

<b>BACHELOR OF SCIENCE WITH EDUCATION (BIOLOGY) ACADEMIC SESSION 2021/2022 (141 CREDITS)</b>			
<b>UNIVERSITY COURSES (22 Credits)</b>			
Course Code	Course Name		Credit
GLT <sup>xxxx</sup>	English Course (subject to MUET bands)		6
GIG1012	Philosophy and Current Issues		2
GIG1013	Appreciation of Ethics and Civilisations		2
GIG1003	Basic Entrepreneurship Culture		2
GIG1004	Information Literacy		2
GIG1005	Social Engagement		2
GKA/GKI/GKK/GKP/ GKS/GKU	Co-Curriculum		2
GIA-GIX <sup>xxxx</sup>	External Faculty Elective courses (KELF)		4
<b>FACULTY CORE COURSES (8 Credits) [TF]</b>			
Course Code	Course Name		Credit
SIX1001	Introduction to Science and Technology Studies		3
SIX1002	Ethics and Safety		2
SIX1003	Biostatistics		3
<b>FACULTY ELECTIVE COURSES (8 Credits) [EF]</b>			
<b>Courses offered by other Institute/Department in Faculty of Science</b> (Refer to the List of Courses offered by various Institute/Department in Faculty of Science other than Institute of Biological Sciences)			
Institute/ Department	Course Code	Course Title	Credit
Dept. of Chemistry	SIX1009	Basic Chemistry	2
Dept. of Geology	SIX1010	Earth's Ecosystem	2
Dept. of Physics	SIX1011	Contemporary Physics	2
Dept. of Science and Technology Studies	SIX1012	Logical Thinking in Science	3
Institute of Mathematical Sciences	SIX1013	Fundamentals of Advanced Mathematics	4
<b>PROGRAMME COURSES (103 Credits)</b>			
<b>(I) MAJOR PROGRAMME CORE COURSES (66 Credits) [TP]</b>			
Course Code	Course Name	Pre-Requisite(s)	Credit
<b>LEVEL 1 (14 Credits)</b>			
SIJ1001	Life Processes		2
SIL1001	Cell Biology		2
SIE1001	Organism Biology		2
SIH1001	Population Biology		2
SIH1003	Plant and Environment		2
SIK1001	Biology Practical		2*
SIO1001	Basic Physics		2
<b>LEVEL 2 (41 Credits)</b>			

SIV2001	Fundamentals of Bioinformatics	SIL1001 and SIK1001	3*
SIK2004	Human and Animal Physiology	SIJ1001	3
SIK2001	Human Anatomy	SIJ1001 and SIL1001	3*
SIK2003	General Biochemistry	SIJ1001	3
SIK2007	Histology	SIJ1001 and SIK1001	3*
SIL2002	Cytogenetics	SIL1001	3*
SIL2009	Recombinant DNA Technology	SIL1001	3*
SIR2008	Microbial Physiology and Biochemistry	SIJ1001	3*
SIR2004	General Microbiology	SIJ1001	3*
SIH2004	Environmental Pollution		2
SIH2010	Limnology		3*
SIO2003	Higher Plant Physiology	SIJ1001, SIL1001 and SIK1001	3*
SIO2004	Cell and Tissue Culture	SIL1001 and SIK1001	3*
SIO2011	Plant Breeding	SIJ1001	3*
<b>LEVEL 3 (7 Credits)</b>			
SIH3003	Ecology		3*
SIH3008	Sustainable Development		2
SIK3004	Biology of Hormones	SIK2004	2
<b>LEVEL 4 (4 Credits)</b>			
SIP4007	Scientific Project	Completed minimum 42 credit major program courses	4
<b>(II) MINOR PROGRAMME COURSES (37 CREDITS)</b>			
<b>Course Code</b>	<b>Course Name</b>	<b>Pre-Requisite(s)</b>	<b>Credit</b>
<b>COMPULSORY COURSES (19 CREDITS)</b>			
PIX1002	Basic of Physical Education, Health and Co-curriculum		3
SIP1001	Integrating STEM in Science and Mathematics Education		3
PIX2001	Educational Psychology		3
SIP2001	School Experience		2
SIP3001	Teaching Practice I	SIP2001	4
SIP4001	Teaching Practice II	Completed University Courses and Minor (with not more than 12 credit hours remaining)	4

