



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

ATTACHMENT 5.

T6. COURSE SPECIFICATIONS (CS)

Course Specifications

Institution: University of Tabuk	Date:
College/Department : Ummalaj Universty College /Biology	

A. Course Identification and General Information

1. Course title and code: General Genetics (BIO 221)			
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) Biology, compulsory			
4. Name of faculty member responsible for the course			
5. Level/year at which this course is offered: Level 4/ Semester One			
6. Pre-requisites for this course (if any): General Biology (Bio 201)			
7. Co-requisites for this course (if any): not found			
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: Students were asked to write essay on related topics. Also class discussions were conducted. Homework and tutorials were provided regularly.			

B Objectives

1. What is the main purpose for this course?

Help students to become familiar with the language of genetics and the terminology of genetics. Provide students with a strong background in the principles of Mendelian genetics. Students will become familiar with Mendel's basic postulates and the additional insights that modern genetics has brought to this field.

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)

Provide more related references, add sub-topics for new branches related to modern genetics. Adding more experiments to the practical section.

C. Course Description (Note: General description in the form to be used for the Bulletin or handbook should be attached)

1. Topics to be Covered		
List of Topics	No. of Weeks	Contact Hours
Introduction to genetics Mendel's First Law (law of Segregation) Mendel's second law (law of Independent Assortment)	2	4
Allelic relation: Dominant and Recessive, Co-dominance, Lethal alleles, Multiple alleles, incomplete dominance, Penetration percentage. Non-Mendelian Genetics.	2	4
Genetics of Sex Sex determination, sex- linked characters, Sex influenced, sex limited characters.	2	4
Linked Genes and Chromosome mapping, crossing over	2	4
Cell cycle and mitotic division Significance of meiosis	1	2
Nucleic acids: structure and function DNA packaging in the chromosome. Transcription & Translation of messenger RNA (mRNA).Protein synthesis	2	4
Nucleic acid replication and synthesis in prokaryotes & eukaryotes.	2	4

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

	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	26		26	26		52
Credit	2			1		3

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

None

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

Course Learning Outcomes, Assessment Methods, and Teaching Strategy work together and are aligned. They are joined together as one, coherent, unity that collectively articulate a consistent agreement between student learning, assessment, and teaching.

The *National Qualification Framework* provides five learning domains. Course learning outcomes are required. Normally a course has should not exceed eight learning outcomes which align with one or more of the five learning domains. Some courses have one or more program learning outcomes integrated into the course learning outcomes to demonstrate program learning outcome alignment. The program learning outcome matrix map identifies which program learning outcomes are incorporated into specific courses.

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. **Fourth**, if any program learning outcomes are included in the course learning outcomes, place the @ symbol next to it.

Every course is not required to include learning outcomes from each domain.

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1	Mendel's basic postulates and laws	Traditional lectures	Quiz using definitions,
1.2	Modern genetics and additional insights	Tutorials and essays	State and list.
2.0	Cognitive Skills		
2.1	To be aware of the power of the DNA technology And DNA manipulation.	Traditional lectures	Quiz using: explain, compare, label and problem solving
2.2	Prepare students for more advanced cell courses	Discussions and tutorials	Draw, label, give examples
3.0	Interpersonal Skills & Responsibility		
3.1	To help students to develop scientific observation	Lectures, discussions	Quiz using: illustrate, show
3.2	To link these observations with principles given	Assignments and class work	Match, explain
4.0	Communication, Information Technology, Numerical		
4.1	Prepare students for the principles of modern technology	Practices, tutorials and essay writing	Assignments, tutorials, problem solving
4.2			
5.0	Psychomotor		
5.1	Encourage students to develop their capabilities in the applied session of the course principles	Blended lectures, practices and class discussion	Quiz to solve problems, draw and construct
5.2	Introduce the students to different information sources	Lectures and class discussions	Assignments and short essays

