UNIVERSITI PENDIDIKAN SULTAN IDRIS
اونيۏرسيتي ڤندديقن سلطان ادريس
SULTAN IDRIS EDUCATION UNIVERSITY

Panduan Akademik
Academic Guideline

Fakulti Sains & Matematik
Faculty of Science and Mathematics

Program Sarjana Muda
Degree Programmes

Sesi 2024/2025
Session 2024/2025

http://fsmt.upsi.edu.my
www.facebook.com/facscimateUPSI/

Panduan Akademik
Academic Guideline

CONTENT

SECTION

TAKWIM AKADEMIK

SISTEM PENASIHAT AKADEMIK

FAKULTI SAINS DAN MATEMATIK

‘MEMUPUK MINDA KREATIF’

B

JABATAN BIOLOGI

(BIOLOGI DEPARTMENT)

DIRECTORY OF EXPERTISE:

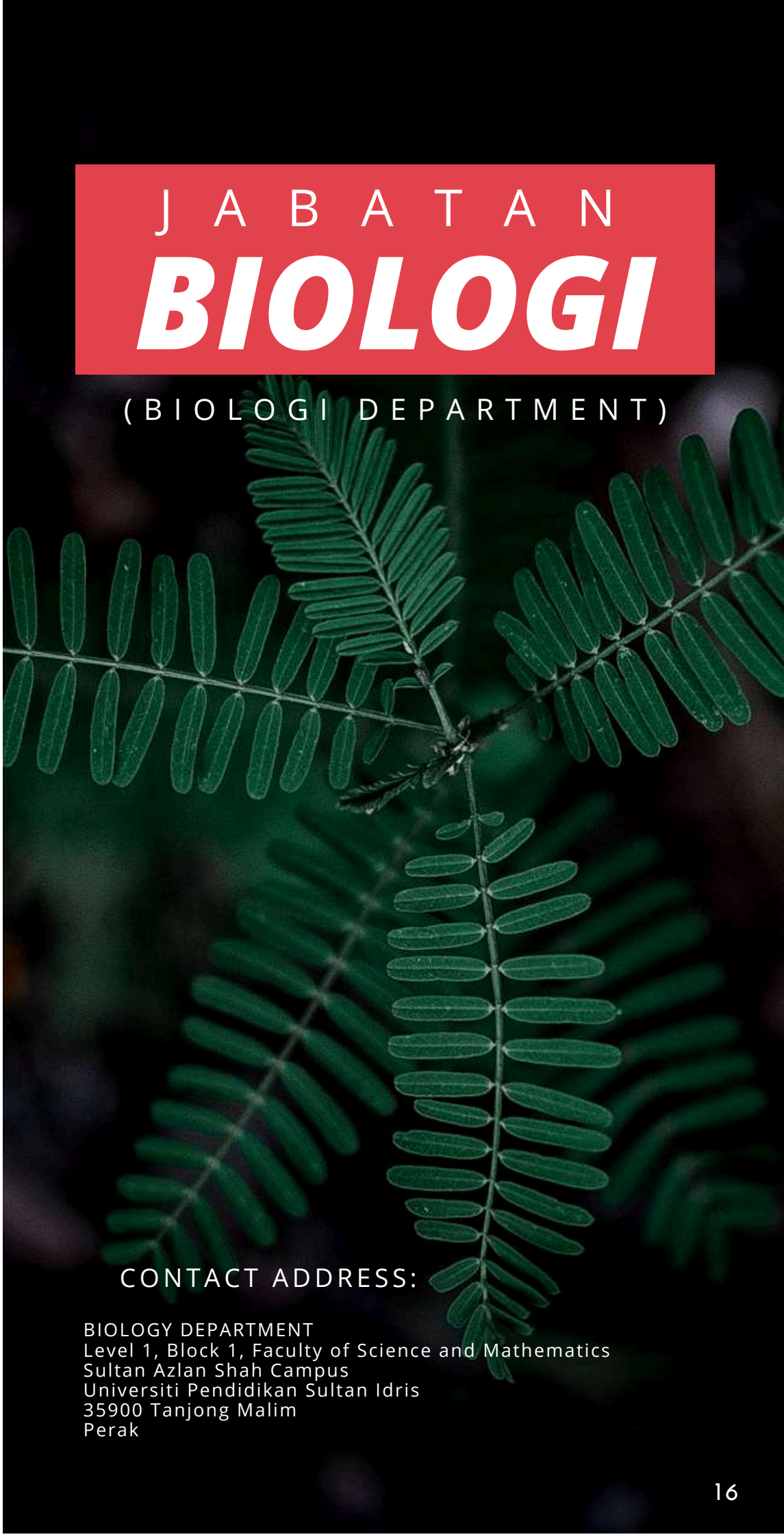
LIST OF ACADEMIC STAFFS OF THE BIOLOGY DEPARTMENT

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



CONTACT ADDRESS:

BIOLOGY DEPARTMENT
Level 1, Block 1, Faculty of Science and Mathematics
Sultan Azlan Shah Campus
Universiti Pendidikan Sultan Idris
35900 Tanjong Malim
Perak

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)

:05-4507418
: noraine@fsmt.upsi.edu.my

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)

: 05-4507319
: haniza@fsmt.upsi.edu.my

Kepakaran/Expertise:
Animal Applied Histology, Small Mammal Biotechnology

Professor Dr. Rosmilah Misnan

Ph.D (UKM), B.Sc. (UKM)

