Aquatic Animal Ecology
ZOO 673

Course specifications
(Postgraduate Degree)

Course Title:	**Aquatic Animal Ecology**
Course Code:	**ZOO 673**
Program:	**PhD**
Department:	**Zoology**
College:	**Science**
Institution:	**Zoology**

Table of Contents

A. Course Identification

1. Credit hours: 2 (2+0)
2. Course type ☐ Required ☒ Elective
3. Level/year at which this course is offered: Doctoral Program in Zoology
4. Pre-requisites for this course (if any)**: None**
5. Co-requisites for this course (if any)**: None**

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**		60
2	**Blended**		20
3	**E-learning**		
4	**Correspondence**		15
5	**Other**		5

7. Actual Learning Hours (based on academic semester)

No	Activity	Learning Hours
Contact Hours		
1	**Lecture**	15
2	**Laboratory/Studio**	
3	**Seminars**	10
4	**Others** (specify)	5
	Total	30
Other Learning Hours*		
1	**Study**	
2	**Assignments**	
3	**Library**	
4	**Projects/Research Essays/Theses**	
5	**Others** (specify)	
	Total	

* The length of time that a learner takes to complete learning activities that lead to achievement of course learning outcomes, such as study time, homework assignments, projects, preparing presentations, library times

B. Course Objectives and Learning Outcomes

1. Course Description

Advanced consideration of aquatic ecology of aquatic animal species emphasizing current issues which include: Community structure, population growth, population regulation, dispersion, species interaction diversity, competition, predation, age composition, density and niche theory. Interrelationship between aquatic fauna and their environment. Analysis of ecological measurement of selected populations using some bio statistical parameters.

2. Course Main Objective

Advanced study of aquatic ecology which include: -

- Detailed community structure and population growth of aquatic fauna.
- Population regulation, dispersion and interaction of aquatic species.
- Ecological succession and niche.
- Interrelationship between aquatic fauna and their environment.

3. Course Learning Outcomes

	Course Learning Outcomes (CLOs)	Aligned PLOs*
1	**Knowledge**	
1.1	Understanding basics of aquatic ecology and some important ecological terms	
1.2	Define in detail the characteristics of different ecological terms	
1.3	Determine general basics of aquatic ecology.	
1.4	Recognize interaction of animals with their environment	
2	**Skills**	
2.1	Ability to recognise different aspects of animal ecology	
2.2	Knowledge of population, communities succession and dispersion of species	
2.3		
2...		
3	**Competence**	
3.1	To be able to work in a team to collect specific information about ecological parameters	
3.2	To be able to discuss results of work in groups.	
3.3	Ability to work in a team to collect information about some recent aspect of ecological parameters. Expand communication skills within groups	
3.4	Ability to use computers and internet for research purposes.	

* Program Learning Outcomes

C. Course Content

No	List of Topics	Contact Hours
1	**Introduction to aquatic ecology**	**2**
2	**Community structure and population growth**	**4**
3	**Species interaction and Dispersion**	**4**
4	**Species diversity, competition and predation**	**4**
5	**Ecological succession of different population**	**4**
6	**Density and niche theory**	**4**
7	**Interaction of aquatic fauna and their environments**	**4**
	Analysis of ecological measurement of selected aquatic populations	**4**
Total		**30**

D. Teaching and Assessment

1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	**Knowledge**		
1.1	Understanding basics of aquatic ecology and some important ecological terms	Lectures are given using PowerPoint presentation and illustrations	Midterm and final exams and assigned questions
1.2	Define in detail the characteristics of different ecological terms	Interaction between teacher and students	Midterm and final exams. Evaluation of Reports.
1.3	Determine general basics of aquatic ecology.	Reports and Oral presentations.	Evaluation of assignments
1.4	Recognize interaction of animals with their environment	Live videos presentation	Evaluation of presentation
2.0	**Skills**		
2.1	Ability to recognise different aspects of animal ecology	Comparison using power point illustrations	Midterm and final exams.
2.2	Knowledge of population, communities succession and dispersion of species	Training for measuring the ecological parameters	Evaluation of reports and examinations.
…			
3.0	**Competence**		
3.1	To be able to work in a team to collect specific information about ecological parameters	Use of power point presentation	Assessment of student contribution
3.2	To be able to discuss results of work in groups.	Group discussion	Evaluation of the obtained results
3.3	Ability to work in a team to collect information about some recent aspect of ecological parameters. Expand communication skills within groups	Encouraging students to submit activities and assignments	Evaluating of studies carried out by students
3.4	Ability to use computers and internet for research purposes.	Encourage students to use library resources	Evaluating activities and assignments

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	**Reports - activities homework**	**3-6-8**	**20%**
2	**First Midterm Exam.**	**9**	**20%**
3	**Second Midterm Exam.**	**12**	**20%**
4	**Final Exam.**	**15**	**40%**
5			

***Assessment task** (i.e., written test, oral test, oral presentation, group project, essay, etc.)

E. Student Academic Counseling and Support

Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice:

- **The supervision done by the staff member interaction session Sessions.**
- **Office hours 7 h/ week**

F. Learning Resources and Facilities

1. Learning Resources

Required Textbooks	(Books in Arabic) 1- السعدي حسن علي (2080م). البيئة المائية. دار البازوري، العراق 2- Kreb, C. J. (1994). Ecology, the experimental analysis of distribution and abundance. Fourth Edition, Harper and Collins College Publishers, N.Y., USA. 3- Sumich, J. L. and Morrissey, J. F. (2004). Introduction to marine life. Jones and Bartlett Publishers, Boston, USA. 4- Miller, J. R. and Spoolman, S. E. (2009). Essential of ecology (Fifth Edition) Brooks/cole, Cengage Learning. Yolanda Cossio Publishers, Belmont,CA,USA.
Essential Reference Materials	Journal of freshwater ecology Journal of marine biology
Electronic Materials	**CD accompanied with textbook and essential references**
Other Learning Materials	• **Microsoft office package**

2. Educational and research Facilities and Equipment Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	**Modern lecture rooms equipped with audio – visual facilities.**
Technology Resources (AV, data show, Smart Board, software, etc.)	
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	NA

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Quality and effectiveness of teaching	Students	Students questionnaires feedback
Course content and teaching strategy	Departmental course committee	Peer consultation

Evaluation Areas/Issues (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)
Evaluators (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)
Assessment Methods (Direct, Indirect)

H. Specification Approval Data

Council / Committee	
Reference No.	
Date	