Suggested Guidelines for Learning Outcome Verb, Assessment, and Teaching

NQF Learning Domains	Suggested Verbs
Knowledge	list, name, record, define, label, outline, state, describe, recall, memorize, reproduce, recognize, record, tell, write
Cognitive Skills	estimate, explain, summarize, write, compare, contrast, diagram, subdivide, differentiate, criticize, calculate, analyze, compose, develop, create, prepare, reconstruct, reorganize, summarize, explain, predict, justify, rate, evaluate, plan, design, measure, judge, justify, interpret, appraise
Interpersonal Skills & Responsibility	demonstrate, judge, choose, illustrate, modify, show, use, appraise, evaluate, justify, analyze, question, and write
Communication, Information Technology, Numerical	demonstrate, calculate, illustrate, interpret, research, question, operate, appraise, evaluate, assess, and criticize
	demonstrate, show, illustrate, perform, dramatize, employ, manipulate,

Psychomotor	operate, prepare, produce, draw, diagram, examine, construct, assemble,
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Suggested **verbs not to use** when writing measurable and assessable learning outcomes are as follows:

Consider	Maximize	Continue	Review	Ensure	Enlarge	Understand
Maintain	Reflect	Examine	Strengthen	Explore	Encourage	Deepen

Some of these verbs can be used if tied to specific actions or quantification.

Suggested assessment methods and teaching strategies are:

According to research and best practices, multiple and continuous assessment methods are required to verify student learning. Current trends incorporate a wide range of rubric assessment tools; including web-based student performance systems that apply rubrics, benchmarks, KPIs, and analysis. Rubrics are especially helpful for qualitative evaluation. Differentiated assessment strategies include: exams, portfolios, long and short essays, log books, analytical reports, individual and group presentations, posters, journals, case studies, lab manuals, video analysis, group reports, lab reports, debates, speeches, learning logs, peer evaluations, self-evaluations, videos, graphs, dramatic performances, tables, demonstrations, graphic organizers, discussion forums, interviews, learning contracts, antidotal notes, artwork, KWL charts, and concept mapping.

Differentiated teaching strategies should be selected to align with the curriculum taught, the needs of students, and the intended learning outcomes. Teaching methods include: lecture, debate, small group work, whole group and small group discussion, research activities, lab demonstrations, projects, debates, role playing, case studies, guest speakers, memorization, humor, individual presentation, brainstorming, and a wide variety of hands-on student learning activities.

5. Schedule of Assessment Tasks for Students During the Semester

	Assessment task (e.g. essay, test, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	Quiz	5th	10%
2	Midterm	8th	25%
3	Practical midterm	7th	10%
4	Final practical Test	Final	15%
5	Final Test	Final	40%
6	Total		100%

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)

6 office hours divided into 3 days each of 2 hours

E. Learning Resources

1. List Required Textbooks

1. Gardinar.(1985).Introduction to Genetics.

2 Lewin, B. (1983). Genes. John Wiley and Sons Inc. New York

2. List Essential References Materials (Journals, Reports, etc.)

Genetica, Chromosoma

3. List Recommended Textbooks and Reference Material (Journals, Reports, etc)

Journal of molecular and applied Genetics

4. List Electronic Materials (eg. Web Sites, Social Media, Blackboard, etc.)

Computers with net connection, Scientific websites.

5. Other learning material such as computer-based programs/CD, professional standards or regulations and software.

Programs and CDs if available

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.)

Large class room with permanent seats is recommended.

Multimedia.

Computers with access to internet.

2. Computing resources (AV, data show, Smart Board, software, etc.)

Related software and smart boards are recommended

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

Microscopes with drawing tube.

Lens micrometer

Permanent slides for cell division

Stains: safranin, light green, giemsa, Aceto-carmin and basic fuchsin

Teaching models.

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching

Course evaluation form submitted to the students in the last teaching week

2 Other Strategies for Evaluation of Teaching by the Program/Department Instructor

Revision questions for 10 minutes at the end of each lecture.

Outline the important points of the previous lesson in the first 5 minutes by shooting questions

3 Processes for Improvement of Teaching

Updating the notes given to the students

More quizzes and class work

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)

Occurs by consulting other staff members related to the specialization in non-formal way

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

Revise the syllabus, updating notes. Basic of statistics is required for solving and understanding some genetic concepts.

Faculty or Teaching Staff:

Signature:

Date Report Completed: 17/4/2019

Program Co-ordinator:

Signature: _____ **Date:** _____