:05-4507367
: rosmilah@fsmt.upsi.edu.my

Kepakaran/Expertise:
Medical Biotechnology, Proteomics, Allergy

Assoc. Prof. Dr. Shakinaz Desa

Ph.D (UPM) , M.Sc. (UPM), B.Sc. (UPM)

: 05-4507555
: shakinaz@fsmt.upsi.edu.my

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

Assoc. Prof. Dr. Syakirah Samsudin

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

: 05-4507380
: syakirah@fsmt.upsi.edu.my

Kepakaran/Expertise:
Animal Physiology, Toxicity, Conservation Biology, Toxicology

Assoc. Prof. Dr. Norjan Yusof

Ph.D (Kyushu Institute Technology), M.Env. (UPM), B.Sc. Biotech. (UPM)

: 05-4507353
: norjan@fsmt.upsi.edu.my

Kepakaran/Expertise:
Bioprocess Engineering, Environmental Biotechnology

Assoc. Prof. Dr. Nor Nafizah Mohd Noor

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

: 05-4507398
: nafizah@fsmt.upsi.edu.my

Kepakaran/Expertise:
Systematics Anatomy, Plant Tissue Culture, Botany, Palynology

Assoc. Prof. Dr. Fatimah Mohamed

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

: 05-4507334
: fatimah@fsmt.upsi.edu.my

Kepakaran/Expertise:
Phylogenetics, Botany, Plant Systematics

Assoc. Prof. Dr. Muhammad Aqil Aryan Wong

Ph.D (UPM), B.Sc (Hons) (UPM)

: 05-4507326
: cheefah@fsmt.upsi.edu.my

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

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

Ph.D (UKM),M.Eng. (UTM), B.Eng. (UTM)

: 05-4507732
: nurul_bahiyah@fsmt.upsi.edu.my

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

JABATAN BIOLOGI
(BIOLOGY DEPARTMENT)

Dr. Alene Tawang

Ph.D (UWA, Australia), M.Sc. (UKM),
B.Sc. (Hons) (UKM)

: 05-4507633
: alene@fsmt.upsi.edu.my

Kepakaran/Expertise:
Animal Biology, Sperm Preservation, Cell Histology and Morphology, Semen Analysis, Reproductive Biology & STEM Education

Dr. Nurhaida Kamaruddin

PhD. (UKM), M.Sc. (UKM), B.Sc. (UKM)

: 05-4507654
: nurhaida@fsmt.upsi.edu.my

Kepakaran/Expertise:
Fungal Biotechnology, Microbial Biotechnology, Molecular Biology

Dr. Remmy Keong Bun Poh

Ph.D (UPM), M.Sc. (UPM), B.Sc. (Hons) (UPM)

: 05-4507328
: keongbunpoh@fsmt.upsi.edu.my

Kepakaran/Expertise:
Animal Breeding and Genetics, Plant and Animal Genetics

Dr. Raja Farhana Raja Khairuddin

Ph.D (Manchester, UK), M.Sc. (Sydney Univ),
B.Sc. (UM)

: 05-4507781
: rfrk@fsmt.upsi.edu.my

Kepakaran/Expertise:
Bioinformatics

Dr. Mohamad Termizi Borhan

PhD. (Aalborg Denmark),M.Ed. (Sc. Ed.) (USM),
B.Ed. Sc. (UPSI)

: 05-4507591
: termizi@fsmt.upsi.edu.my

Kepakaran/Expertise:
Qualitative Research in Education, Science Education Research, Innovation in Biology Teaching and Learning, Problem and Project-Based Learning

Dr. Hamidah Idris

PhD. (Newcastle, UK), M.Sc. (UKM), B.Sc (UKM)

: 05-4507330
: hamidah.idris@fsmt.upsi.edu.my

Kepakaran/Expertise:
Microbiology, Actinobacteria, Taxonomy, Natural Products, Microbial Diversity

Dr. Azi Azeyanty Jamaludin

PhD (Reading, UK),M.Sc (UKM),B.Sc. (UMT)

: 05-4507221
: azi_azeyanty@fsmt.upsi.edu.my

Kepakaran/Expertise:
Plant Molecular Systematics, DNA Barcoding, Biodiversity and Conservation

Ts. Dr. Suzita Ramli

Ph.D (UPM),M.Sc. (UPM), B.Sc. (Hons) (UPM)

: 05-4507870
: suzita@fsmt.upsi.edu.my

Kepakaran/Expertise:
Food Microbiology, Food Safety and Microbiology

Dr. Adibah Abu Bakar

Ph.D (USM), M.Sc. (UPM), B.Sc. (Hons) (UKM)

: 05-4507749
: adibah@fsmt.upsi.edu.my

Kepakaran/Expertise:
Molecular Biology, Biotechnology and Genetics

Dr. Syazwan Saidin

Ph.D (USM), M.Sc. (UPM), B.Sc. (Hons) (UKM)

: 05-4507743
: syazwan.saidin@fsmt.upsi.edu.my

Kepakaran/Expertise:
Genetics, Molecular Medicine, Parasitology, Proteomics

JABATAN BIOLOGI
(BIOLOGY DEPARTMENT)

Dr. Muhamad Ikhwan Mat Saad

Ph.D (UPSI), M.Edu. (UPSI), B.Edu. (UNIMAS)

: 05-4507332
: ikhwan.saad@fsmt.upsi.edu.my

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

Dr. Noraine Salleh Hudin

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

: 05-4507438
: noraine@fsmt.upsi.edu.my

Kepakaran/Expertise:
Animal Ecology

Dr. Jameel Rabee Jameel Al-Obaidi

PhD. (UM), M. Sc. (Al-Nahrain University), B.Sc. (Al-Nahrain University)

