



SULTAN QABOOS UNIVERSITY

COURSE OUTLINE

PROGRAM:

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| 1. Course Code | BIOL2101 | |
| 2. Course Title | General Biology I | |
| 3. Credits | 4CH, 16 CP, 8 ECTS | |
| 4. Pre-requisite Course(s) | FPEL0560 or FPEL0600 or FPEL0601 or FPEL0602 or FPEL0603 or FPEL0604 | |
| 5. Co-requisite Course(s) | FPEL0560 or FPEL0600 or FPEL0601 or FPEL0602 or FPEL0603 or FPEL0604 | |
| 6. Equivalent Course(s) | None | |
| 7. Incompatible Course(s) | None | |
| 8. Course Category | <input type="checkbox"/> University Requirement | <input type="checkbox"/> University Elective |
| | <input type="checkbox"/> College Requirement | <input checked="" type="checkbox"/> College Elective |
| | <input type="checkbox"/> Department Requirement | <input type="checkbox"/> Department Elective |
| | <input type="checkbox"/> Specialization Requirement | <input type="checkbox"/> Specialization Elective |
| | <input type="checkbox"/> Other (specify): | |
| 9. Course Owner | College: Science | Department: Biology |
| 10. Course Type | <input type="checkbox"/> Lecture | <input checked="" type="checkbox"/> Lecture/Lab |
| | <input type="checkbox"/> Lecture/Seminar | <input type="checkbox"/> Lecture/Studio |
| | <input type="checkbox"/> Lecture/Tutorial | <input type="checkbox"/> Lecture/Lab/Tutorial or Seminar |
| | <input type="checkbox"/> Tutorial | <input type="checkbox"/> Laboratory (Practical) |
| | <input type="checkbox"/> Field or Work Placement | <input type="checkbox"/> Studio |
| | <input type="checkbox"/> Seminar | <input type="checkbox"/> Internship |
| | <input type="checkbox"/> Workshop | <input type="checkbox"/> Project |
| 11. Language of Instruction | English | |
| 12. Course Description | | |
| This is the first of a two semester course in foundation biology. A basic introductory course in biology covering the view of science, chemical basis of life, cell biology, cell cycle and reproduction, cellular energetics, diversity of life including prokaryotes, protista and fungi and the biotechnological and environmental applications of microorganisms. This course also describes the present status and future opportunities in different fields of biotechnology in Oman. Laboratory work is designed to expose students to the practical aspects of these subjects. The details of the experiments are provided in the lab manual. | | |
| 13. Teaching/Learning Strategies | | |
| Students will be provided with lecture guides and lab manuals. All the sections will be taught with the same materials and powerpoint slides to maintain the uniformity. All the lectures are uploaded in the moodle to give regular accession for the students. The examination and grading is common to all sections. Students learn the subject using rtext book and moodle. | | |
| 14. Assessment Components and Weight [%] | | |
| <input checked="" type="checkbox"/> Quizzes 5 | <input checked="" type="checkbox"/> Practical 20 | <input type="checkbox"/> Other (specify): |
| <input type="checkbox"/> Homework assignments | <input type="checkbox"/> Project | |
| <input checked="" type="checkbox"/> In-term examination(s) 35 | <input checked="" type="checkbox"/> Final examination 40 | |
| 15. Grading Method | | |
| <input checked="" type="checkbox"/> A-F Scale <input type="checkbox"/> Pass/Not passed | | |
| 16. Textbook(s) and Supplemental Material | | |
| Biology. Neil A. Campbell and Jane B. Reece. (7th edition). 2005. Benjamin Cummings | | |

| 17. Matching Course Objectives with Program Outcomes and SQU Graduate Attributes | | |
|---|--|--|
| SQU Graduate Attributes | | |
| A. SQU graduates should be able to: <ol style="list-style-type: none"> 1. apply the knowledge and skills relevant to the specialization 2. communicate effectively and use information and communication technologies 3. critically analyze complex information and present it in simple clear manner | B. SQU graduates possess <ol style="list-style-type: none"> 1. interpersonal communication skills and alignment with culture of international labour market to assist them in practical life and in living successfully 2. skills and motivation for independent learning and engagement in lifelong learning and research 3. work ethics and positive values, and intellectual independence and autonomy 4. teamwork skills and display potential leadership qualities | C. SQU graduates should <p>relish good citizenship qualities, be conscious of their national identity and be socially responsible, engage in community affairs and be mindful of contemporary issues.</p> |

| # | Intended Student Learning Outcome /Course Learning Objective | Relevant Program Outcome(s) | Applicable Attribute(s) |
|-----|--|---|-------------------------|
| 1. | Students will handle the microscope properly and measure the cell size | Gives an overview of biological concepts and to understand the importance of biology in our lives | |
| 2. | Can identify the macromolecules present in the food materials | The applications of biology in the present and future | |
| 3. | Can demonstrate the activity of enzyme | Students will use principles learned in the laboratory and apply them to everyday life | |
| 4. | Able to identify different stages of cell divisions | | |
| 5. | How membranes are doing transport and how plasmolysis occurs | | |
| 6. | Students understand the possible applications of biotechnology in Oman | | |
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| 16. Student Responsibilities |
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| <p>It is the student's responsibility to know and comply with all University Academic Regulations relevant to participation in this course. These regulations specifically include attendance requirement and students' academic code of conduct.</p> <p>For attendance, it is the student's responsibility to be punctual and to attend all classes.</p> <p>Students are expected to perform their work with honesty and avoid any academic misconduct, which is defined as the use of any dishonest or deceitful means to gain some academic advantage or benefit. This can take many forms, including but not limited to, the following: copying, plagiarism, collusion and forging documents. For full details, please refer to the Undergraduate Academic Regulations and to the Student Academic Misconduct Policy.</p> <p>Additionally, this course requires that you:</p> |

