



Course Specification

(Bachelor)

Course Title: *Project*

Course Code: *BIO1498*

Program: *Bachelor of Science in Biology*

Department: *Department of Biology*

College: *Faculty of Science*

Institution: *University of Tabuk*

Version: *Course Specification Version Number*

Last Revision Date: *September 2023*

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A. General information about the course:

1. Course Identification

1. Credit hours:

3 Credit hours.

2. Course type

- A. ☐ University ☐ College ☒ Department ☐ Track ☐ Others
- B. ☒ Required ☐ Elective

3. Level/year at which this course is offered: (7th Level / 4th year)

4. Course general Description:

The Project is an advanced-level scientific writing course that requires extensive reading and writing. The aim of this course is introducing students to the scientific research, methods, data survey and collection using traditional or digital methods. In addition to that the course will focus on ethics of scientific research. Through project course students will learn how to design scientific research and investigate a problem trying to find a solution to the problem. Also, how to clearly defined the importance of the research and its objectives, formulating hypothesis or suggesting solutions, collecting, organizing, evaluating and analyzing the result and eventually delivering conclusions. Furthermore, the course will provide the students with clear instructions to write a comprehensive scientific report presenting the results or analyzing the data of their project, and criticizing and explaining the findings, with listing references correctly. By the end of this course, each student should submit a scientific report for a selected topic under the supervision of one member of Biology Department.

5. Pre-requirements for this course (if any):

Molecular Biology (BIO1309).

6. Co-requirements for this course (if any):

None

7. Course Main Objective(s):

By the end of this course the students are expected to be able to:

- Choose an appropriate biological topic with a clear importance to be investigated.
- Plan and schedule the research steps and organize research ideas.
- Conduct research and generate results.
- Draft the scientific report.
- Revise and edit the scientific report and deliver the final version.
- Presents the work for examiners and audience.





2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	3	100%
2	E-learning		
3	Hybrid - Traditional classroom - E-learning		
4	Distance learning		

3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	Lectures	5
2.	Laboratory/Studio	15
3.	Field	
4.	Tutorial	10
5.	Others (specify)	
Total		60

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	Knowledge and understanding			
1.1	Recall the theoretical concept of research, including its literature review, importance objectives, hypothesis, methodologies, discussion, conclusion and referencing.	K1	-Lectures. -Case studies. -Web-Based learning. -Self learning.	-Class discussion and participation. - Homework Assignment. - Demonstration through charts and posters.





Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.2	Recall research tools, including online libraries, reference, various resources to collect data and the ethical issues of Scientific Research.	K2	-Lectures. -Case studies. -Web-Based learning. -Self learning.	-Class discussion and participation. - Homework Assignment. - Demonstration through charts and posters.
2.0	Skills			
2.1	Develop skills of scientific research techniques.	S2	-Lab work. -Brainstorming.	-Lab reports -long and short essays. -Class. -Peer evaluation. - Demonstration through charts and posters.
2.2	Collecting data from various resources, writing, presenting, and publishing scientific research.	S3	-Lab work. -Brainstorming.	-Lab reports -long and short essays. -Class. -Peer evaluation. - Demonstration through charts and posters.
2.3	Analyze the role of creativity, innovation, discovery, and expression across the various disciplines.	S4	-Lab work. -Brainstorming.	-Lab reports -long and short essays. -Class. -Peer evaluation. - Demonstration





Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
				through charts and posters.
2.4	Solve a biological problem leading to appropriate conclusion	S5	-Lab work. -Brainstorming. - Extra Curriculum	-Lab reports -long and short essays. -Class. -Peer evaluation. - Demonstration through charts and posters.
2.5	Communicate effectively with both specialized and non-specialized audiences using oral, written and visual modes.	S6	- Lab demonstration. - Individual and small group tasks. - Extra Curriculum	- Individual presentation and working as a part of group. - Short essay.
3.0	Values, autonomy, and responsibility			
3.1	Work independently with a willingness to communicate well with his partners.	V1	-Lab work -case study -Field trip - Extra Curriculum	-Scientific reports. -Oral examination. - Demonstration through charts and posters.
3.2	Resolve biological issues applying personal skills, scientific methodologies	V2	-Lab work -case study -Field trip - Extra Curriculum	-Scientific reports. -Oral examination. - Demonstration





Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
	within ethical regulations.			through charts and posters.