<b>BIOLOGY TEACHING METHOD (12 Credits)</b>			
SIP1006	Cognition in Biology Education		2
SIP1007	History, Philosophy and Curriculum in Biology Education		2
SIP2006	Technology in Biology Education		2
SIP2007	Teaching and Assessment of Abstract Concept in Biology		2
SIP3005	Teaching and Assessment of Field Work in Biology		2
SIP3006	Teaching and Assessment of Practical Work in Biology		2
<b>SCIENCE TEACHING METHOD (6 Credits)</b>			
SIP4004	Teaching and Assessment of Chemistry Components in Science		3
SIP4006	Teaching and Assessment of Physics Component in Science		3
<b>Note:</b> * With practical component.			

**LIST OF COURSES ACCORDING TO SEMESTER  
(PLANNING OF COURSES)  
BACHELOR OF SCIENCE WITH EDUCATION  
(BIOLOGY)**

COMPONENT	SEMESTER 1		SEMESTER 2		TOTAL CREDITS
	COURSE	CREDIT	COURSE	CREDIT	
University Courses	GLT <sup>xxxx</sup>	3	GLT <sup>xxxx</sup>	3	14
	GIG1012	2	GIG1013	2	
	-	-	GIG1004	2	
	-	-	GIG1005	2	
Faculty Core Courses	SIX1001	3	SIX1003	3	8
	SIX1002	2	-	-	
Programme Courses	SIK1001	2	SIJ1001	2	16
	SIL1001	2	SIH1003	2	
	SIP1001	3	SIP1006	2	
	PIX1002	3	-	-	
<b>TOTAL CREDITS</b>		<b>20</b>		<b>18</b>	<b>38</b>

COMPONENT	SEMESTER 3		SEMESTER 4		TOTAL CREDITS
	COURSE	CREDIT	COURSE	CREDIT	
University Courses	GIG1003	2	GKA/GKI/ GKK/GKP/ GKS/GKU	2	8
	GIA-GIX <sup>xxxx</sup>	4	-	-	
Programme Courses	SIH1001	2	SIO1001	2	24
	SIE1001	2	SIO2003	3	
	SIP1007	2	SIK2001	3	
	SIP2006	2	SIK2007	3	
	-	-	PIX2001	3	
	-	-	SIP2007	2	
<b>TOTAL CREDITS</b>		<b>14</b>		<b>18</b>	<b>32</b>

COMPONENT	SPECIAL SEMESTER (YEAR 2)		TOTAL CREDITS
	COURSE	CREDIT	
Programme Courses	SIP2001 School Experience	2	2
<b>TOTAL CREDIT</b>		<b>2</b>	<b>2</b>

COMPONENT	SEMESTER 5		SEMESTER 6		TOTAL CREDITS
	COURSE	CREDIT	COURSE	CREDIT	
Faculty Elective Courses	Faculty Elective Courses	2	Faculty Elective Courses	2	4
Programme Courses	SIL2002	3	SIK2003	3	27
	SIL2009	3	SIK2004	3	
	SIH2004	2	SIO2011	3	
	SIV2001	3	SIH2010	3	
	SIP3005	2	SIP3006	2	
<b>TOTAL CREDITS</b>		<b>15</b>		<b>16</b>	<b>31</b>

COMPONENT	SPECIAL SEMESTER (YEAR 3)		TOTAL CREDIT
	COURSE	CREDIT	
Programme Courses	SIP3001 Teaching Practice I	4	4
<b>TOTAL CREDITS</b>		<b>4</b>	<b>4</b>

COMPONENT	SEMESTER 7		SEMESTER 8		TOTAL CREDITS
	COURSE	CREDIT	COURSE	CREDIT	
Faculty Elective Courses	-	-	Faculty Elective Courses	4	4
Programme Courses	SIO2004	3	SIH3008	2	26
	SIR2004	3	SIP4006	3	
	SIR2008	3	SIP4007	4	
	SIH3003	3	-	-	
	SIK3004	2	-	-	
	SIP4004	3	-	-	
<b>TOTAL CREDITS</b>		17		13	30

COMPONENT	SPECIAL SEMESTER (YEAR 4)		TOTAL CREDIT
	COURSE	CREDIT	
Programme Core Courses	SIP4001 Teaching Practice II	4	4
<b>TOTAL CREDITS</b>		4	4

