structure of natural communities and identification of habitats for wild life are included. • Subjects such as structure of the atmosphere, food web, ecological pyramids, succession of vegetation, natural resources and their conservation, sources and minimization of pollution are also included |
| <p>2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)</p> <ul style="list-style-type: none"> - The course contents will be periodically reviewed by the instructors and the undergraduate committee to include new materials of relevance and improved teaching methods. - Increasing the credit hours for practical session to ameliorate to its course in order to realize the theoretical one. |

C. Course Description (Note: General description in the form used in Bulletin or handbook)

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| <p>Course Description:</p> <ul style="list-style-type: none"> ▪ The course includes some definition of ecology and its concept, components of environment, the biotic and abiotic factors and their role on developing the community, ecosystem; its types, changes and productivity. It also includes the community and ecosystem dynamics Structure of the atmosphere, Water and mineral cycles and energy flow, Ecological pyramids, Succession of vegetation, Natural resources and their conservation, Environmental pollution (types, sources, minimization). |
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| 1. Topics to be Covered | | |
|---|--------------|---------------|
| List of Topics | No. of Weeks | Contact hours |
| Introduction (what is ecology and what ecologists do and what they need to understand to make senses of the patterns and processes in nature) | 1 | 2 |
| Definitions of ecology | 1 | 2 |
| Components of the environment | 1 | 2 |
| Role of biological and physical factors in developing community structure | 1 | 2 |
| Ecosystem (structure and types) | 1 | 2 |
| Productivity of ecosystems | 1 | 2 |
| Community and ecosystem dynamics | 1 | 2 |

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| Structure of the atmosphere | 1 | 2 |
| Water and mineral cycles and energy flow | 1 | 2 |
| Ecological pyramids | 1 | 2 |
| Succession of vegetation | 1 | 2 |
| Natural resources and their conservation | 1 | 2 |
| Environmental pollution (types, sources, minimization) | 1 | 2 |

2. Course components (total contact hours and credits per semester):

| | | Lecture | Tutorial | Laboratory/ Studio | Practical | Other: | Total |
|---------------|---------|---------|----------|-----------------------|-----------|--------|-------|
| Contact Hours | Planned | 26. | | | 26. | | 52 |
| | Actual | 26. | | | 26 | | 52 |
| Credit | Planned | 2 | | | 1 | | 3 |
| | Actual | 2 | | | 1 | | 3 |

3. Additional private study/learning hours expected for students per week. 8

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

| | NQF Learning Domains And Course Learning Outcomes | Course Teaching Strategies | Course Assessment Methods |
|------------|---|---|---|
| 1.0 | Knowledge | | |
| 1.1 | Describe Ecology and its principles in relation to living organisms. | - Demonstration to reproduce visual and interactive methods to inculcate the concepts of Ecology and Environment. | - Individuals and group discussions interacting teachers and students |
| 1.2 | - State Ecology and environment principles. | - To encourage students through research activities to learn more by increasing interest in the subject. | - Conducting quiz - Group discussion - Home assignments - Periodical exams |
| 2.0 | Cognitive Skills | | |
| 2.1 | Explain major ideas relating to ecology and environment. Develop clear understanding about causes consequences and control of ecological issues. | - Presentations using electronic and print media - Classroom lectures | Demonstrations for ecological and environmental issues. |
| 2.2 | Explain the application of ecology to solve the practical problems in environment. | - Group discussions - Presentations - Laboratory techniques | - Self evaluation - Conduct quiz - Group discussion |

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| | | | - Home assignments - Periodical exams |
| 3.0 | Interpersonal Skills & Responsibility | | |
| 3.1 | - Appraise major ideas relating to ecology and environment - Illustrate clear understanding about ecological issues, ecosystems and its components, ecosystem and community dynamics. | - Show students to read more beyond the classroom lecture - Group discussions to keep students updated with the latest developments in the ecology. | - Conduct quiz - Interact with students directly |
| 3.2 | - Justify the need and ways to apply environmental techniques to solve the problems of ecology in general. | - Group discussion - Invite guest lectures - Learning modern lab techniques. - Illustrate students to make correct observations and inferences. | - Involve students in projects |
| 4.0 | Communication, Information Technology, Numerical | | |
| 4.1 | - Demonstrate web based searching on the topics of modern ecology and environment. | - Group discussion and interactive session - Apprise students to enhance communication, IT and numerical skills | - Engage students to express their opinion on a particular topic. - Conduct quiz |
| 5.0 | Psychomotor | | |
| 5.1 | Not Applicable | Not Applicable | Not Applicable |

| 5. Schedule of Assessment Tasks for Students During the Semester | | | |
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| | Assessment task (e.g. essay, test, group project, examination, speech, oral presentation, etc.) | Week Due | Proportion of Total Assessment (%) |
| 1 | Quiz | 3 | 10 |
| 2 | Pre final Exam (Theoretical) | 8 | 25 |
| 3 | Pre final Exam (Lab) | 8 | 10 |
| 4 | Final Exam (Lab) | 13 | 15 |
| 5 | Final Exam (Theoretical) | 16 | 40 |
| 6 | Total | | 100 |
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D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week)
An induction period at the beginning of the academic session
 - An extensive Learning Resources Centre, incorporating a library and computer center.
 - A Program Tutor to give academic advice.
 - Personal tutors to provide pastoral and academic support.

- Office hours 8 hr/ week

E. Learning Resources

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| 1. List Required Textbooks - <i>Ecology, Second Edition</i> by Michael L. Cain, William D. Bowman, and Sally D. Hacker |
| 2. List Essential References Materials (Journals, Reports, etc.) - Journal of environmental biology - Journal of environmental pollution - Journal of ecology - Journal of Environmental and experimental biology |
| 3. List Recommended Textbooks and Reference Material (Journals, Reports, etc) - <i>Ecology, Second Edition</i> by Michael L. Cain, William D. Bowman, and Sally D. Hacker - <i>Understanding Environmental Pollution</i> , by Hill, Marquita K. |
| 4. List Electronic Materials (eg. Web Sites, Social Media, Blackboard, etc.) - Saudi Digital Library - http://instructors.coursesmart.com |
| 5. Other learning material such as computer-based programs/CD, professional standards or regulations and software. |

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access etc.)

1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)
- Ecology and Environment Laboratory is required

2. Computing resources (AV, data show, Smart Board, software, etc.)
- Projectors required in each lecture theatre and laboratory

3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list): Equipment for ecological monitoring required

G Course Evaluation and Improvement Processes

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| 1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching - Course evaluation by student - Students- faculty meetings |
| 2 Other Strategies for Evaluation of Teaching by the Program/Department Instructor - Peer consultation on teaching - Departmental council discussions - Discussions within the group of faculty teaching the course |
| 3 Processes for Improvement of Teaching - Conducting workshops given by experts on the teaching and learning methodologies - Periodical departmental revisions of its methods of teaching - Monitoring of teaching activates by senior faculty members |

4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution)

- Providing samples of all kind of assessment in the departmental course portfolio of each course.
- Assigning group of faculty members teaching the same course to grade same questions for various students.
- Faculty from other institutions invited to review the accuracy of the grading policy.

5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.

- The course material and learning outcomes are periodically reviewed and the changes to be taken are approved in the departmental and higher councils.
- The head of department and faculty take the responsibility of implementing the proposed changes.

Name of Course Instructor: Dr. Abid Ali Ansari

Signature: *Abid Ali Ansari*

Date Specification Completed: **19/1/1441**

Program Coordinator: **Dr. Omar Salem Obeid Bahattab**

Signature: *Omar Bahattab*

Date Received: 20/1/1441