



UNIVERSITI
PENDIDIKAN
SULTAN IDRIS
اونڤورسيتي فنڤديدين سلطان ادريس

SULTAN IDRIS EDUCATION UNIVERSITY

Panduan Akademik Academic Guideline

Fakulti Sains & Matematik

Faculty of Science and Mathematics

Program Sarjana Muda
Degree Programmes

Sesi 2025/2026
Session 2025/2026



<http://fsmt.upsi.edu.my>

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FAKULTI SAINS DAN MATEMATIK

‘MEMUPUK
MINDA KREATIF’



B



J A B A T A N
BIOLOGI

(BIOLOGI DEPARTMENT)

**DIRECTORY OF
EXPERTISE:**

LIST OF ACADEMIC
STAFFS OF THE
BIOLOGY
DEPARTMENT

**BACHELOR OF
EDUCATION
(BIOLOGI) WITH
HONOURS:**

- Program Structure
- Course Distribution
- English Language
- Teaching Practice

**BACHELOR OF
EDUCATION
(SCIENCE) WITH
HONOURS**

- Program Structure
- Course Distribution
- English Language
- Teaching Practice

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Sultan Azlan Shah Campus
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JABATAN BIOLOGI (BIOLOGY DEPARTMENT)

**KETUA JABATAN/
HEAD OF DEPARTMENT**

Dr. Noraine Salleh Hudin

Ph.D (Ghent University), M.Sc. (Lund University, Sweden), B.Sc (UMT)



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Kepakaran/Expertise:
Animal Ecology

Professor Dr. Haniza Hanim Mohd Zain

Ph.D (Leicester, UK), M.Sc. (UKM), B.Sc. (Hons) (UKM), PG-Cert in LT HE (Roehampton, UK)



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Kepakaran/Expertise:
Biosensor Biochemistry, Microalgae Biotechnology, Applied Aquatic Ecology

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Kepakaran/Expertise:
Bioprocess Engineering, Environmental Biotechnology

Assoc. Prof. Dr. Nor Nafizah Mohd Noor

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Kepakaran/Expertise:
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Kepakaran/Expertise:
Microbiology, Microbial Biotechnology, Protein Chemistry, Structural Biology

Assoc. Prof. Ts. Dr. Nurul Bahiyah Abd. Wahid

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Kepakaran/Expertise:
Air Pollution, Air Quality, Atmospheric Science, Environmental Science

JABATAN BIOLOGI (BIOLOGY DEPARTMENT)



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Kepakaran/Expertise:

Biology Education, Science Education, Pedagogy of Science and Biology Education, Experiential and Field-Based Learning in Science Education, Curriculum Design and Development in Science Education, Assessment and Evaluation in Science Education and Creative Thinking (Torrence)



Dr. Noraine Salleh Hudin

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Kepakaran/Expertise:

Animal Ecology



Dr. Jameel Rabee Jameel Al-Obaidi

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Kepakaran/Expertise:

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Kepakaran/Expertise:

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Kepakaran/Expertise:

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Kepakaran/Expertise:

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Kepakaran/Expertise:

Measurement Education in Reasoning Skills, Self-Regulated Learning
Developing Model, Index, SEM-AMOS modelling, RASCH, Compind R.



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Kepakaran/Expertise:

Proteomics, Molecular Biology, Bioinformatics, Plant and Fungal Biology



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Plant Physiology, Plant Science, Enzyme Technology



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Kepakaran/Expertise:

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Kepakaran/Expertise:

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Kepakaran/Expertise:

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Kepakaran/Expertise:

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PROGRAM STRUCTURE

B.Ed (Biology)

AT11

Minor
Students of Bachelor of Education (Biology) with Honours may choose 33.6 ECTS of minor courses from any programs offered by the university

Open Elective
Students need to take level 1,2 and 3 of Foreign Language courses as well as 1 open elective courses