: 05-4507324
: jameel@fsmt.upsi.edu.my

Kepakaran/Expertise:
Proteomics, Molecular Biology, Bioinformatics, Plant and Fungal Biology

Dr. Muhammad Hakimi Mohd Kassim

Ph.D (University of Oxford), M.Sc.(UPM), B.Sc. (UPM)

: -
: hakimi.kassim@fsmt.upsi.edu.my

Kepakaran/Expertise:
Animal Physiology

Dr. Fatimah Azzahra Ahmad Rashid

Ph.d (Australian National University), M.Sc. (USM), B.Sc. (UMT)

: 05-4507796
: azzahra@fsmt.upsi.edu.my

Kepakaran/Expertise:
Plant Physiology, Plant Science, Enzyme Technology

Dr. Ahmad Muslihin Ahmad

Ph.d (USM), M.Edu. (USM), B.Edu. (USM)

: 05-4507631
: muslihin@fsmt.upsi.edu.my

Kepakaran/Expertise:
Science and Biology Education Education, SEM-PLS, Measurement in Education, Technology in Education

Dr. Nur Izwani Mohd Shapri

Ph.d (UPSI), M.Edu. (UM), B.Edu. (UM)

: 05-4507331
: izwani.shapri@fsmt.upsi.edu.my

Kepakaran/Expertise:
Module Development, Gamification in Learning, Instructional Technology and Innovation, Experimental, Developmental and Quantitative Research, Biology Education Research

Dr. Zainun Mustafa

Ph.d (USM), B. Sc (UPM)

: 05-4507311
: zainun.m@fsmt.upsi.edu.my

Kepakaran/Expertise:
Science Education

Dr. Wan Nurul Huda Wan Ab Kadir

Ph.d (UPSI), M.Edu. (UPSI), B.Edu. (UPSI)

: 05-4507311
: wannurul@fsmt.upsi.edu.my

Kepakaran/Expertise:
Science, Physics & STEM Education, Innovation in Education,Module Development , Experimental & Development Research

Dr. Nur Munira Azman

Ph.d (USM), M.Sc. (USM), B.A. Sc. (USM)

: 05-4507796
: nurmunira@fsmt.upsi.edu.my

Kepakaran/Expertise:
Ornithology, Ecology, Wildlife Ecology and Management

JABATAN BIOLOGI
(BIOLOGY DEPARTMENT)

Ts. Marina Mokhtar
M.Sc. (USM), B.Sc. (Hons) (USM)

: 05-4507325
: marina@fsmt.upsi.edu.my

Kepakaran/Expertise:
Molecular Biotechnology, Biotechnology, Plant Virology

Mr. Zahid Md Said
M.Sc. (Malaya), B.Sc. (Hons) (Malaya)

: 05-450 7748
: zahid@fsmt.upsi.edu.my

Kepakaran/Expertise:
Higher Plant Systematics, Ecology of Tropical Rain Forest, Botany

Mr. Azmi Ibrahim
M.Sc. (UPM), B.Sc. (Hons) (UKM), Dip.Pend. (UKM)

: 05-4507332
: azmii@fsmt.upsi.edu.my

Kepakaran/Expertise:
Entomologi, Multimedia in Biology

Kakitangan Sokongan (Supporting Staff)

Mdm. Marina Karunzaman
Penolong Kurator S32

: 05-4507661
: marina_nizar@ upsi.edu.my

Mdm. Parizah Hassan
Pembantu Tadbir N26

: 05-4507576
: parizah@upsi.edu.my

FSMT

PROGRAM STRUCTURE B.Ed (Biology) AT11

Open Elective

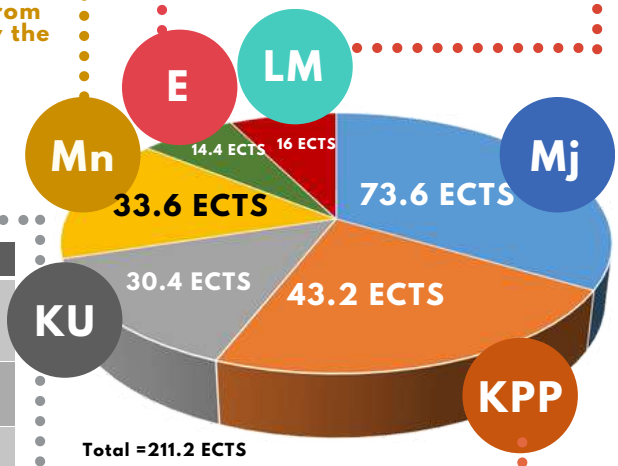
Students need to take level 1,2 and 3 of Foreign Language courses as well as 1 open elective courses

Minor

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

Teaching Practice

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



Total =211.2 ECTS

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
UBI3252 Essential English 1	3.2
UBI3262 Essential English 2	3.2
UPU3222 Enterpreneurial 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
UBI3252 Essential English 1	3.2
UPU3222 Enterpreneurial 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 Integrity and Anti-Corruption	3.2
TOTAL	30.4