<b>BACHELOR OF SCIENCE WITH EDUCATION (MATHEMATICS) ACADEMIC SESSION 2021/2022 (141 CREDITS)</b>			
<b>UNIVERSITY COURSES (22 Credits)</b>			
<b>Course Code</b>	<b>Course Name</b>		<b>Credit</b>
GLT <sub>xxxx</sub>	English Course (subject to MUET bands)		6
GIG1012	Philosophy and Current Issues		2
GIG1013	Appreciation of Ethics and Civilisations		2
GIG1003	Basic Entrepreneurship Culture		2
GIG1004	Information Literacy		2
GIG1005	Social Engagement		2
GKA/GKI/GKK/ GKP/GKS/GKU	Co-Curriculum		2
GIA-GIX <sup>xxxx</sup>	External Faculty Elective courses (KELF)		4
<b>FACULTY CORE COURSES (8 Credits) [TF]</b>			
<b>Course Code</b>	<b>Course Name</b>		<b>Credit</b>
SIX1001	Introduction to Science and Technology Studies		3
SIX1002	Ethics and Safety		2
SIX1004	Statistics		3
<b>FACULTY ELECTIVE COURSES (8 Credits) [EF]</b> Courses offered by other Institute/Department in Faculty of Science (Refer to the List of Courses offered by various Institute/Department in Faculty of Science other than Institute of Mathematical Sciences)			
<b>Institute/ Department</b>	<b>Course Code</b>	<b>Course Title</b>	<b>Credit</b>
Institute of Biological Sciences	SIX1006	Malaysian Flora	3
	SIX1007	Malaysian Fauna	3
	SIX1008	Bio Computing	2
Dept. of Chemistry	SIX1009	Basic Chemistry	2
Dept. of Geology	SIX1010	Earth's Ecosystem	2
Dept. of Physics	SIX1011	Contemporary Physics	2
Dept. of Science and Technology Studies	SIX1012	Logical Thinking in Science	3
<b>PROGRAMME COURSES (103 Credits)</b>			
<b>(I) MAJOR PROGRAMME CORE COURSES (66 Credits) [TP]</b>			
<b>Course Code</b>	<b>Course Name</b>	<b>Pre-Requisite</b>	<b>Credit</b>
<b>LEVEL 1 (22 Credits)</b>			
SIM1001	Basic Mathematics		4

SIM1002	Calculus I		4
SIN1002	Introduction to Worksheet		2
SIN1003	Mathematical Methods I	SIM1002	4
SIM1003	Calculus II	SIM1002	4
SIT1001	Probability and Statistics I	SIM1002	4
<b>LEVEL 2 (36 Credits)</b>			
SIM2001	Advanced Calculus	SIM1003	4
SIM2002	Linear Algebra	SIM1001	4
SIM2003	Introduction to Combinatorics	SIM1001	4
SIN2001	Mathematical Methods II	SIN1003	4
SIN2002	Structured Programming	SIM1002	4
SIN2003	Basic Operational Research	SIM1001 and SIN1002	4
SIN2005	System of Differential Equations	SIN1003	4
SIQ2003	Financial Mathematics and Derivatives	SIM1002	4
SIT2001	Probability and Statistics II	SIT1001	4
<b>LEVEL 3 (4 Credits)</b>			
SIM3003	Number Theory	SIM2002	4
<b>LEVEL 4 (4 Credits)</b>			
SIP4007	Scientific Project	Completed minimum 42 credit major program courses	4
<b>(II) MINOR PROGRAMME COURSES (37 CREDITS)</b>			
<b>Course Code</b>	<b>Course Name</b>	<b>Pre-Requisite</b>	<b>Credit</b>
<b>COMPULSORY COURSES (19 CREDITS)</b>			
PIX1002	Basic of Physical Education, Health and Co-curriculum		3
SIP1001	Integrating STEM in Science and Mathematics Education		3
PIX2001	Educational Psychology		3
SIP2001	School Experience		2
SIP3001	Teaching Practice I	SIP2001	4



SIP4001	Teaching Practice II	Completed University Courses and Minor (with not more than 12 credit hours remaining)	4
<b>MATHEMATICS TEACHING METHOD (12 Credits)</b>			
SIP1002	Assessment in Mathematics Education		2
SIP1003	Psychology in Learning Mathematics		2
SIP2002	Technology in Mathematics Education		2
SIP2003	Teaching of Numbers		2
SIP2004	Teaching of Algebra		2
SIP3002	Teaching of Geometry		2
<b>ADVANCED MATHEMATICS TEACHING METHOD (6 Credits)</b>			
SIP3003	Teaching of Probability and Statistics		2
SIP4002	Teaching of Discrete Mathematics		2
SIP4003	Teaching of Calculus		2
<b>Note:</b> * With practical component.			