Teaching Practice

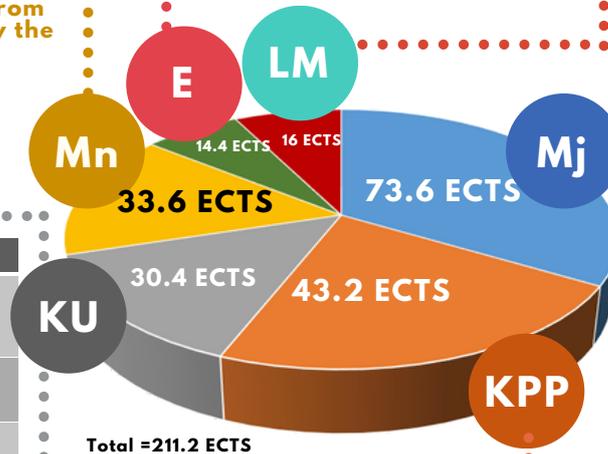
Course Code and Name	ECTS
KPR3068 Teaching Practices	12.8
KPR3072 Apprentice Teacher	3.2
JUMLAH	16

University Courses
University course package for local students:

Course code & Name	ECTS
UPU2122 Appreciation of Ethics and Civilization	3.2
UPU3112 Philosophy and Current Issues	3.2
UBI3282 Comprehensive English 1	3.2
UBI3292 Comprehensive English 2	3.2
UPU3222 Entrepreneurial Culture	3.2
UBM3262 Malay Discourse Skills	3.2
UPU3312 National Studies	3.2
*** Co-Curriculum (Sports, Club/ Associations and Uniformed units)	4.8
UPU2342 Integriti and Anti-corruption	3.2
JUMLAH	30.4

University course packages for international students:

Kod & Nama Kursus	Kredit
UPU2122 Appreciation of Ethics and Civilization	3.2
UBM2142 Malay Communication 1	3.2
UBI3282 Comprehensive English 1	3.2
UBI3292 Comprehensive English 2	3.2
UPU3222 Entrepreneurial Culture	3.2
UBM3362 Malay Communication 2	3.2
UPU3322 Malaysian Arts and Cultural Heritage	3.2
*** Co-Curriculum (Sports, Club/ Association and Uniformed Units)	4.8
UPU2342 Integriti and Anti-Corruption	3.2
TOTAL	30.4



Core Course: Education Professional

Course Code & Name	ECTS
KPF3012 Education Development in Malaysia: Philosophy and Policy	3.2
KPS3023 Sociology of Education	4.8
KPP3023 Psychology in Education	4.8
KPD3036 Assessment Design and Teaching Technology	9.6
SBP3013 Implementation of Biology Teaching (MAJOR field)	4.8
***** Implementation of Minor Teaching (MINOR field)	4.8
KPR3042 Reflection of School and Classroom Management	3.2
KPK3012 Inclusive Education	3.2
KPG3013 Professional Teachers	4.8
TOTAL	43.2

Note: All the above courses must be repeated if the student obtains Grade C- and below

Major

Course code & Name	ECTS
*SBC3013 Cell Biology	4.8
SBC3063 Plant Anatomy and Morphology	4.8
SBB3053 Biodiversity	4.8
SBC3053 Animal Anatomy and Histology	4.8
*SBU3033 Genetics	4.8
SBC3043 Developmental Biology	4.8
SBF3053 Physiological Processes in Plant	4.8
*SBF3014 Physiological Processes in Animal	6.4
SBB3033 Principles in Microbiology	4.8
SBK3013 Principles in Biochemistry	4.8
SBT3023 Principles of Biotechnology	4.8
SBV3013 Ecology	4.8
SPR3003 Educational Research Method	4.8
SBR3913 Final Year Project 1	4.8
SBR3923 Final Year Project 2	4.8
TOTAL	73.6

Note: Courses mark with * must be repeated if students Grade C- and below.

COURSE DISTRIBUTION

B.Ed (Biology)

AT11

SUGGESTED COURSE REGISTRATION BY SEMESTER

SEMESTER 1

UPU3112/ *UBM2142	Philosophy and Current Issue/*Malay Language Communication 1	3.2
KPF3012	Education Development in Malaysia: Philosophy and Policy	3.2
SBC3013	Cell Biology	4.8
SBC3053	Animal Anatomy and Histology	4.8
SBB3053	Biodiversity	4.8
SBV3013	Ecology	4.8

TOTAL 25.6

SEMESTER 2

UBM3262/ *UBM3362	Malay Discourse Skills Language/*Malay Language Communication 2	3.2
UPU3312/ *UPU3322	National Studies/*Malaysia Art and Cultural Heritage	3.2
UPU2122	Appreciation of Ethics and Civilization	3.2
KPS3023 ***	Sociology of Education Club/Association Component Co- Curriculum	4.8 1.6 4.8
SBC3063	Plant Anatomy and Morphology	4.8
SBB3033	Principles in Microbiology	

