# Tikrit university

# جامعة تكريت

*First Cycle – Bachelor's degree (B.Sc.) – Biology*

بكالوريوس علوم - علم الأحياء

فرع الاحياء العام

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## 1. Mission & Vision Statement

***Vision Statement***

The biology academic staff of the science college at Tikrit University believe that students come to understand the discipline of biology through a combination of course work, laboratory experiences, research, and fieldwork. The combination of instructional methods leads students to a balanced understanding of the scientific methods used by biologists to make observations, develop insights and create theories about the living organisms that populate our planet. Small class sizes within the biology program foster a close working relationship between academic staff and students in an informal and nurturing atmosphere.

***Mission Statement***

The biology academic staff pursues a multifaceted charge at Tikrit University. The Program seeks to provide all biology students with fundamental knowledge of biology, as well as a deeper understanding of a selected focus area within the biological sciences. The curriculum and advising have been designed to prepare graduates for their professional future, whether they choose to work as field biologists specializing in botany or wildlife, or to pursue advanced degrees in the life sciences or health sciences. The biology program also provides the necessary fundamental knowledge of the life sciences to support the Nursing degree, the Environmental Studies degree, and the Associate of Science degree in Forest Technology. In addition, biology courses provide a key laboratory science experience for those students seeking to complete the general education requirements

# 2. Program Specification

| | | | |
|---|---|---|---|
| **Programme code:** | BSc-BIO | **ECTS** | 240 |
| **Duration:** | 4 levels, 8 Semesters | **Method of Attendance:** | Full Time |

Biology is a wonderfully wide-ranging subject and is well equipped to deliver. The emphasis of the programme is the whole organism to which everything is related, be it the molecules that form proteins or communities of organisms in an ecosystem. The degree is popular - –or some it's' the breadth of the subject that appeals, for others it's a path to specialization. All students have the opportunity to transfer onto our specialist degrees in Genetics, Zoology, and Ecology at the end of the first year.

Level 1 exposes students to the fundamentals of Biology, suitable for progression to all programmes within the biology programme group. Programme-specific core topics are covered at Level 2 preparing for research-led subject specialist modules at Levels 3 and 4. The University Biology graduate is therefore trained to appreciate how research informs teaching, according to the University and School Mission statements.

At Levels 2, 3 and 4 students are free to choose more than half of their module credits with the proviso a range of modules are selected that reflect the complexity of life forms from molecules, through organisms, both plants and animals, to populations to ensure the breadth of knowledge expected of a graduate with a biology degree. This allows students to develop their own wide-ranging interests in organismal biology. Decisions on what to study are made with input from personal tutors.

The research ethos is developed and fostered from the start via practicals, which are either embedded in lecture modules or taught in dedicated practical modules, research seminars and tutorials. There is a compulsory field course in Level 1, which students must pass in order to progress into Level 2, and optional field courses in Levels 2, 3 and 4. At Level 4 all students carry out an independent research project, which may be a xx credit library or data analysis project, or a xx credit field or laboratory based project.

Academic tutorials are held at Levels 1 and 2 with the same tutor, who is also the personal tutor, providing continuity and progressive guidance. Level 1 and 2 tutorials include a number of workshops to teach skills, e.g. library use and presentation skills, followed by assessed exercises, e.g. essays and talks, as opportunities to practice these skills in a subject-specific context.

International years and Industrial placements are also offered and individual needs are discussed with the appropriate tutor and accommodated wherever possible.

# 3. Program Objectives

1. To provide a comprehensive education in biology that stresses scientific reasoning and problem solving across the spectrum of disciplines within biology
2. To prepare students for a wide variety of post-baccalaureate paths, including graduate school, professional training programs, or entry level jobs in any area of biology
3. To provide extensive hands-on training in electronic technology, statistical analysis, laboratory skills, and field techniques
4. To provide thorough training in written and oral communication of scientific information
5. To enrich students with opportunities for alternative education in the area of biology through undergraduate research, internships, and study-abroad

# 4. Student Learning Outcomes

Biology is the study of the organization and operation of life at the molecular, cellular, organism, and population levels. Graduates obtain information on the historical, technical and social aspects of biology and utilize basic knowledge toward realizing broader concepts. The Department offers a Bachelor of Science in Biology with a concentration in General Biology; Pre-medicine / Pre-dentistry; Biotechnology / Molecular Biology and a minor in Secondary Education that leads to a Public Instruction License. Additionally, the Department offers courses to a large number of students from other departments and supports pre-professional programs. The biology curriculum and experiences are designed to prepare students, in part, for entry into professional health programs, graduate studies, technical careers and education

**Outcome 1**

*Identification of Complex Relationships*

Graduates will be able to illustrate the structure and function of cellular components and explain how they interact in a living cell.