**LIST OF COURSES ACCORDING TO SEMESTER  
(PLANNING OF COURSES)  
BACHELOR OF SCIENCE WITH EDUCATION  
(MATHEMATICS)**

COMPONENT	SEMESTER 1		SEMESTER 2		TOTAL CREDITS
	COURSE	CREDIT	COURSE	CREDIT	
University Courses	GLT <sup>xxxx</sup>	3	GLT <sup>xxxx</sup>	3	14
	GIG1012	2	GIG1013	2	
	-	-	GIG1004	2	
	-	-	GIG1005	2	
Faculty Core Courses	-	-	SIX1001	3	8
	-	-	SIX1002	2	
	-	-	SIX1004	3	
Programme Core Courses	SIM1001	4	SIP1003	2	16
	SIM1002	4	-	-	
	PIX1002	3	-	-	
	SIP1001	3	-	-	
<b>TOTAL CREDITS</b>		<b>19</b>		<b>19</b>	<b>38</b>

COMPONENT	SEMESTER 3		SEMESTER 4		TOTAL CREDITS
	COURSE	CREDIT	COURSE	CREDIT	
University Courses	GIG1003	2	GKA/GKI/ GKK/GKP/ GKS/GKU	2	8
	GIA-GIX <sup>xxxx</sup> (Except with code GIS <sup>xxxx</sup> courses)	4	-	-	
Programme Core Courses	SIN1002	2	SIN1003	4	18
	SIM1003	4	SIT2001	4	
	SIT1001	4	-	-	
	SIP1002	2	PIX2001	3	11
	SIP2003	2	SIP2002	2	
	-	-	SIP2004	2	
<b>TOTAL CREDITS</b>		<b>20</b>		<b>17</b>	<b>37</b>

COMPONENT	SPECIAL SEMESTER (YEAR 2)		TOTAL CREDITS
	COURSE	CREDIT	
Programme Core Courses	SIP2001 School Experience	2	2

COMPONENT	SEMESTER 5		SEMESTER 6		TOTAL CREDITS
	COURSE	CREDIT	COURSE	CREDIT	
Faculty Elective Courses	Faculty elective course	5	Faculty elective course	3	8
Programme Core Courses	SIM2003	4	SIM2001	4	28
	SIN2001	4	SIM2002	4	
	SIQ2003	4	SIN2002	4	
	SIP3002	2	SIP3003	2	
<b>TOTAL CREDITS</b>		<b>19</b>		<b>17</b>	<b>36</b>

COMPONENT	SPECIAL SEMESTER (YEAR 3)		TOTAL CREDITS
	COURSE	CREDIT	
Programme Core Courses	SIP3001 Teaching Practice I	4	4

COMPONENT	SEMESTER 7		SEMESTER 8		TOTAL CREDITS
	COURSE	CREDIT	COURSE	CREDIT	
Programme Core Courses	SIN2003	4	SIP4007 Scientific Project	4	20
	SIN2005	4			
	SIM3003	4			
	-	-			
	SIP4002	2			
	SIP4003	2			
<b>TOTAL CREDITS</b>		<b>16</b>		<b>4</b>	<b>20</b>

COMPONENT	SPECIAL SEMESTER (YEAR 4)		TOTAL CREDITS
	COURSE	CREDITS	
Programme Core Courses	SIP4001 Teaching Practice II	4	<b>4</b>