Core Course: Education Profesional

Course Code & Name	ECTS
KPF3012 Education Development in Malaysia: Philosophy and Policy	3.2
KPS3023 Sociology of Education	4.8
KPP3023 Psycology 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
KPR3012 Teaching Practice Reflection Seminar	3. 2
KPK3012 Inclusive Education	3.2
KPG3013 Profesional 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	4.8
***	Club/Association	1.6
	Component Co-Curriculum	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	3.2
***	Component Co-Curriculum	1.6
	Uniformed Unit	
UBI3252	Essential English 1	3.2
SBC3043	Development Biology	4.8
SBU3033	Genetics	4.8
***	Minor 1	4.8
***	Foreign Language Level 1	3.2
	TOTAL	30.4

SEMESTER 4

KPK3012	Inclusive Education	3.2
***	Sport Co-curriculum	1.6
UBI3262	Essential English 2	3.2
SBT3023	Principles of Biotechnology	4.8
SBK3013	Principles in Biochemistry	4.8
***	Minor 2	4.8
***	Minor 3	4.8
***	Foreign Language Level 2	3.2
	TOTAL	30.4

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 Method	4.8
***	Foreign Language Level 3	3.2
	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
	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
	TOTAL	24

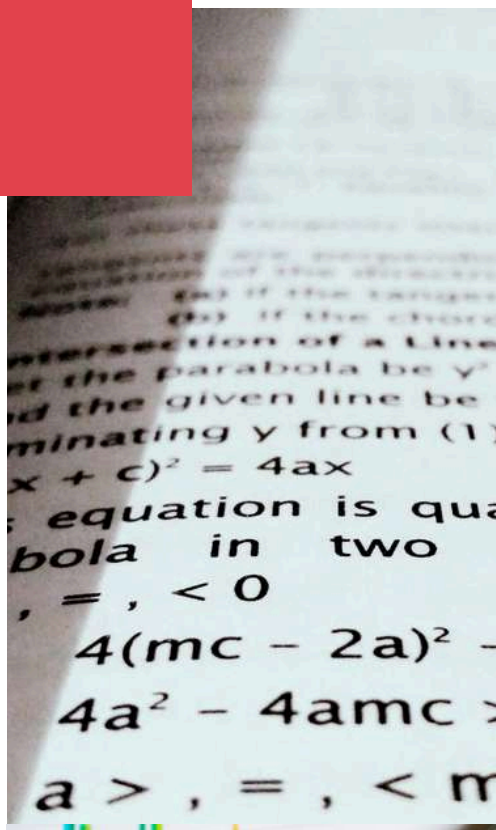
SEMESTER 8

KPR3012	Teaching Training Reflection Seminar	3.2
KPR3068	Teaching Practices	12.8
	TOTAL	16

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 2023/2024 (October 2023)

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

F

JABATAN FIZIK
(PHYSICS DEPARTMENT)

Directory of Expertise:

List of Academy Staffs of the Physics Department

Bachelor of Education (Physics) with Honours:

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

CONTACT ADDRESS:

Physics Department
Level 1, Block 4, Faculty of Science and Mathematics,
Sultan Azlan Shah Campus,
Universiti Pendidikan Sultan Idris,
35900 Tanjong Malim,
Perak.

JABATAN FIZIK
(PHYSICS DEPARTMENT)

KETUA JABATAN/
HEAD OF DEPARTMENT

Dr. Mohd. Faudzi Umar
Ph.D (UPM), M.Sc. (UKM), B.Sc. (Hons) (UKM)

: 05-4507388
: faudzi@fsmt.upsi.edu.my

Kepakaran/Expertise:
Theoretical Physics, Quantum Physics

Profesor Dr. Suriani Abu Bakar
Ph.D (UiTM), M.Sc. (UTM), B.Sc. (UTM)

: -
: suriani@fsmt.upsi.edu.my

Kepakaran/Expertise:
Carbon Nanotubes, Graphene, Oxide Nanostructure

Prof. Madya Dr. Faridah Lisa Supian
Ph.D (Sheffield), M.Sc. (USM), B.Sc. (Hons) (UKM)

:05-4507607
: faridah.lisa@fsmt.upsi.edu.my

Kepakaran/Expertise:
Chemical Physics, Langmuir-Blodgett, Calixarene, Polysiloxanes, Solid State Physic

Prof. Madya Ts. Dr. Shahrul Kadri Ayop
Ph.D (Hokkaido), M.Sc. (Leipzig), B.Sc. (Hons) (UTM)

: 05-4507529 / 7360
: shahrul.kadri@fsmt.upsi.edu.my

Kepakaran/Expertise:
Micromanipulation using Optical Tweezers, Physics Education

Prof. Madya Dr. Tho Siew Wei
Ph.D (HKIEd), M.Ed. (UPSI), B.Ed. (Hons) (UPSI)

: 05-4507679
: thosw@fsmt.upsi.edu.my

Kepakaran/Expertise:
Science Education (Physics), Educational Technology

Dr. Mohd Ikhwan Hadi Yaacob
Ph.D (USM), M.Sc. (UTM), B.Sc. (Hons) (UTM)

: 05-4507364
: ikhwan.hadi@fsmt.upsi.edu.my

Kepakaran/Expertise:
Sensor & Instrumentation, MEMS, Underwater Acoustics

Dr. Izan Roshawaty Mustapa
Ph.D (RMIT Univ), M.Sc. (UKM), B.Sc. (Hons) (UKM)

: 05-4507497
: roshawaty@fsmt.upsi.edu.my

Kepakaran/Expertise:
Material Physics: Physical and Mechanical Characterization (DMA, mT-DSC & Non-isothermal crystallization Kinetics DSC, TGA, WAXS); Morphology Study (SEM, EDX, POM)

