BACCALAUREUS TECHNOLOGIAE: BIOTECHNOLOGY
Qualification code: BTBT01 - NQF Level 7

Campus where offered: Arcadia Campus

Important notification to new applicants:
Students who intend to enrol for this qualification should take note that no new applications will be accepted as from 2020. Potential students are advised to consult the University's website for possible new qualifications which are aligned with the newly-implemented Higher Education Qualification Sub-Framework.

REMARKS

a. *Admission requirement(s):*
A National Diploma: Biotechnology or an NQF Level 6 bachelor's degree in Biotechnology or Microbiology from a South African university.

Holders of any other equivalent South African or international qualification may also be considered, see Chapter 1 of Students' Rules and Regulations.

b. *Selection criteria:*
Selection is based on an assessment by a departmental selection panel.

c. *Minimum duration:*
One year.

d. *Presentation:*
Block-mode classes over a period of one or two years.

e. *Intake for the qualification:*
January and July.

f. *Exclusion and readmission:*
See Chapter 2 of Students' Rules and Regulations.

g. *Recognition of Prior Learning (RPL), equivalence and status:*
See Chapter 30 of Students' Rules and Regulations.

h. *Subject credits:*
Subject credits are shown in brackets after each subject.

CURRICULUM

- **SUBJECTS PRINTED IN BOLD ARE NOT FOR REGISTRATION PURPOSES.**
- **SUBJECTS ARE OFFERED IN SEMESTERS, AS DETERMINED BY THE DEPARTMENT.**

FIRST SEMESTER

CODE	SUBJECT	CREDIT
EMB401T	Environmental Biotechnology IV	(0,125)
EPS101T	Entrepreneurial Skills	(0,100)
IBI401T	Industrial Biotechnology IV	(0,125)
MBT401T	Medical Biotechnology IV	(0,125)
RSP401T	Research Project IV (offered in both semesters)	(0,300)
RSP401R	Research Project IV (re-registration) (offered in both semesters)	(0,000)
TOTAL CREDITS FOR THE SEMESTER:		0,775

SECOND SEMESTER

CODE	SUBJECT	CREDIT
RDT401T	Recombinant DNA Technology IV	(0,125)
RMN201B	**Research Methodology: Natural Sciences**	
RMN20XB	Research Methodology: Natural Sciences: Biotechnology	(0,050)
RMN20YB	Research Methodology: Natural Sciences: Statistics	(0,050)
TOTAL CREDITS FOR THE SEMESTER:		0,225
TOTAL CREDITS FOR THE QUALIFICATION:		**1,000**

SUBJECT INFORMATION (OVERVIEW OF SYLLABUS)

The syllabus content is subject to change to accommodate industry changes. Please note that a more detailed syllabus is available at the Department or in the study guide that is applicable to a particular subject. On 01 August 2018, the syllabus content was defined as follows:

E

ENTREPRENEURIAL SKILLS (EPS101T) **1 X 3-HOUR PAPER**
(Subject custodian: Department of Management and Entrepreneurship)
Entrepreneurship, core business strategies, marketing strategies, operational strategies, financial planning and management, human resource planning. (Total tuition time: ± 60 hours)

ENVIRONMENTAL BIOTECHNOLOGY IV (EMB401T) **1 X 3-HOUR PAPER**
(Subject custodian: Department of Biotechnology and Food Technology)
Environmental protection and waste disposal, industrial wastewater treatment processes, biodegradation of xenobiotic compounds, bioleaching and biosorption, soil bioremediation, bioremediation of oil spills. (Total tuition time: ± 48 hours)

I

INDUSTRIAL BIOTECHNOLOGY IV (IBI401T) **1 X 3-HOUR PAPER**
(Subject custodian: Department of Biotechnology and Food Technology)
Immobilisation technology, industrial enzymes: classes, production, applications, economic considerations. Processes, applications and economics of ethanol, microbial polysaccharides, antibiotics. Biosafety and biodiversity, microbial insecticides, Bt crops. Influence of biotechnology on industrial products. Microbial transformations with industrial applications. (Total tuition time: ± 48 hours)

M

MEDICAL BIOTECHNOLOGY IV (MBT401T) **1 X 3-HOUR PAPER**
(Subject custodian: Department of Biomedical Sciences)
Mammalian cell culture, application of normal and cancerous cell cultures, recombinant DNA technology in cell cultures, applications of recombinant cell cultures. (Total tuition time: ± 48 hours)

R

RECOMBINANT DNA TECHNOLOGY IV (RDT401T) **2 X 2-HOUR PAPER**
(Subject custodian: Department of Biotechnology and Food Technology)
An in-depth handling of recombinant DNA technology as the foundation for modern biotechnology. Topics discussed include restriction modification enzymes, hybridisation, cloning and cloning vectors, sequencing, polymerase chain reaction, genome projects, gene manipulations, genomic and cDNA libraries, DNA delivery methods, expression of cloned genes in E. coli and prokaryotes, products made using genetic engineering. Bioinformatics and analysis of biological data using computer software will be introduced. The students will gain in-depth knowledge and hands-on laboratory/industrial skills required for direct employment or for creation of employment in an industry dealing with this subject matter. (Total tuition time: ± 144 hours)

RESEARCH METHODOLOGY: NATURAL SCIENCES: BIOTECHNOLOGY (RMN20XB) **CONTINUOUS ASSESSMENT**

(Subject custodian: Department of Biotechnology and Food Technology)

What is research? Tools of research, getting started on a research project, review of the relevant literature, research design and data collection. Writing a proposal and a research report, oral presentations skills, principles of postgraduate supervision. Practical assignments. (Total tuition time: ± 32 hours)

RESEARCH METHODOLOGY: NATURAL SCIENCES: STATISTICS (RMN20YB) **CONTINUOUS ASSESSMENT**

(Subject custodian: Department of Mathematics and Statistics)

Statistical methods for the preparation and working of data, including descriptive statistical methods. (Total tuition time: not available

RESEARCH PROJECT IV (RSP401T/R) **CONTINUOUS ASSESSMENT**

(Subject custodian: Department of Biotechnology and Food Technology)

Students will be expected to plan and give a pre-presentation of a research project idea. Once approved, the student will have to plan, write and present a research proposal, conduct and complete experimental work under supervision, and critically analyse and interpret results. Write a research report in scientific format, present the report orally and visually. (Total tuition time: ± 48 hours as well as other non-formal tuition periods)