<b>BACHELOR OF SCIENCE WITH EDUCATION (CHEMISTRY) ACADEMIC SESSION 2021/2022 (141 CREDITS)</b>			
<b>UNIVERSITY COURSES (22 Credits)</b>			
<b>Course Code</b>	<b>Course Name</b>		<b>Credit</b>
GLT <sup>xxxx</sup>	English Course (subject to MUET bands)		6
GIG1012	Philosophy and Current Issues		2
GIG1013	Appreciation of Ethics and Civilisations		2
GIG1003	Basic Entrepreneurship Culture		2
GIG1004	Information Literacy		2
GIG1005	Social Engagement		2
GKA/GKI/GK K/GKP/GKS/ GKU	Co-Curriculum		2
GIA-GIX <sup>xxx</sup>	External Faculty Elective courses (KELF)		4
<b>FACULTY CORE COURSES (8 Credits) [TF]</b>			
<b>Course Code</b>	<b>Course Name</b>		<b>Credit</b>
SIX1001	Introduction to Science and Technology Studies		3
SIX1002	Ethics and Safety		2
SIX1004	Statistics		3
<b>FACULTY ELECTIVE COURSES (8 Credits) [EF]</b> <b>Courses offered by other Institute/Department in Faculty of Science</b> (Refer to the List of Courses offered by various Institute/Department in Faculty of Science other than Department of Chemistry)			
<b>Institute/ Department</b>	<b>Course Code</b>	<b>Course Title</b>	<b>Credit</b>
Institute of Biological Sciences	SIX1006	Malaysian Flora	3
	SIX1007	Malaysian Fauna	3
	SIX1008	Biocomputing	2
Dept. of Geology	SIX1010	Earth's Ecosystem	2
Dept. of Physics	SIX1011	Contemporary Physics	2
Dept. of Science and Technology Studies	SIX1012	Logical Thinking in Science	3
Institute of Mathematical Sciences	SIX1013	Fundamentals of Advanced Mathematics	4
<b>PROGRAMME COURSES (103 Credits)</b>			
<b>(I) MAJOR PROGRAMME CORE COURSES (66 Credits) [TP]</b>			
<b>Course Code</b>	<b>Course Name</b>	<b>Pre-Requisite(s)</b>	<b>Credit</b>
<b>LEVEL 1 (17 Credits)</b>			
SIC1001	Principles of Chemistry		2
SIC1002	Inorganic Chemistry I		4*
SIC1003	Organic Chemistry I		4*
SIC1004	Physical Chemistry I		4*

SIC1005	Basic Mathematics for Chemistry		3
<b>LEVEL 2 (33 Credits)</b>			
SIC2001	Inorganic Chemistry II	SIC1001 and SIC1002	4*
SIC2002	Organic Chemistry II	SIC1001 and SIC1003 This course is to be taken together with SIC2007 and SIC2008	4*
SIC2003	Physical Chemistry II	SIC1001, SIC1004 and SIC1005	4*
SIC2004	Analytical Chemistry I	SIC1001 and SIC1002	3*
SIC2005	Polymer Chemistry I	SIC1003 and SIC1004	3*
SIC2006	Molecular Spectroscopy	SIC1001, SIC1004 and SIC1005	3
SIC2007	Spectroscopic Methods in Organic Chemistry	SIC1003 This course is taken together with SIC2002	2
SIC2008	Biomolecules	SIC1003 This course is to be taken together with SIC2002	2
SIC2009	Introduction to Environmental Chemistry	SIC1002 and SIC1003	2
SIC2011	General Industrial Chemistry	SIC1001	2
SIC2012	Nuclear Chemistry	SIC1001 and SIC1002	2
SIC2013	Solid State Chemistry	SIC1002 and SIC1004	2
<b>LEVEL 3 (12 Credits)</b>			
SIC3001	Inorganic Chemistry III	SIC2001	4*
SIC3002	Organic Chemistry III	SIC2002	4*
SIC3003	Physical Chemistry III	SIC2003	4*
<b>LEVEL 4 (4 Credits)</b>			
SIP4007	Scientific Project	Completed minimum 42 credit major program courses	4
<b>(I) MINOR PROGRAMME COURSES (37 CREDITS)</b>			
Course Code	Course Name	Pre-Requisite(s)	Credit
<b>COMPULSORY COURSES (19 CREDITS)</b>			
PIX1002	Basic of Physical Education, Health and Co-curriculum		3
SIP1001	Integrating STEM in Science and Mathematics Education		3
PIX2001	Educational Psychology		3
SIP2001	School Experience		2
SIP3001	Teaching Practice I	SIP2001	4
SIP4001	Teaching Practice II	Completed University Courses and Minor (with not more than 12 credit hours remaining)	4

<b>CHEMISTRY TEACHING METHOD (12 Credits)</b>			
SIP1004	Trends and Issues in Chemistry Education		2
SIP1005	Practical Work in Chemistry		2
SIP2005	Teaching in Physical Chemistry	SIP1004	2
SIP2010	Teaching in Inorganic Chemistry	SIP1004	2
SIP2011	Teaching in Organic Chemistry	SIP1004	2
SIP3004	Assessment in Chemistry Education		2
<b>SCIENCE TEACHING METHOD (6 Credits)</b>			
SIP4005	Teaching and Assessment of Biology Components in Science		3
SIP4006	Teaching and Assessment of Physics Component in Science		3
<b>Note:</b> * With practical component.			