Dr. Rosazley Ramly
Ph.D (UKM), B.Sc. (Hons) (UKM)

: 05-4507455
: rosazley@fsmt.upsi.edu.my

Kepakaran/Expertise:
Advanced Materials, Materials Science, Bio-based Materials,

Dr. Mohd Syahriman Mohd Azmi
Ph.D (UKM), M.Sc. (UKM), B.Ed (Hons) (UPSI), Dip. Mech. Eng. Tech. (UTHM)

: 05-4507494
: syahriman@fsmt.upsi.edu.my

Kepakaran/Expertise:
Solar Energy Technology, Energy Physics, Physics Education

Dr. Nurul Syafiqah Yap Abdullah
Ph.D (USM), M.Sc. (UTM), B.Sc. (Hons) (UTM)

: 05-4507382
: syafiqah@fsmt.upsi.edu.my

Kepakaran/Expertise:
Educational Physics, Physics Instrumentation and Interactive Learning

JABATAN FIZIK
(PHYSICS DEPARTMENT)

Ts. Dr. Mohd Norzaidi Mat Nawi
Ph.D (USM), B.Eng. (USM)

: 05-4507639
: norzaidi@fsmt.upsi.edu.my

Kepakaran/Expertise:
Fluidic based sensor, underwater flow sensor, MEMS

Ts. Dr. Muhammad Noorazlan Abd Azis
Ph.D (UPM), B.Sc with Ed. (Hons) (UPM)

: 05-4507726
: azlanmn@fsmt.upsi.edu.my

Kepakaran/Expertise:
Glass and Ceramics, Applied Optics, Nanoscience, Advanced Materials

Dr. Siti Nursaila Alias
Ph.D (USM), M.A. (USM), B.Ed. (Hons) (UPSI)

: 05-4507563
: anasaila@fsmt.upsi.edu.my

Kepakaran/Expertise:
(Science Education (Physics), Educational Games

Dr. Anis Nazihah Mat Daud
Ph.D (UTM), M.Sc. (UPSI), B.Ed. (Hons) (UPSI)

: 05-4507692
: anis.md@fsmt.upsi.edu.my

Kepakaran/Expertise:
Nondestructive Testing (Ultrasonics), Instrumentation, Science Education (Physics

Dr. Lilia Ellany Mohtar
Ph.D (UKM), M.Ed. (UTM), B.Sc. With Ed. (UTM)

: 05-4507822
: lilia@fsmt.upsi.edu.my

Kepakaran/Expertise:
Physics Education, Scientific Creativity, SEM-AMOS Modeling

Ts. Dr. Afiq Radwan
Ph.D. (UTM), B.Sc. (UTM)

: 05-4507396
: afiq@fsmt.upsi.edu.my

Kepakaran/Expertise:
Computational Physics, Density Functional Theory, Quantum Mechanics, Condensed Matter Physics, Solid State Physics

Dr. Anis Diyana Halim
Ph.D (UTM), M.Ed. (USM), B.Ed. (UKM)

: 05-4507350
: anis.diyana@fsmt.upsi.edu.my

Kepakaran/Expertise:
Physics Education

Dr. Muhamad Safuan Mat Yeng @ Mat Zin
Ph.D (UPSI), M.Sc. (UPSI), B.Sc. (Hons) (UiTM)

: -
: msafuan@fsmt.upsi.edu.my

Kepakaran/Expertise:
Non-Destructive Tool (Optical Tweezers), Renewable Energy (Wind Energy)

Pn. Mazlina Mat Darus
M.Sc. (UTM), B.Sc. (Hons) (UTM)

: 05-4507343
: mazlina.md@fsmt.upsi.edu.my

Kepakaran/Expertise:
Nanomaterials, Hybrid Nanocomposites, Photocatalyst

En. Ahmad Kamal Ariffin
M.Sc. (USM), B.Sc. (Kansas City), Dip.Ed. (UTM)

: 05-4507592
: ahmad.kamal@fsmt.upsi.edu.my

Kepakaran/Expertise:
High-Tc Superconductivity, X-rays Spectroscopy-XANES, EXAFS, Physics Education

JABATAN FIZIK
(PHYSICS DEPARTMENT)

En. Wan Zul Adli Wan Mokhtar
M.Sc. (UKM), B.Sc. (Hons) (UTM)

: 05-4507530
: zul.adli@fsmt.upsi.edu.my

Kepakaran/Expertise:
Solar Radio, Space Weather and Physics Education

En. Roszairi Haron
M.Sc. (UM), B.Sc. (Hons) (UM)

: 05-4507604
: roszairi@fsmt.upsi.edu.my

Kepakaran/Expertise:
Thin Films Technology, Hydrogenated Amorphous Silicon

Kakitangan Sokongan (Supporting Staffs)