C. Course Content

No	List of Theriacal Topics	Contact Hours
1.	Introduction to the course.	3
2.	Scientific research ethics.	3
3.	Optimal use of scientific databases to generate data and related information to the project, e.g., Google Scholar, PubMed, ScienceDirect, Springer, YouTube.....etc.	3
4.	References: Scientific style and format of citation	3
5.	Plagiarism: Types of plagiarism, consequences, how to avoid plagiarism	3
6.	Scientific research procedure (Part 1): Identifying the biological problem, the research importance and impact.	3
7.	Scientific research procedure (Part 2): Assessing the references and generating a literature review.	3
8.	Scientific research procedure (Part 3): Creating hypothesis, study design.	3
9.	Scientific research procedure (Part 4): Conducting experiments, collecting data, analyzing the data.	3
10.	Scientific research procedure (Part 5): Explaining the findings, writhing the report.	3
11.	Report writing.	3
12.	Report writing and feed back to the first draft.	3
13.	Report writing and feed back to the second draft.	3
14.	Final Report submission.	3
15.	Final assessment (Presentation or Poster or Viva).	3
Total		30

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Introduction to Project	1 to 2	10
2.	Evaluate the Biological Problem and Create a hypothesis	3 to 4	10
3.	Study Design	4 to 5	10





No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
4.	Conducting Experiments: Data Collection, Data Analysis and interpretation.	6 to 9	20
5.	Report Writing and Submission	10 to 14	30
6.	Final assessment (Oral Presentation)	15	20

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.).

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	- Lindsay, D. (2020). Scientific writing= thinking in words. Csiro Publishing. - Robert A. Day, Barbara Gastel (2011). How to Write and Publish a Scientific Paper 7th Edition. Publisher: Greenwood. ISBN-10:0313391971-ISBN-13: 978-0313391972
Supportive References	- Almila, E. R. O. L. (2017). How to conduct scientific research?. Archives of Neuropsychiatry, 54(2), 97. - Jahan, N., Naveed, S., Zeshan, M., & Tahir, M. A. (2016). How to conduct a systematic review: a narrative literature review. Cureus, 8(11). - Helton-Fauth, W., Gaddis, B., Scott, G., Mumford, M., Devenport, L., Connelly, S., & Brown, R. (2003). A new approach to assessing ethical conduct in scientific work. Accountability in Research: Policies and Quality Assurance, 10(4), 205-228. - Jain, A. K. (2010). Ethical issues in scientific publication. Indian journal of orthopaedics, 44(3), 235. - Liumbruno, G. M., Velati, C., Pasqualetti, P., & Franchini, M. (2013). How to write a scientific manuscript for publication. Blood Transfusion, 11(2), 217.
Electronic Materials	Websites on the internet that are relevant to the topics of the course: - https://scholar.google.com/ - https://pubmed.ncbi.nlm.nih.gov/ - https://www.sciencedirect.com/
Other Learning Materials	- Multi-media associated with the textbook and the relevant websites. - Microsoft office package.



2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Well-equipped classrooms and laboratories that accommodate a sufficient number of students.
Technology equipment (projector, smart board, software)	Multimedia projectors and smart boards.
Other equipment (depending on the nature of the specialty)	- Well-equipped biology laboratory.

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	- Students. - Faculty members.	Indirect & direct: - Questionnaires. - Meetings.
Effectiveness of Students assessment	- Quality and development committee. - Department chair.	Indirect & direct: - Course report. - Program annual report.
Quality of learning resources	- Plan and program committee. - Students. - Staff members.	Indirect & direct: - Questionnaires. - Meetings. - Reports.
The extent to which CLOs have been achieved	- Quality and development committee. - Peer Reviewer. - Program leaders.	Indirect & direct: - Questionnaires. - Meetings. - Reports.
Other		

Assessors (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify))

Assessment Methods (Direct, Indirect)

G. Specification Approval:

Council / Committee	PROGRAMS AND STUDY PLANS COMMITTEE AND BIOLOGY DEPARTMENT	
	التوقيع	الاسم
		د. دخنه بنت سعيد الشهري
		د. عائشة بنت عيد البلوي
		د. عيبر بنت موسى الخيري
		د. هناء بنت عتيق غبان
		د. ضحاء بنت عبدالله البلوي
		د. بدور بنت فالح البلوي
		د. أسماء بنت مسعد العزري
Reference No.		د. امينه بنت سعود العتيبي
		د. حنان بنت عيد العطوي
Date	COUNCIL NO. (12) – SUBJECT NO. (5)	
	25 / 07 / 1445 H.	

Head of The Biology Department

Dr. Faud Alatawi