**LIST OF COURSES ACCORDING TO SEMESTER  
(PLANNING OF COURSES)  
BACHELOR OF SCIENCE WITH EDUCATION  
(CHEMISTRY)**

COMPONENT	SEMESTER 1		SEMESTER 2		TOTAL CREDITS
	COURSE	CREDIT	COURSE	CREDIT	
University Courses	GLT <sup>xxxx</sup>	3	GLT <sup>xxxx</sup>	3	14
	GIG1012	2	GIG1013	2	
	-	-	GIG1004	2	
	-	-	GIG1005	2	
Faculty Core Courses	SIX1001	3	-	-	5
	SIX1002	2	-	-	
Programme Courses	SIC1005	3	SIC1001	2	17
	PIX1002	3	SIC1002	4*	
	SIP1001	3	SIP1004	2	
<b>TOTAL CREDITS</b>		<b>19</b>		<b>17</b>	<b>36</b>



COMPONENT	SEMESTER 3		SEMESTER 4		TOTAL CREDITS
	COURSE	CREDIT	COURSE	CREDIT	
University Courses	GIG1003	2	GKA/GKI/ GKK/GKP/ GKS/GKU	2	8
	GIA-GIX <sup>XXXX</sup>	4	-	-	
Faculty Core Courses	-	-	SIX1004	3	3
Faculty Elective Courses	-	-	Faculty Elective Courses	5	5
Programme Courses	SIC1004	4*	SIC1003	4*	19
	SIC2011	2	PIX2001	3	
	SIP1005	2	SIP2010	2	
	SIP2005	2	-	-	
<b>TOTAL CREDITS</b>		<b>16</b>		<b>19</b>	<b>35</b>

COMPONENT	SPECIAL SEMESTER (YEAR 2)		TOTAL CREDITS
	COURSE	CREDIT	
Programme Core Courses	SIP2001 : School Experience	2	2
<b>TOTAL CREDIT</b>		<b>2</b>	<b>2</b>

COMPONENT	SEMESTER 5		SEMESTER 6		TOTAL CREDITS
	COURSE	CREDIT	COURSE	CREDIT	
Faculty Elective Courses	Faculty Elective Courses	3	-	-	3
Programme Courses	SIC2002	4*	SIC2001	4*	32
	SIC2004	3*	SIC2003	4*	
	SIC2007	2	SIC2005	3*	
	SIC2008	2	SIC2012	2	
	SIC2009	2	SIC2013	2	
	SIP2011	2	SIP3004	2	
<b>TOTAL CREDIT</b>		<b>18</b>		<b>17</b>	<b>35</b>

COMPONENT	SPECIAL SEMESTER (YEAR 3)		TOTAL CREDIT
	COURSE	CREDIT	
Programme Courses	SIP3001 Teaching Practice I	4	4
<b>TOTAL CREDIT</b>		<b>4</b>	<b>4</b>

COMPONENT	SEMESTER 7		SEMESTER 8		TOTAL CREDITS
	COURSE	CREDIT	COURSE	CREDIT	
University Courses	-	-	-	-	0
Faculty Core Courses	-	-	-	-	0
Faculty Elective Courses	-	-	-	-	0
Programme Courses	SIC2006	3	SIC3002	4*	25
	SIC3001	4*	SIP4007	4	
	SIC3003	4*	SIP4006	3	
	SIP4005	3			
<b>TOTAL CREDIT</b>		<b>14</b>		<b>11</b>	<b>25</b>

COMPONENT	SPECIAL SEMESTER (YEAR 4)		TOTAL CREDIT
	COURSE	CREDIT	
Programme Core Courses	SIP4001 Teaching Practice II	4	4
<b>TOTAL CREDIT</b>		<b>4</b>	<b>4</b>