En. Noradzman Hisham Shamsudin
Penolong Jurutera (Mekanikal) JA29

: 05-4507303
: noradzman@upsi.edu.my

En. Bisyr Asfar Ahmad Bakhtiar
Penolong Jurutera (Mekanikal) JA29

: 05-4507303
: bisyr@upsi.edu.my

Pn. Nashimatul Aliana Kamarul Bahrin
Pembantu Tadbir (P/O) N22

: 05-4507655
: aliana@upsi.edu.my

PROGRAM STRUCTURE B.Ed (Physics) AT12

Elective

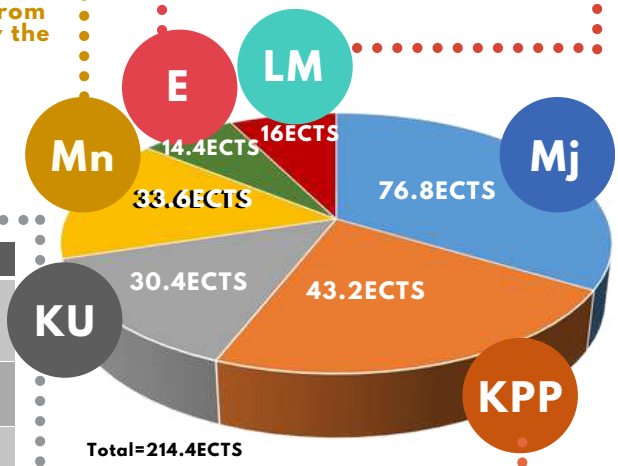
Students need to take Level 1, 2 and 3 of Foreign Language courses as well as 1 open elective course

Minor

Students of Bachelor of Education (Physics) with Honours may choose 21 credit hours of minor courses from any programs offered by the university

Teaching Practice

Course Code & Name		ECTS
KPR3068	Teaching Practice	12.8
KPR3072	Apprentice Teacher	3.2
	TOTAL	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	Enterpreneurial Culture	3.2
UBM3262	Malay DIscourse Skills	3.2
UPU3312	National Studies	3.2
***	Co-curriculum (Sport, Club/ Association & Uniformed Unit)	4.8
UPU2342	Integrity and Anti-Corruption	3.2
	TOTAL	30.4

University Course packages for international students

Course Code & Name		ECTS
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	Enterpreneurial Culture	3.2
UBM3362	Malay Communication 2	3.2
UPU3322	Malaysian Art and Culture Heritage	3.2
***	Co-curriculum (Sports, Clubs/Associations and Uniformed Units)	4.8
UPU2342	Integrity 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 Technolo	9.6
SFP3013	Implementation of Physics Teaching (MAJOR field)	4.8
******	Implementation of Minor Teaching (MINOR field)	4.8
KPR3012	Teaching Practice Reflection Seminar	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 a Grade C- and below.

Major

Course Code & Name		ECTS
*SFT3033	Mechanics	4.8
SFT3023	Vibrations, Waves and Optics	4.8
*SFT3013	Electro-magnetism	4.8
SFE3053	Electronics	4.8
SFG3023	Thermo-dynamics	4.8
SFT3053	Solid State Physics	4.8
SFT3113	Mathematics for Physics	4.8
SFT3063	Mathematical Physics	4.8
SFT3103	Nuclear and Particle Physics	4.8
SFU3063	Special Topics in Physics	4.8
SFE3043	Computer Programming and Interfacing	4.8
SFU3073	Astronomy	4.8
SFT3093	Modern & Quantum Physics	4.8
SPR3003	Educational Research Method	4.8
SFR3913	Final Year Project 1	4.8
SFR3923	Final Year Project 2	4.8
	TOTAL	76.8

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

COURSE DISTRIBUTION B.Ed (Physics) AT12

SUGGESTED COURSE REGISTRATION BY SEMESTER

SEMESTER 1

UPU3112/ *UBM2142	Philosophy and Current Issues/ *Malay Communication1	3.2
KPF3012	Education Development in Malaysia: Philosophy and Policy	3.2
SFT3033	Mechanics	4.8
SFT3013	Electromagnetism	4.8
SFU3073	Astronomy	4.8
SFT3113	Mathematics for Physics	4.8
	TOTAL	25.6

SEMESTER 2

UBM3262/ *UBM3362	Malay Discourse Skills/*Malay Communication 2	3.2
UPU2122	Appreciation of Ethics and Civilization	3.2
KPS3023	Sociology of Education	4.8
UPU3312/ *UPU3322	National studies/ *Malaysian Art and Culture Heritage	3.2
***	Club/Association Co-curriculum component	1.6
SFT3023	Vibrations, Waves and Optics	4.8
SFG3023	Thermodynamics	4.8
SFE3053	Electronics	4.8
	TOTAL	30.4

SEMESTER 3

KPP3023	Psychology in Education	4.8
UBI3282	Comprehensive English 1	3.2
***	Uniformed Unit Co-curriculum component	1.6
***	Foreign Language Level 1	3.2
SFE3043	Computer Programming dan Interfacing	4.8
SFT3063	Mathematical Physics	4.8
***	Minor 1	4.8
UPU3222	Enterpreneurial Culture	3.2
	TOTAL	30.4

SEMESTER 4

KPK3012	Inclusive education	3.2
UBI3292	Comprehensive English 2	3.2
***	Sport Co-curriculum component	1.6
***	Foreign Language Level 2	3.2
SFU3063	Special Topics In Physics	4.8
SFT3053	Solid State Physics	4.8
***	Minor 2	4.8
***	Minor 3	4.8
	TOTAL	30.4

COURSE DISTRIBUTION B.Ed (Physics) AT12

SEMESTER 5

KPD3036	Assessment Design and Teaching Technology	9.6
KPG3013	Professional Teachers	4.8
UPU2342	Integrity & Anti	3.2
SPR3003	Corruption Educational Research Method	4.8
***	Foreign Language Level 3	3.2
***	Minor 4	4.8
	TOTAL	30.4

SEMESTER 6

SFR3913	Final Year Project 1	4.8
SFT3093	Modern and Quantum Physics	4.8
***	Minor 5	4.8
***	Minor 6	4.8
***	Elective	4.8
	TOTAL	24