**Outcome 2**

*Oral and Written Communication*

Graduates will be able to formally communicate the results of biological investigations using both oral and written communication skills.

**Outcome 3**

*Laboratory and Field Studies*

Graduates will be able to perform laboratory experiments and field studies, by using scientific equipment and computer technology while observing appropriate safety protocols.

**Outcome 4**

*Scientific Knowledge*

Graduates will be able to demonstrate a balanced concept of how scientific knowledge develops, including the historical development of foundational theories and laws and the nature of science.

**Outcome 5**

*Data Analyses*

Graduates will be able to demonstrate scientific quantitative skills, such as the ability to conduct simple data analyses.

**Outcome 6**

*Critical Thinking*

Graduates will be able to use critical-thinking and problem-solving skills to develop a research project and/or paper.

# 5. Academic Staff


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# 6. Credits, Grading and GPA

***Credits***

Tikrit University is following the Bologna Process with the European Credit Transfer System (ECTS) credit system. The total degree program number of ECTS is 240, 30 ECTS per semester. 1 ECTS is equivalent to 25 hrs student workload, including structured and unstructured workload.

***Grading***

Before the evaluation, the results are divided into two subgroups: pass and fail. Therefore, the results are independent of the students who failed a course. The grading system is defined as follows:

| **GRADING SCHEME**<br>مخطط الدرجات |
|---|

| Group | Grade | التقدير | Marks (%) | Definition |
|---|---|---|---|---|
| Success Group (50 - 100) | A - Excellent | امتياز | 90 - 100 | Outstanding Performance |
| | B - Very Good | جيد جدا | 80 - 89 | Above average with some errors |
| | C - Good | جيد | 70 - 79 | Sound work with notable errors |
| | D - Satisfactory | متوسط | 60 - 69 | Fair but with major shortcomings |
| | E - Sufficient | مقبول | 50 - 59 | Work meets minimum criteria |
| Fail Group (0 – 49) | FX – Fail | راسب - قيد المعالجة | (45-49) | More work required but credit awarded |
| | F – Fail | راسب | (0-44) | Considerable amount of work required |
| | | | | |
| Note: | | | | |
| Number Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above. | | | | |

***Calculation of the Cumulative Grade Point Average (CGPA)***

1. The CGPA is calculated by the summation of each module score multiplied by its ECTS, all are divided by the program total ECTS.

   CGPA of a 4-year B.Sc. degree:

   CGPA = [ (1st $^{m}$odule score x ECTS) + (2nd $^{m}$odule score x ECTS) + ……] / 240

# 7. Curriculum/Modules

**Semester 1 | 30 ECTS | 1 ECTS = 25 hrs**

| Module Code | Module Name in English | SSWL hr/sem | USSWL hr/sem | ECTS | Module Type | Prerequisite Module(s) Code |
|---|---|---|---|---|---|---|
| Bio-1101 | General Zoology | 79 | 96 | 7.00 | C | |
| Bio-1102 | Analytical Chemistry | 79 | 96 | 7.00 | C | |
| Bio-1103 | General Mathematics | 63 | 62 | 4.00 | B | |
| Bio-1104 | Biophysics | 48 | 51 | 4.00 | B | |
| UNI-1105 | Human Rights and Democracy | 40 | 36 | 4.00 | S | |
| UNI-1106 | Arabic Language | 44 | 56 | 4.00 | S | |

**Semester 2 | 30 ECTS | 1 ECTS = 25 hrs**

| Module Code | Module Name in English | SSWL | USSWL | ECTS | Module Type | Prerequisite Module(s) |
|---|---|---|---|---|---|---|

| | | hr/sem | hr/sem | | | Code |
|---|---|---|---|---|---|---|
| Bio-1217 | General Botany | 79 | 96 | 7.00 | C | Bio1101 |
| Bio-1218 | Organic Chemistry | 79 | 96 | 7.00 | C | Bio-1102 |
| Bio-1209 | Biostatistics | 63 | 62 | 5.00 | B | |
| Bio-12010 | Safety and bioscurity | 48 | 27 | 3.00 | S | |
| UNI-12011 | Computer Science | 64 | 36 | 4.00 | B | |
| UNI-12012 | English Language | 63 | 37 | 4.00 | S | |