TOTAL 25.6

SEMESTER 3

KPP3023	Psychology in Education	4.8
UPU3222 ***	Entrepreneurial Culture Component Co- Curriculum Uniformed Unit	3.2 1.6
UBI3282	Comprehensive English 1	3.2
SBC3043	Development Biology	4.8
SBU3033 ***	Genetics Minor 1	4.8 4.8
***	Foreign Language Level 1	3.2

TOTAL 30.4

SEMESTER 4

KPK3012 ***	Inclusive Education Sport Co-curriculum	3.2 1.6
UBI3292	Essential English 2	3.2
SBT3023	Principles of Biotechnology	4.8
SBK3013 ***	Principles in Biochemistry Minor 2	4.8 4.8
***	Minor 3	4.8
***	Foreign Language Level 2	3.2

TOTAL 30.4

*Non-citizen students only

COURSE DISTRIBUTION

B.Ed (Biology)

AT11

SEMESTER 5

KPD3036	Design, Assessment and Teaching Technology	9.6
KPG3013	Professional teachers	4.8
UPU3242	Integrity and Anti-Corruption	3.2
SBF3014	Physiological Processes in Animals	8.4
SPR3003	Educational Research	4.8
***	Method	3.2
	Foreign Language Level 3	

TOTAL 32

SEMESTER 6

SBF3053	Physiological Processes in Plants	4.8
SBR3913	Final Research Project 1	4.8
	Minor 4	
***	Minor 5	4.8
***	Minor 6	4.8
***		4.8

TOTAL 24

SEMESTER 6 BREAK

KPR3072	Apprentice Teacher	3.2
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4 Weeks

SEMESTER 7

SBP3013	Implementation of Biologi Teaching	4.8
SBR3923	Final Research Project 2	4.8
***	Implementation of Minor Teaching	4.8
***	Minor 7	4.8
***	Elective 1	4.8
KPR3072	Apprentice teacher	3.2
KPR3042	Reflection of school and classroom management	3.2

TOTAL 30.4

SEMESTER 8

KPR3068	Teaching Practices	12.8
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TOTAL 12.8

This course registration proposal is subject to course availability each semester. Students are advised to refer to their respective departments for any updates.

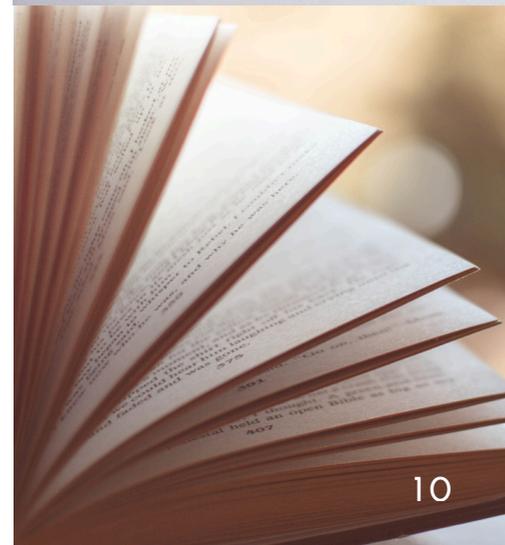
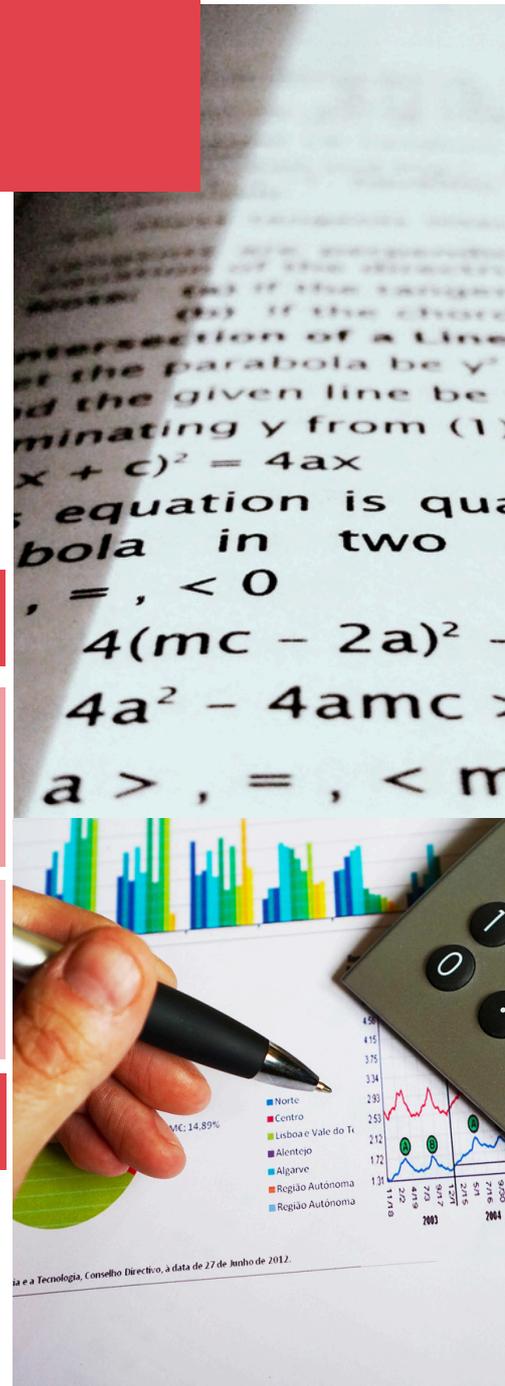
TEACHING

