



## Course Specifications (Postgraduate Degree)

<b>Course Title:</b>	<b>Research Project I</b>
<b>Course Code:</b>	<b>BIOD 525</b>
<b>Program:</b>	<b>M. Sc. Biodiversity</b>
<b>Department:</b>	<b>Biology</b>
<b>College:</b>	<b>Science</b>
<b>Institution:</b>	<b>University of Tabuk</b>

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## A. Course Identification

<b>1. Credit hours:</b> 3 Credit Hours (2 Theoretical + 1 Practical)
<b>2. Course type</b> <input checked="" type="checkbox"/> Required <input type="checkbox"/> Elective
<b>3. Level/year at which this course is offered:</b> Level 3/ Second year
<b>4. Pre-requisites for this course (if any):</b> BIOD 509, BIOD 510
<b>5. Co-requisites for this course (if any):</b> None

### 6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	4	100
2	Blended		
3	E-learning		
4	Distance learning		
5	Other		

### 7. Actual Learning Hours (based on academic semester)

No	Activity	Learning Hours
1	Lecture	26
2	Laboratory/Studio	26
3	Seminars	
4	Others	
<b>Total</b>		52

## B. Course Objectives and Learning Outcomes

### 1. Course Description:

- The course introduces the students to the concepts, importance, and basic requirements of scientific research, the value of ethics and plagiarism in scientific research, and the different types of statistical methods used to analyze data in the field of biology. It also provides extensive knowledge on types of research, how to formulate a hypothesis, questions, and objectives of research topics, instruments used in data collection, how to search and review literature for certain research topics, Besides, the course helps students to develop scientific writing, rephrasing and summarizing skills to draft different types of scientific reports and manuscripts (e.g. articles, dissertation, etc..). Further, it prepares students for oral presentation and to conduct future research studies with an emphasis on scientific problems related to Biodiversity.

### 2. Course Main Objective

By the end of this course, the students should be able to:

- Understand research terminology.
- Understand the importance and significance of scientific research.
- Describe different methods and study designs in scientific research.
- Develop writing skills in scientific reports.
- Recognize the statistical methods that are needed for the analysis of research data.
- Aware of the ethical principles of scientific research.
- Distinguish and do citations of references in scientific reports and articles.

\*

### 3. Course Learning Outcomes

Course Learning Outcomes (CLOs)		Aligned PLOs*
<b>1</b>	<b>Knowledge and Understanding:</b>	
1.1	Demonstrate knowledge of methodological theory in research topics with an emphasis on topics related to Biodiversity.	K1
1.2	Demonstrate confidence in formulating research questions in quantitative and qualitative research.	K2
1.3	State the significance of research in problem-solving.	K2
1...		
<b>2</b>	<b>Skills:</b>	
2.1	Recognize the elements of the research and how to use these elements in drafting a research proposal.	S2
2.2	Demonstrate a critical awareness of methods and study designs in qualitative and quantitative research.	S2
2.3	Develop skills in scientific writing.	S2
2.4	Demonstrate a critical awareness of ethical principles in scientific research.	S4
2.5	Use different statistical tests to analyze different data related to biodiversity topics.	S4
<b>3</b>	<b>Values:</b>	
3.1	Illustrate the basic rules for writing a scientific report on any project.	V1
3.2	Illustrate the research ethics and how to create, write, and design your research.	V2
3.3	Demonstrate how to access different information sources such as libraries, websites, databases, and scientific articles.	V1
3...		

\* Program Learning Outcomes

### C. Course Content

No	List of Topics	Contact Hours
1	Definition of scientific research	2
2	Importance and impact of scientific research	2
3	Classification of Research article by objectives	2
4	Classification of Research article by methods	2
5	Objectives of scientific research	2
6	Scientific research methodology	2
7	Practical applied research	2
8	Writing a literature review	2
9	Scientific research ethics	2
10	Plagiarism and paraphrases	2
11	References and citation	2
12	References and citation	2
13	Seminar, and oral presentation and discussion	2
<b>Total</b>		<b>26</b>

NB: The contact hours include only seminar topics.