| COURSE INFORMATION | | | |
|----------------------|-------------------------|--------------|--------------------|
| Course Code | BIOL2101 | Course Title | General Biology I |
| Semester/ Year | Spring/2017 | Section | 10-80 |
| Day, Time, and Place | | | |
| Course Coordinator | Dr. Sivakumar Nallusamy | | |
| Office Location | 2036 | Office Hours | 1-2 pm |
| Office Tel. Ext. | 6891 | Email | apnsiva@squ.edu.om |

| Tentative Schedule | | | |
|--------------------|--------------------------------|--|------------|
| Week | Lecture/ Topic | Material to be covered | Assessment |
| 1 | Unifying themes in Biology | 1 Features common to all organisms 1.2 Unity, Diversity and Classification of Organisms 1.3 Domains Archaea and bacteria 1.4 Domain Eukarya 1.5 Biodiversity | |
| 2 | Chemical Basis of life | 2.1 Chemical and Physical Properties of Water 2.2 Structure and function of macromolecules 2.3 Carbohydrates | |
| 3 | Chemical Basis of life | 2.4 Lipids 2.5 Protein structure and function | |
| 4 | Chemical Basis of life | 2.6 Nucleic acids 2.7 From gene to protein | |
| 5 | Chemical Basis of life | 2.8 Synthesis and processing of mRNA 2.9 Synthesis of proteins | |
| 6 | Cells, the basic units of life | 3.1 How to study cells 3.2 Prokaryotic and eukaryotic cells 3.3 Cell organelles I | |
| 7 | Cells, the basic units of life | 3.4 Cell organelles II | |
| 8 | Cells, the basic units of life | 3.5 Cytoskeleton 3.6 Cell surfaces and junctions | |
| 9 | Cells, the basic units of life | 3.7 Cell membranes and transport 3.8 Traffic across membranes | |
| 10 | Cell cycle and reproduction | 4.1 Cell cycle and mitosis 4.2 Regulation of cell cycle | |
| 11 | Cell cycle and reproduction | 4.3 Meiosis and sexual life cycle 4.4 Meiosis | |

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| 12 | The working cell and cellular energetics | 5.1 Energy within the cell 5.2 Enzymes 5.3 Cellular respiration I | |
| 13 | The working cell and cellular energetics | 5.4 Cellular Respiration II 5.5 Photosynthesis | |
| 14 | Biotechnology, Biodiversity and Environmental pollution | 6.1 Biotechnology and recombinant DNA technology 6.2 Practical applications of DNA technology | |
| 15 | Biotechnology, Biodiversity and Environmental pollution | 6.3 DNA technology offers forensic, environmental and agricultural applications | |

APPENDIX A: INSTRUCTORS OF MULTIPLE SECTIONS

| Section | Instructor | Day, Time, and Place | Office Location and Extension | Email | Office Hours |
|---------|---------------------|--|-------------------------------|----------------------|--------------|
| 10 | Geetha Ragendran | SUN 08:00-09:20 CMT/E12 TUE 08:00-09:20 CMT/E12 MON 14:15-17:05 SCI/1029N | 1028/6827 | geethasj@squ.edu.om | |
| 20 | Badr Al Qamshoui | MON 08:00-09:20 CMT/D10 WED 08:00-09:20 CMT/D10 TUE 10:00-12:50 SCI/1029N | 2011/6876 | bader.ali@squ.edu.om | |
| 30 | Farah Al Barwani | TUE 10:00-11:20 CMT/D14 THU 08:00-09:20 CMT/D14 SUN 14:15-17:05 SCI/1029N | 1027/6826 | farahalb@squ.edu.om | |
| 40 | Elsadiq Eltayeb | SUN 10:00-11:20 CMT/D14 THU 10:00-11:20 CMT/D14 WED 14:15-17:05 SCI/1029N | 2014/6872 | eatayeb@squ.edu.om | |
| 50 | Butheina Al Shueili | MON 10:00-11:20 CMT/D14 WED 10:00-11:20 CMT/D14 TUE 14:15-17:05 SCI/1029N | 2024/6883 | Buthainas@squ.edu.om | |
| 60 | Sanaa Al Sinani | SUN 14:15-15:35 CMT/E14 TUE 14:15-15:35 CMT/E14 MON 10:00-12:50 SCI/1029N | 1027/6826 | sanas@squ.edu.om | |
| 70 | Badr Al Qamshoui | MON 14:15-15:35 CMT/D14 | 2011/6876 | bader.ali@squ.edu.om | |