PRACTICE

IMPLEMENTATION OF TEACHING PRACTICE (LM) AND APPRENTICE TEACHER (PG)

The new structure of Teaching Training for UPSI Bachelor of Education students starting Semester 1 admission session, Session 2025/2026 (October 2025)

Program	Implementation	Duration	ECTS
Apprentice Teacher	Semester 6 break	4 Weeks	3.2
Teaching Practice	Semester 8	16 Weeks	12.8
TOTAL			16 ECTS



COURSE SYNOPSIS

University
Course

KU

UPU3112 PHILOSOPHY AND CURRENT ISSUES

This course covers the relationship between philosophy and the National Philosophy of Education and the Rukun Negara. It explores the use of philosophy as a tool to refine the culture of thinking in life through the art and methods of thinking, as well as the concept of humanity. Key topics in philosophy, including epistemology, metaphysics, and ethics, are discussed in the context of contemporary issues. Emphasis is placed on philosophy as a foundation for fostering intercultural dialogue and cultivating shared values. By the end of this course, students will be able to view different disciplines of knowledge as an interconnected and comprehensive body of learning.

UBI3282 COMPREHENSIVE ENGLISH 1

This course aims to develop students' ability to report collected information and analyze texts in fields of interest. It also enables students to present explanatory ideas for effectively communicating about familiar topics.

UBI3292 COMPREHENSIVE ENGLISH 2

This course further strengthens students' ability to evaluate texts related to abstract and complex topics. It helps students communicate effectively through essay writing in academic and workplace contexts. The course also helps students develop teamwork skills to share ideas and opinions in both ordinary and complex contexts.

UBM2142 MALAY COMMUNICATION 1

This course emphasizes students' mastery of pronunciation and vocabulary. Attention is also given to rewriting simple sentences and speaking effectively in Malay at a basic level.

UBM3362 MALAY COMMUNICATION 2

This course focuses on developing Malay language skills for international students to communicate effectively in everyday life. Students will be introduced to basic Malay conversation and writing. The primary focus is to master fundamental communication skills, including speaking, writing, reading, and listening in Malay.

UBM3262 MALAY DISCOURSE SKILLS

This course aims to enhance students' communication skills in academic discourse. Students are exposed to practical skills for information searching, producing academic writing, and delivering effective presentations in Malay.

UPU2122 APPRECIATION OF ETHICS AND CIVILIZATION

This course prepares students to appreciate ethics and civilization in Malaysia's multicultural society to strengthen their critical and analytical thinking in addressing life's challenges. The course content emphasizes the appreciation of ethics and civilization within the Malaysian framework. Students are exposed to the dynamic concepts of ethics and civilization that have shaped Malaysia from the pre-colonial to the post-colonial era. Understanding the formation of ethics and civilization in a diverse society is discussed to deepen appreciation and promote national unity and Malaysian identity. The Malaysian model of civilization is analyzed and debated in academic activities, guided by the Federal Constitution as a foundation for integration and ethical governance. National unity is significantly influenced by globalization and the complex development of information and communication technology. Thus, ethical and civilizational appreciation fosters social responsibility at individual, family, community, and national levels. Changes in society and economic development present new challenges to sustaining ethics and civilization in Malaysia. High-Impact Educational Practices (HIEPs) are implemented in teaching and learning to deepen this course.