## D. Teaching and Assessment

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

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
<b>1.0</b>	<b>Knowledge and Understanding:</b>		
1.1	Demonstrate knowledge of methodological theory in research topics with an emphasis on topics related to Biodiversity.	<ul style="list-style-type: none"> <li>- Lectures.</li> <li>- Group discussions.</li> <li>- Brainstorming.</li> <li>- The use of educational techniques (Videos).</li> <li>- Student's seminars.</li> <li>- Individual presentation.</li> <li>- Lab. demonstrations.</li> </ul>	<ul style="list-style-type: none"> <li>- Oral discussions.</li> <li>- Long and short essays.</li> <li>- Oral and written exams</li> <li>- Homework.</li> <li>- Quizzes.</li> <li>- Demonstrations.</li> <li>- Lab. reports.</li> </ul>
1.2	Demonstrate confidence in formulating research questions in quantitative and qualitative research.		
1.3	State the significance of research in problem-solving.		
1...			
<b>2</b>	<b>Skills:</b>		
2.1	Recognize the elements of the research and how to use these elements in drafting a research proposal.	<ul style="list-style-type: none"> <li>- Lectures.</li> <li>- Group discussions.</li> <li>- Brainstorming.</li> <li>- Simulation.</li> <li>- Research paper-based learning.</li> <li>- The use of interactive video.</li> <li>- Lab. demonstrations.</li> <li>- Individual presentation.</li> </ul>	<ul style="list-style-type: none"> <li>- Peer assessment.</li> <li>- Self-evaluation.</li> <li>- Oral discussion.</li> <li>- Oral and written exams.</li> <li>- Quizzes.</li> <li>- Individual and group presentations.</li> <li>- Lab. reports.</li> </ul>
2.2	Demonstrate a critical awareness of methods and study designs in qualitative and quantitative research.		
2.3	Develop skills in scientific writing.		
2.4	Demonstrate a critical awareness of ethical principles in scientific research.		
2.5	Use different statistical tests to analyze different data related to biodiversity topics.		
2...			
<b>3.0</b>	<b>Values:</b>		
3.1	Illustrate the basic rules for writing a scientific report on any project.	<ul style="list-style-type: none"> <li>- Research activities.</li> <li>- Oral presentations.</li> <li>- An internet search, assignments, and essays.</li> <li>- Group discussion.</li> <li>- Case studies.</li> <li>- Individual, and group presentations.</li> </ul>	<ul style="list-style-type: none"> <li>- Student's essays and assignments.</li> <li>- Group reports.</li> <li>- Group presentations.</li> <li>- Discussion in lectures.</li> <li>- Student's written participation.</li> <li>- Analytical reports.</li> <li>- Lab. reports.</li> <li>- Case studies.</li> <li>- Posters.</li> <li>- Dissertation.</li> </ul>
3.2	Illustrate the research ethics and how to create, write, and design your research.		
3.3	Demonstrate how to access different information sources such as libraries, websites, databases, and scientific articles.		
3...			

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods

## 2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Activities and Short Quizzes	Distributed over 8 weeks	10
2	Pre-Final Practical Exam	8	10
3	Pre-Final Theoretical Exam	8	25
4	Final Practical Exam	15	15
5	Final Theory Exam	16	40
6			
7			
8			
9			
	Total		100

\*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:**

- Eight office hours per week per faculty member.
- Academic advising sessions 1hr/ week per faculty member.

## F. Learning Resources and Facilities

### 1. Learning Resources

<b>Required Textbooks</b>	<ul style="list-style-type: none"> <li>- Gurumani, N. (2013). Research Methodology: For Biological Sciences. 01 edition, p. 782, Publisher: MJP Publishers. ISBN: 9788180940163.</li> <li>- Bailey, S. (2003) Academic writing a handbook of international student's 3<sup>rd</sup> edition. ISBN 0-203-83165-9 Master e-book ISBN</li> <li>- Jaan, M. (2000), Textbook Research and Writing, Frankfurt am Main: Peter Lang.</li> </ul>
<b>Essential Reference Materials</b>	<ul style="list-style-type: none"> <li>- <i>International Journal of Science and Scientific Research.</i></li> <li>- <i>Biology Method and Research.</i></li> </ul>
<b>Electronic Materials</b>	<ul style="list-style-type: none"> <li>- Saudi Digital Library.</li> <li>- Biology Research Methods – Oxford.</li> <li>- <a href="http://www.sciencedirect.com">www.sciencedirect.com</a></li> </ul>
<b>Other Learning Materials</b>	<ul style="list-style-type: none"> <li>- Multimedia that is associated with the textbook and the relevant websites.</li> </ul>

## 2. Educational and Research Facilities and Equipment Required

Item	Resources
<b>Accommodation</b> (Classrooms, laboratories, demonstration rooms/labs, etc.)	<ul style="list-style-type: none"> <li>- A sufficient number of classrooms, well equipped practical laboratories are available to accommodate 30-40 students.</li> </ul>
<b>Technology Resources</b> (AV, data show, Smart Board, software, etc.)	<ul style="list-style-type: none"> <li>- Data show projectors and wireless internet connection available for students and faculties.</li> <li>- Data show projectors and wireless internet connection available for students and faculties.</li> <li>- Smart blackboard.</li> <li>- Computer Portable PowerPoint presentations.</li> </ul>
<b>Other Resources</b> (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	<ul style="list-style-type: none"> <li>- Lecture slides.</li> <li>- Reference Book.</li> <li>- A Note Book for writing notes.</li> <li>- Well-equipped biology laboratory.</li> </ul>

## G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
- Effectiveness of teaching and assessment.	- Students.	<ul style="list-style-type: none"> <li>• Indirect</li> <li>- Questionnaires.</li> </ul>
- Quality of learning resources.	<ul style="list-style-type: none"> <li>- Program committee.</li> <li>- Staff members.</li> <li>- Students.</li> </ul>	<ul style="list-style-type: none"> <li>• Direct</li> <li>- Questionnaires.</li> <li>- Reports.</li> <li>- Meetings.</li> </ul>
- The extent of achieving the course learning outcomes.	<ul style="list-style-type: none"> <li>- Program leaders.</li> <li>- Peer Reviewer.</li> </ul>	<ul style="list-style-type: none"> <li>• Direct &amp; Indirect</li> <li>- Questionnaires.</li> <li>- Reports.</li> <li>- Meetings.</li> </ul>

**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

<b>Council / Committee</b>	Biology Department Members who constructed the program
<b>Reference No.</b>	Committee members – The academic year 1441/1442
<b>Date</b>	