<b>BACHELOR OF SCIENCE WITH EDUCATION (PHYSICS) ACADEMIC SESSION 2021/2022 (141 CREDITS)</b>			
<b>UNIVERSITY COURSES (22 Credits)</b>			
<b>Course Code</b>	<b>Course Name</b>		<b>Credit</b>
GLT <sup>xxxx</sup>	English Course (subject to MUET bands)		6
GIG1001	The Islamic and Asian Civilization		2
GIG1012	Philosophy and Current Issues		2
GIG1013	Appreciation of Ethics and Civilisations		2
GIG1004	Information Literacy		2
GIG1005	Social Engagement		2
GKA/GKI/GKK/GKP/ GKS/GKU	Co-Curriculum		2
GIA-GIX <sup>xxxx</sup>	External Faculty Elective courses (KELF)		4
<b>FACULTY CORE COURSES (8 Credits) [TF]</b>			
<b>Course Code</b>	<b>Course Name</b>		<b>Credit</b>
SIX1001	Introduction to Science and Technology Studies		3
SIX1002	Ethics and Safety		2
SIX1004	Statistics		3
<b>FACULTY ELECTIVE COURSES (8 Credits) [EF]</b>			
<b>Courses offered by other Institute/Department in Faculty of Science</b> (Refer to the List of Courses offered by various Institute/Department in Faculty of Science other than Department of Physics)			
<b>Institute/ Department</b>	<b>Course Code</b>	<b>Course Title</b>	<b>Credit</b>
Institute of Biological Sciences	SIX1006	Malaysian Flora	3
	SIX1007	Malaysian Fauna	3
	SIX1008	Biocomputing	2
Dept. of Chemistry	SIX1009	Basic Chemistry	2
Dept. of Geology	SIX1010	Earth's Ecosystem	2
Dept. of Science and Technology Studies	SIX1012	Logical Thinking in Science	3
Institute of Mathematical Sciences	SIX1013	Fundamentals of Advanced Mathematics	4
<b>PROGRAMME COURSES (103 Credits)</b>			
<b>(I) MAJOR PROGRAMME CORE COURSES (66 Credits) [TP]</b>			
<b>Course Code</b>	<b>Course Name</b>	<b>Pre-Requisite</b>	<b>Credit</b>
<b>LEVEL 1 (13 Credits)</b>			
SIF1001	Mathematical Methods I		3
SIF1002	Vibrations and Waves I		2

SIF1003	Thermal Physics		2
SIF1004	Modern Physics		2
SIF1005	Electronics I		2
SIF1006	Practical Physics I		2*
<b>LEVEL 2 (40 Credits)</b>			
SIF2001	Quantum Mechanics I	SIF1001 and SIF1004	3
SIF2002	Electromagnetism I	SIF1001 and SIF1002	3
SIF2003	Electromagnetism II	SIF2002	3
SIF2004	Mechanics	SIF1001	3
SIF2005	Statistical Physics	SIF1001 and SIF1003	3
SIF2006	Optics	SIF1001 and SIF1002	2
SIF2007	Numerical and Computational Methods	SIF1001	3
SIF2009	Electronics Practical	SIF1005	2*
SIF2010	Physics Practical II	SIF1006	2*
SIF2011	Applied Physics Practical	SIF1006	4*
SIF2012	Modern Optics and Laser Physics	SIF1002	3
SIF2014	Cosmology and General Relativity	SIF1004	3
SIF2015	Astrophysics	SIF2014	3
SIF2016	Materials Science	SIF1003 & SIF1004	3
<b>LEVEL 3 (9 Credits)</b>			
SIF3001	Nuclear Physics	SIF2001	3
SIF3002	Atomic and Molecular Physics	SIF2001	3
SIF3003	Solid State Physics	SIF2001 & SIF2005	3
<b>LEVEL 4 (4 Credits)</b>			
SIP4007	Scientific Project	Completed minimum 42 credit major program courses	4
<b>(II) MINOR PROGRAMME COURSES (37 CREDITS)</b>			
<b>Course Code</b>	<b>Course Name</b>	<b>Pre-Requisite</b>	<b>Credit</b>
<b>COMPULSORY COURSES (19 CREDITS)</b>			