UPU2342 INTEGRITY AND ANTI-CORRUPTION

This course covers the fundamental concepts of integrity, types of corruption offenses, and abuse of power in daily life and organizational contexts, as well as measures for preventing corruption. Real corruption cases and issues are discussed in learning sessions. The main focus is to develop the skills needed to address corruption, abuse of power, and white-collar crime, ensuring that individuals act with integrity at all times.

COURSE SYNOPSIS

University
course

KU

UPU3222 ENTREPRENEURSHIP CULTURE

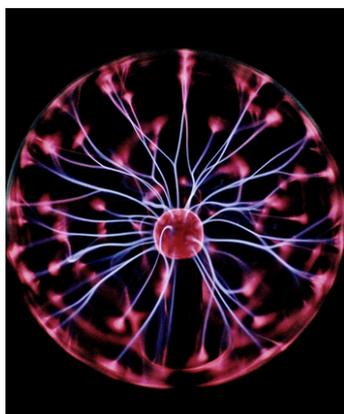
This course aims to give exposure to the basic concepts and principles of entrepreneurship to students so that they can generate interest in venturing into the field of entrepreneurship. This course focuses on the study of entrepreneurship and business skills with an emphasis on the implementation of interactive learning. Students are given opportunity to experience real life as an entrepreneur by developing a business plan framework as long as carrying out activities based on entrepreneurship.

UPU3322 MALAYSIAN ARTS AND CULTURE HERITAGE

This course introduces students to the various art forms of the multi-racial and ethnic communities that are part of Malaysia's cultural heritage. Students will study music, dance, theater and traditional crafts that represent the unique culture of the Malaysian community in Peninsular Malaysia, Sabah and Sarawak. Through hands - on involvement of performing arts and a making of selected crafts, students will develop a greater appreciation of Malaysian cultural heritage and a better understanding of Malaysian society.

UPU3312 NATIONAL STUDIES

This course emphasizes the aspects of nationhood in Malaysia. This covers country's histories, administrative system, constitution and government policies in the nation-building process. The Science of National Studies crosses various disciplines including History, Sociology, Anthropology, Political Science, Law and Economics.



COURSE SYNOPSIS

Professional Education Course

KPP

KPF3012 EDUCATION DEVELOPMENT IN MALAYSIA: PHILOSOPHY AND POLICY

This course critically discuss the philosophy and legal policy of education by analyzing it in the context of development of education in Malaysia. This course also explores and discusses the development of the national education as a continuation of practices that should occur continuously in the national development process. Philosophy, policies, curriculum and rules in the education are also emphasized to enable students to acquire knowledge and skills as well as foster attitudes in carrying out their responsibilities effectively in the teaching profession.

KPS3014 LEARNING MANAGEMENT

This course discuss the role of the teacher as a learning manager in the context of various learning environments. Students will be introduced to various aspects of learning management including organization, leadership, behavior, resources, culture, technology and capabilities. This course will expose students to real school experiences that will ultimately enable them to function effectively in all learning situations

KPK3012 INCLUSIVE EDUCATION

This course focuses on the policy and philosophy of special education aimed at inclusive education. The course discusses current issues, the characteristics of special education students and discusses teaching strategies and techniques through an inclusive approach. The course also discusses collaboration between stakeholders in the making inclusive education success.

SBP 3013 IMPLEMENTATION OF BIOLOGY TEACHING

This course aims to strengthen student's skills in planning and implementing teaching through micro and macroteaching in the main aspects of teaching process : (a) starting learning outcomes, (b) choosing and planning teaching materials and sequences, (c) choosing and implementing teaching methods, strategies and techniques that is appropriate, (d) prepare and use appropriate teaching and learning media and technology, and (e) prepare, select and use appropriate assessment method and tools to evaluate learning outcomes in Biology subjects, and (f) plan Action Studies

KPP3014 STUDENT LEARNING AND DEVELOPMENT

This course discuss aspects of learning and development of teenagers with an educational background that covers the student, the learning process and the diversity of the students. In addition, aspects of learning experience based on the mind, culture, language, self-ability, personality, social, environmental, emotional and physical are also highlighted.