**Semester 3 | 30 ECTS | 1 ECTS = 25 hrs**

| Module Code | Module Name in English | SSWL hr/sem | USSWL hr/sem | ECTS | Module Type | Prerequisite Module(s) Code |
|---|---|---|---|---|---|---|
| Bio-23113 | Biochemistry I | 77 | 48 | 5.00 | C | Bio-1102 |
| Bio-23014 | Plant Anatomy | 77 | 48 | 5.00 | C | |
| Bio-23015 | Invertebrates | 77 | 48 | 5.00 | C | |
| Bio-23016 | Argegonat & Alge | 77 | 48 | 5.00 | C | |
| Bio-23017 | Entomology | 77 | 48 | 5.00 | C | |
| Bio-23018 | Microbiology | 62 | 63 | 5.00 | C | |

**Semester 4 | 30 ECTS | 1 ECTS = 25 hrs**

| Module Code | Module Name in English | SSWL hr/sem | USSWL hr/sem | ECTS | Module Type | Prerequisite Module(s) Code |
|---|---|---|---|---|---|---|
| Bio-24219 | Clinical Chemistry | 94 | 56 | 6.00 | C | Bio-1102 |
| Bio-24120 | Plant Taxonomy | 79 | 46 | 5.00 | C | Bio-23014 |
| Bio-24121 | Parasitology | 79 | 46 | 5.00 | C | Bio-23015 |
| Bio-24122 | Entomology( | 79 | 46 | 5.00 | C | Bio-23017 |
| Bio-24123 | Microbiology II | 94 | 56 | 6.00 | C | Bio-23018 |
| UNI-24124 | English Language | 33 | 42 | 3.00 | C | Bio-12012 |

**Semester 5 | 30 ECTS | 1 ECTS = 25 hrs**

| Module Code | Module Name in English | SSWL hr/sem | USSWL hr/sem | ECTS | Module Type | Prerequisite Module(s) Code |
|---|---|---|---|---|---|---|
| Bio-35025 | Cell Biology | 60 | 40 | 4.00 | C | |
| Bio-35026 | Ecology | 60 | 90 | 6.00 | C | |
| Bio-35027 | Histology | 60 | 65 | 5.00 | C | |
| Bio-35028 | Mycology I | 61 | 64 | 5.00 | C | |
| Bio-35029 | Plant Physiology | 79 | 46 | 5.00 | C | |
| Bio-35030 | Bio Techniques | 79 | 46 | 5.00 | C | |

**Semester 6 | 30 ECTS | 1 ECTS = 25 hrs**

| Module Code | Module Name in English | SSWL hr/sem | USSWL hr/sem | ECTS | Module Type | Prerequisite Module(s) Code |
|---|---|---|---|---|---|---|
| Bio-36131 | Genetics | 60 | 65 | 5.00 | C | Bio-35025 |
| Bio-36132 | Pollution | 60 | 65 | 5.00 | C | Bio-35026 |
| Bio-36133 | Animal Physiology | 60 | 40 | 4.00 | C | Bio-35027 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Bio-36034 | Plant diseases | 61 | 64 | 5.00 | C | |
| Bio-36035 | Embryology | 79 | 46 | 5.00 | C | |
| Bio-36036 | Hematology | 79 | 71 | 6.00 | C | |

**Semester 7 | 30 ECTS | 1 ECTS = 25 hrs**

| Module Code | Module Name in English | SSWL hr/sem | USSWL hr/sem | ECTS | Module Type | Prerequisite Module(s) Code |
|---|---|---|---|---|---|---|
| Bio-47037 | Molecular Biology | 79 | 46 | 5.00 | C | |
| Bio-47038 | Endocrine glands and hormones | 60 | 65 | 5.00 | C | |
| Bio-47039 | Medical insects | 60 | 65 | 5.00 | C | |
| Bio-47040 | Plant metabolism | 90 | 60 | 6.00 | C | |
| Bio-47041 | Water treatment | 77 | 48 | 5.00 | C | |
| Bio-47042 | Research Project | 33 | 67 | 4.00 | C | |

**Semester 8 | 30 ECTS | 1 ECTS = 25 hrs**

| Module Code | Module Name in English | SSWL hr/sem | USSWL hr/sem | ECTS | Module Type | Prerequisite Module(s) Code |
|---|---|---|---|---|---|---|
| Bio-48043 | Genetics Engineering | 50 | 50 | 4.00 | C | |
| Bio-48044 | Immuniteit | 60 | 40 | 4.00 | C | |
| Bio-48045 | cultuur | 80 | 70 | 6.00 | C | |
| Bio-48046 | Patho analyses | 70 | 55 | 5.00 | C | |
| Bio-48047 | Vergelijkende anatomie | 60 | 65 | 5.00 | C | |
| Bio-48048 | Parasitaire wormens | 78 | 72 | 6.00 | C | |

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