SEMESTER BREAK6

KPR3072	Apprentice Teacher	3.2
	4 Weeks	

SEMESTER 7

SFR3923	Final Year Project 2	4.8
SFT3103	Nuclear & Particle Physics	4.8
SFP3013	Implementation of Physics Teaching	4.8
***	Implementation of Minor Teaching	4.8
***	Minor 7	4.8
	TOTAL	24

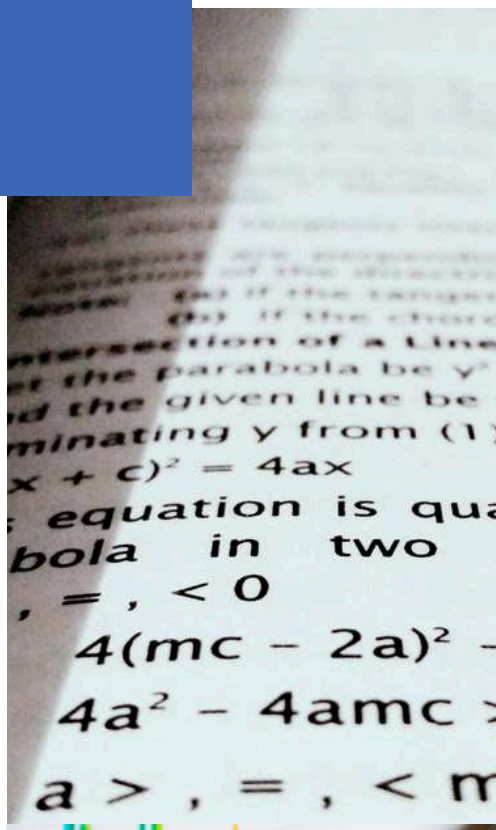
SEMESTER 8

KPR3068	Teaching practice	12.8
KPR3012	Teaching Practice Reflection Seminar	3.2
	TOTAL	16

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

TEACHING

TRAINING



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 2024/2025 (October 2024):

Program	Implementation	Duration	ECTS
Apprentice Teacher	Semester 6 Break	4 Weeks	3.2 ECTS
Teaching Training	Semester 8	16 Weeks	12.8ECTS
		JUMLAH	16 ECTS

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

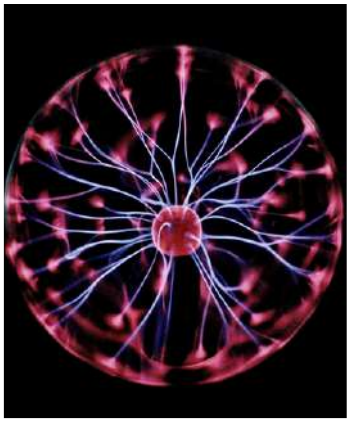
This course aims to give exposure to the basic concepts and principles of entrepreneurship to students so that they can generate interest in venturing into the field of entrepreneurship. This course focuses on the study of entrepreneurship and business skills with an emphasis on the implementation of 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 muti-racial and ethnic communities that are part of Malaysian'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 ecquire knowledge and skills as well as foster attitudes in carrying out their responsibilities effectively in the teaching profesion.

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 discuses current issues, the characteristics of special education students and discuses teaching strategies and techniques through an inclusive approach. The course also discuses 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 1

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.

KPR3012 TEACHING PRACTICE REFLECTION SEMINAR

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.

SFP3013 PELAKSANAAN PENGAJARAN FIZIK

Kursus ini bertujuan mengukuhkan kemahiran pelajar merancang dan melaksanakan pengajaran melalui mikro dan makropengajaran dalam aspek utama proses pengajaran: (a) menyatakan hasil pembelajaran, (b) memilih dan merancang bahan dan urutan pengajaran, (c) memilih dan melaksanakan kaedah, strategi dan teknik pengajaran yang sesuai, (d) menyedia dan menggunakan media dan teknologi pengajaran dan pembelajaran yang sesuai, (e) menyedia, memilih dan menggunakan kaedah dan alat pentaksiran yang sesuai bagi menilai hasil pembelajaran dalam mata pelajaran Fizik, dan (f) merancang Kajian Tindakan.

SINOPSIS KURSUS

Kursus Profesional Pendidikan

KPP

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

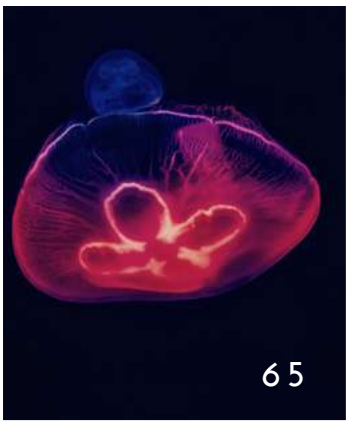
This course discusses the anatomical and morphological structure of plants including descriptions of cells, tissues and organs that constitute the entire plant organization. Primary and secondary growth in plants will also be clearly explained. In addition, the variety of morphological and anatomical 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 aerobics 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