KPD3016 TEACHING, TECHNOLOGY AND ASSESSMENT I

This course discusses and guides students to develop teaching planning skills in the following five main aspects: (a) starting teaching and learning objectives, (b) choosing and organizing teaching content and materials, (c) choosing appropriate teaching approaches, methods and techniques, (d) provide appropriate tools and technology in the teaching and learning process, (e) provide, select and use appropriate assessment tools and methods to assess and evaluate learning outcomes. Students will gain the skills to prepare a set of lesson plans on the topic in their specialization subject.

KPR3042 REFLECTION OF SCHOOL AND CLASSROOM MANAGEMENT

This course will enable students to critically reflect on teaching practice, make decisions and find alternative solutions and the teaching and learning based on teaching practices experience.

COURSE SYNOPSIS

Apprentice
Teacher (PG)/
Teaching
Practice (LM)

PG/
LM

KPR3072 APPRENTICE TEACHER

This course provide an opportunity for students to understand the school environment and school culture. It also give students the opportunity to critically relate the National education philosophy in the school environment. In addition, this course also give students the opportunity to identify teaching planning and facilitation as well as involvement with school management and co-curricular activities. This course is prerequisite for teaching training course 1 and 2.

KPR3068 TEACHING PRACTICE

This course aims to strengthen the skills of applying knowlegde in the real context of teaching, learning and educational management in schools.

COURSE SYNOPSIS

B.Ed
(Biology)

AT11

SBC3013 CELL BIOLOGY

The course discusses cell biology, which includes scientific methods, experimental methodology, use of the microscope, as well as origin and history of life. This course will also emphasize on the theory of cell, prokaryote and eukaryote cells, organization of cell, cell organelles and its functions and processes, as an introduction to molecular biology.

SBB3053 BIODIVERSITY

This course discusses the concepts of evolution, biodiversity, classification, conservation, and teaching and learning issues related to biodiversity. The classification based on the life systems of the six Kingdom and the naming of organisms will be emphasized. Viruses as non-living things are also discussed. Characteristics of organisms in major phylums/divisions such as morphology, nutrition, life cycle, habitat and ecological and industrial importance are discussed. Awareness of the importance of biodiversity is demonstrated in students' commitment to fieldwork assignments and course work.

SBU3033 GENETICS

This course discusses the concept of Mendelian genetics, modification of Mendelian ratios including gene interactions, gene and environmental interactions, non -Mendelian inheritance, gender and sex chromosome determination, gene relationships and chromosome mapping. The course also provides students with knowledge related to genetic concepts in populations as well as description of DNA structure, DNA replication, genetic code and gene expression processes. At the end of this subject, students should be able to apply genetic knowledge in understanding and solving genetically related problems.

SBF3053 PHYSIOLOGICAL PROCESSES IN PLANTS

The course discusses important aspects in plant physiological processes. It includes the relation of water with plants, inorganic nutrients, photosynthesis, translocation, phytoremediation, plant hormone, plant movement, photoperiodism and plants under stress. Discussion related to the current issues involved in the interaction between the plant and environment in physiological aspects will also be conducted.

SBB3033 PRINCIPLES IN MICROBIOLOGY

Principles of Microbiology covers relevant information on different aspects of microbes in a comprehensive style. This course provides the latest information available on microorganisms with analysis of their strategies for carrying out essential life functions and contribution to the overall health and welfare of humans and the environment.

SBC3012 PLANT ANATOMY AND MORPHOLOGY

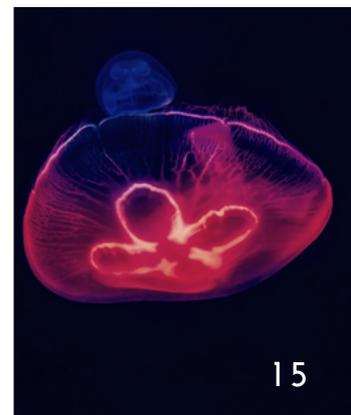
This course discusses the anatomical and morphological structure of plants including descriptions of cells, tissues and organs that constitute the entire plant organization. Primary and secondary growth in plants will also be clearly explained. In addition, the variety of morphological and anatomical structures of plants, the relationship with the environment and adaptation to the habitat will also be discussed. The structure of vegetative and reproductive organs of Angiosperms and other plant groups will be described, where this course provides a basic understanding before students learn the physiological processes, development and metabolism of plants in other courses. Students will also be strengthened with practical skills and preparation of microscope slides.