PIX1002	Basic of Physical Education, Health and Co-curriculum		3
PIX2001	Educational Psychology		3
SIP1001	Integrating STEM in Science and Mathematics Education		3
SIP2001	School Experience		2
SIP3001	Teaching Practice I	SIP2001	4
SIP4001	Teaching Practice II	Completed University Courses and Minor (with not more than 12 credit hours remaining)	4
<b>PHYSICS TEACHING METHOD (12 Credits)</b>			
SIP1008	Teaching of Matter, Force and Energy		2
SIP1009	Teaching of Optics and Sound		2
SIP2008	Teaching of Electricity		2
SIP2009	Curriculum In Physics Education		2
SIP3007	Technology in Physics Education		2
SIP3008	Assessment Challenges in Physics Education		2
<b>SCIENCE TEACHING METHOD (6 Credits)</b>			
SIP4005	Teaching and Assessment of Biology Components in Science		3
SIP4004	Teaching and Assessment of Chemistry Components in Science		3
<b>Note:</b> * With practical component.			

**LIST OF COURSES ACCORDING TO SEMESTER  
(PLANNING OF COURSES)  
BACHELOR OF SCIENCE WITH EDUCATION (PHYSICS)**

COMPONENT	SEMESTER 1		SEMESTER 2		TOTAL CREDITS
	COURSE	CREDIT	COURSE	CREDIT	
University Courses	GLT <sup>xxxx</sup>	3	GLT <sup>xxxx</sup>	3	14
	GIG1012	2	GIG1013	2	
	-	-	GIG1004	2	
			GIG1005	2	
Faculty Core Courses	SIX1001	3	SIX1004	3	8
	SIX1002	2	-		
Programme Courses	SIF1002	2	SIF1001	3	15
	SIP1001	3	SIF1003	2	
	PIX1002	3	SIP2009	2	
<b>TOTAL CREDITS</b>		<b>18</b>		<b>19</b>	<b>37</b>

COMPONENT	SEMESTER 3		SEMESTER 4		TOTAL CREDITS
	COURSE	CREDIT	COURSE	CREDIT	
University Courses	GIG1003	2	GKA/GKI/GKK/GKP/ GKS/GKU	2	8
	GIA-GIX <sup>xxxx</sup>	4			
Programme Courses	SIF1004	2	SIF2001	3	26
	SIF1005	2	SIF2002	3	
	SIF1006	2*	SIF2004	3	
	SIF2006	2	SIF2005	3	
	SIP1008	2	SIP2008	2	
	SIP1009	2	-	-	
<b>TOTAL CREDITS</b>		<b>18</b>		<b>16</b>	<b>34</b>

COMPONENT	SPECIAL SEMESTER (YEAR 2)		TOTAL CREDITS
	COURSE	CREDIT	
Programme Courses	SIP2001 School Experience	2	2
<b>TOTAL CREDIT</b>		<b>2</b>	<b>2</b>

*Faculty of Science Booklet, Academic Session 2021/2022*

COMPONENT	SEMESTER 5		SEMESTER 6		TOTAL CREDITS
	COURSE	CREDIT	COURSE	CREDIT	
Faculty Elective Courses	Faculty Elective Courses	5	Faculty Elective Courses	3	8
Programme Courses	SIF2003	3	SIF2011*	4	33
	SIF2007	3	SIF2012	3	
	SIF2009	2*	SIF2015	3	
	SIF2010	2*	SIF2016	3	
	SIF2014	3	SIP3008	2	
	SIP3007	2	PIX2001	3	
<b>TOTAL CREDITS</b>		<b>20</b>		<b>21</b>	<b>41</b>

COMPONENT	SPECIAL SEMESTER (YEAR 3)		TOTAL CREDITS
	COURSE	CREDIT	
Programme Courses	SIP3001 Teaching Practice I	4	4
<b>TOTAL CREDIT</b>		<b>4</b>	<b>4</b>

COMPONENT	SEMESTER 7		SEMESTER 8		TOTAL CREDITS
	COURSE	CREDIT	COURSE	CREDIT	
Programme Courses	SIF3001	3	SIP4004	3	19
	SIF3002	3	SIP4007	4	
	SIF3003	3	-	-	
	SIP4005	3	-	-	
<b>TOTAL CREDITS</b>		<b>12</b>		<b>7</b>	<b>19</b>

COMPONENT	SPECIAL SEMESTER (YEAR 4)		TOTAL CREDITS
	COURSE	CREDIT	
Programme Core Courses	SIP4001 Teaching Practice II	4	4
<b>TOTAL CREDIT</b>		<b>4</b>	<b>4</b>