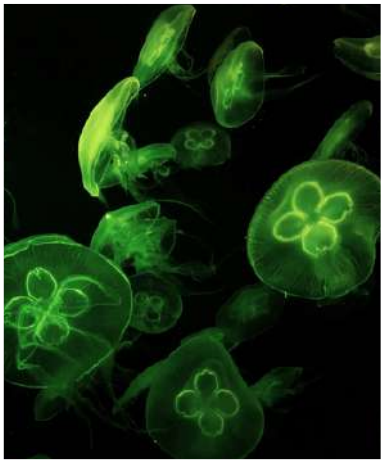
Kursus ini membincangkan konsep asas dalam bioteknologi. Pelajar juga dibekalkan dengan pemahaman tentang teknologi DNA rekombinan melalui teori dan amali serta aplikasinya dalam pelbagai bidang bioteknologi. Kemajuan dalam bioteknologi yang menyumbang kepada kesejahteraan umum juga akan dibincangkan.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

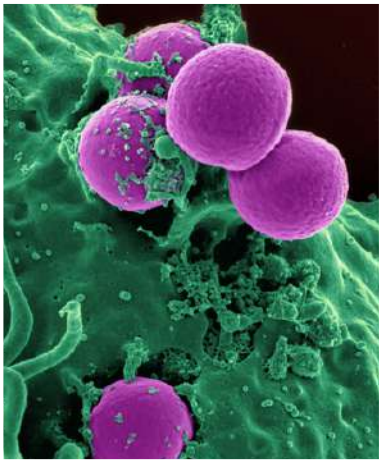
SPR3003 EDUCATIONAL RESEARCH METHOD

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 ”

SINOPSIS KURSUS

ISMP (Fizik)

AT12

SFT3033 MECHANICS

This is a calculus based elementary mechanics which introduces fundamental concept in mechanics as applied to one dimension motion, Newton's laws of motion, work, kinetic and potential energy, momentum, impulse, rotational motion, elasticity and fluid mechanics

SFT3013 ELECTROMAGNETISM

The course focuses on basic principles and knowledge of electricity and magnetism. Topics discussed in this course are electric charges, Coulomb's law, electric field, electric potential, capacitance, Ohm's law, electromotive force (EMF), direct and alternating current, series and parallel circuit, Kirchoff's circuit laws, magnetic force, magnetic fields and inductance.

SFG3023 THERMODYNAMICS

This course discusses the fundamental concepts of thermodynamics. This course consists of following topics; temperature and heat, thermal properties of matter, heat capacities of gases, First Law of Thermodynamics, Second Law of Thermodynamics and entropy.

SFT3113 MATHEMATICS FOR PHYSICS

This course is designed to provide an understanding of many of the mathematical concepts and methods toward problem-solving in physics. The topics covered are elementary methods, differentiation, integration and differential equations and probability. The application of statistics in physics education research is also discussed.

SFU3063 SPECIAL TOPICS IN PHYSICS

This course exposes students with the latest development in the field of physics such as teaching and learning physics, fundamental and applied physics. This course also explores current issues in the following topics: teaching and learning physics, energy source, cosmology, introduction to material science and engineering, and materials and society.

SFT3023 VIBRATION, WAVES AND OPTICS

This course covers vibrations, waves and optics concepts such as simple harmonic motion, damped oscillations, forced oscillations, mechanical waves and electromagnetic waves. The nature of waves including refraction, dispersion, scattering, polarization, interference and diffraction are also discussed. Discussion are extended to the application of the concepts in optical instruments such as microscope, telescope and thin film.

SFE3053 ELECTRONICS

This course provides fundamental knowledge on semiconductor device characteristics, testing, their practical circuit applications, and an introduction to digital electronics. It establishes a foundation for understanding the operation and problem-solving in electronic circuits. Practical circuit examples and troubleshooting exercises are incorporated throughout the semester.

SFT3053 SOLID STATE PHYSICS

This course discusses the basic concepts in solid-state physics such as structure of solids, binding energy, lattice vibrations and the properties associated with the solids. The emphasis is on thermal, electrical, magnetic, dielectric and optical properties.

SFT3063 MATHEMATICAL PHYSICS

This course covers the fundamental mathematics used in advanced physics. Topics include vector analysis, differential equations, complex variables, and Fourier analysis.

SFE3043 COMPUTER PROGRAMMING AND INTERFACING

The course covers basic principles of computer programming and interfacing that include programming language for microcontroller, and applications of electronics for interfacing and computerized measurement system.

SFT3093 MODERN AND QUANTUM PHYSICS

This course exposes students to the basic concepts in Physics Education research. This course focuses on the processes and procedures in Physics Education research such as problem identification, objective and research question, literature review, research design, analysis, data interpretation and report writing. Students will be evaluated through research proposal writing and presentation, attitude and personality assessments.

SFR3913 FINAL YEAR PROJECT 1

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

SFU3073 ASTRONOMY

This course discusses the solar system, stars, galaxies and the universe. The course also discusses special topics such as space weather and observational equipment in astronomy

SFT3103 NUCLEAR AND PARTICLE PHYSICS

This course has two parts; nuclear and particle physics. For the nuclear physics, the topics covered in this part are the properties of nuclei, nuclear stability & radioactivity, nuclear reactions, fission & fusion and nucleus models. In particle physics, the students are exposed to fundamental particles & interactions, particle accelerators & detectors and the Standard Model.

SFR3923 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.

CONTACT ADDRESS

Faculty of Science and Mathematics (FSM)

ADDRESS:

Faculty of Science and Mathematics
Level 1, Block 01
Sultan Azlan Shah Campus,
Universiti Pendidikan Sultan Idris
35900 Tanjong Malim
Perak Darul Ridzuan

Tel : 015-4879 7205/7519/ 7673 / 7526

Fax : 015-4879 7296

Email : info@fsmt.upsi.edu.my

Website : http://fsmt.upsi.edu.my

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