SBC3053 ANIMAL ANATOMY AND HISTOLOGY

This course discusses the basic anatomy and histology of vertebrate animals. Students will be provided with an understanding of the types and structures of cells that make up vertebrate tissues and internal organs through microscopic identification and organs during practical training in the laboratory. At the end of this course, students will be able to identify the specialized cells and how they interact to form related tissues structurally and functionally.

SBC3043 DEVELOPMENTAL BIOLOGY

This course discusses the development and growth of vertebrate animals and angiosperm plants starting from the process of fertilization, embryo formation until the organism matures. The discussion will also involve the latest technological developments in the field of reproduction as well as ethics and professionalism in both fields.



COURSE SYNOPSIS

B.Ed
(Biology)

AT11

SBK3013 PRINCIPLES IN BIOCHEMISTRY

This course addresses the significance of biomolecules, metabolism and its regulation, interconnections between pathways of carbohydrates, proteins, and lipids that occur in cells, and the connection to health and nutrition. The discussion will include the classification of enzymes, the mechanism of action, kinetics, co factors, and inhibition. The concept of aerobic and anaerobic metabolism will be explained using examples from daily life. Students will participate in collaborative learning activities, such as project-based learning.

SBV3013 ECOLOGY

The course discusses basic principle of ecology and ecological processes in the environment. The main components including the role of individuals, population, community, and ecosystem will be discussed and analyzed as dynamic entity. The course will also emphasize on the distribution and dominance of population and community. Laboratory and field work will emphasize on quantitative ecology such as sampling and analysis of population.

SBR3913 FINAL YEAR PROJECT 1

This course gives students the opportunity to apply their knowledge and understanding of biology/ physics/ chemistry/ science education research through writing and presenting research proposals. The content of the research proposal includes problem statement, research objectives and questions, scope of research, research framework, literature review, research design, sampling, and data analysis. The assessment of learning outcomes also includes the student's attitude and personality as a researcher.

SBT3023 PRINCIPLES OF BIOTECHNOLOGY

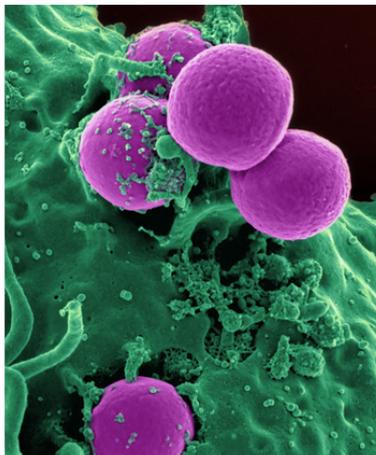
Kursus ini membicarakan konsep asas dalam bioteknologi. Pelajar juga dibekalkan dengan pemahaman tentang teknologi DNA rekombinan melalui teori dan amali serta aplikasinya dalam pelbagai bidang bioteknologi. Kemajuan dalam bioteknologi yang menyumbang kepada kesejahteraan umum juga akan dibincangkan. Pada akhir kursus, pelajar juga akan didedahkan kepada isu-isu berkaitan keselamatan, etika dan moral dalam bioteknologi.

SPR3003 EDUCATIONAL RESEARCH METHOD

This course discusses the knowledge, skills and processes for planning research project in science and mathematics education. Topics covered are: types of research, ethics in research, problem statement; research purpose/objectives; research questions/hypotheses; research/learning theories and models; literature review; methods of data collection and analyses; discussion of findings, conclusion and recommendation for future research and final report writing.

SBR3923 FINAL YEAR PROJECT 2

This course gives students the opportunity to collect, analyse, and interpret research data based on the written research proposal. Students will write a final year project report and an academic writing and present the research findings in a final year project seminar/conference. The assessment of learning outcomes also includes the student's attitude and personality as a researcher.



“ Nurturing Creative Mind ”

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OPERATING HOURS

MONDAY TO THURSDAY

Operating hours : 8:30 am - 4.30 pm
Break : 1.00 am - 2.00 pm

FRIDAY

Operating hours : 8:30 am- 4.30 pm
Break : 12.15 pm- 2.45 pm

SATURDAY, SUNDAY AND PUBLIC HOLIDAY

Close