

4 YEARS PROGRAMME COURSE STRUCTURE (8 SEMESTERS)

	Year 1		Year 2		Year 3		Year 4	
	Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8

HS03 CONSERVATION BIOLOGY

Course Structure Session 2019/2020	UNIVERSITY COURSES PROMOTION OF KNOWLEDGE LANGUAGE LEARNING (12 credit hours)	UW00202 Islamic and Asia Civilization (TITAS) UEXXXX2 Soft Skills I UK00X02 Soft Skills II (6 Credit Hours)	UW00102 Ethnic Relationship (HE) UC00X02 Soft Skills III (4 Credit Hours)	UW00302 Basic Entrepreneurship (APK) (2 Credit Hours)					
	UNIVERSITY COURSES LANGUAGE LEARNING (8 Credit Hours)	UB00202 MUET Band 1,2 & 3 (Marks 140-159) Foreign Language Level I MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)	UB00102 MUET Band 1,2 & 3 (Marks 140-159) Foreign Language Level II MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)	UB00702 MUET Band 1,2 & 3 (Marks 140-159) Foreign Language Level III MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)	UB00302 MUET Band 1,2 & 3 (Marks 140-159) UB00402/ UB00502/ UB00602/ UB02002 MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)				
	UNIVERSITY COURSES CO-CURRICULUM (3 Credit Hours)	EXXXXX3 or EXXXXX1 (3/1 Credit Hours)	EXXXXX1 (0/1 Credit Hours)	EXXXXX1 (0/1 Credit Hours)	EXXXXX1 (0/1 Credit Hours)	EXXXXX1 (0/1 Credit Hours)	EXXXXX1 (0/1 Credit Hours)		

4 YEARS PROGRAMME COURSE STRUCTURE (8 SEMESTERS)

	Year 1		Year 2		Year 3		Year 4	
	Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8

HS03 CONSERVATION BIOLOGY

Course Structure Session 2019/2020	FACULTY COURSES (11 Credit Hours)	ST00302 Earth Sciences and Planets ST00502 Basic Chemistry (4 Credit Hours)	ST00202 Basic Statistics (2 Credit Hours)	SR01102 Industrial Revolution and Research Methodology (2 Credit Hours)	ST01003 Biometry and Experimental Design (3 Credit Hours)				
	PROGRAMME COURSES (82 Credit Hours)	SB13103 Introduction to Conservation Biology (3 Credit Hours)	SB13203 Microbial Diversity SB13403 Animal Diversity SB13603 Cell Biology & Genetic (9 Credit Hours)	SB23103 Entomology SB23303 Population Biology & Evolution SB23503 Plant Diversity (9 Credit Hours)	SB24203 Systematics SB24403 Ecology SB23602 Preservation & Collection Management SB24002 Biogeography (10 Credit Hours)	SB33102 GIS in Conservation Biology SB33303 Biochemistry SB33502 Ecological Methods SB33703 Policies and Legislations of Biodiversity Conservation SB23803 Aquatic Ecology (13 Credit Hours)	SB33203 Scientific Project I SB33403 Molecular Biology in Conservation SB33603 Plant Physiology SB33803 Animal Physiology SB34002 Fieldwork (14 Credit Hours)	SB43106 Scientific Project II SB43002 Sustainable Environmental Development SB43503 Wildlife Management SB43703 Genetic for Conservation SB43902 Selected Topics in Conservation Biology (16 Credit Hours)	SB43208 Industrial Training (8 Credit Hours)

4 YEARS PROGRAMME COURSE STRUCTURE (8 SEMESTERS)

	Year 1		Year 2		Year 3		Year 4	
	Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8

HS03 CONSERVATION BIOLOGY

	ELECTIVES (8 Credit Hours)				SB24202 Nature Tourism Products SB24402 Nature Interpretation SB24602 Introduction to Environmental Assessment (2 Credit Hours)	SB34102 Ethnobiology SB34302 Primate Conservation SB34502 Instrumental Methods (2 Credit Hours)	SB34202 Natural Product Chemistry SB34402 Tissue Culture Principles SB34602 Wildlife Captive Management (2 Credit Hours)	SB44102 Canopy Biology SB44302 Protected Areas Management (2 Credit Hours)	
TOTAL CREDIT HOURS (124 Credit Hours)	18/19	17/18	15/16	17/18	15/16	16/17	18/18	8/8	

4 YEARS PROGRAMME COURSE STRUCTURE (8 SEMESTERS)

	Year 1		Year 2		Year 3		Year 4	
	Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8

HS07 INDUSTRIAL CHEMISTRY

Course Structure Session 2019/2020	UNIVERSITY COURSES PROMOTION OF KNOWLEDGE LANGUAGE LEARNING (12 credit hours)	UW00202 Islamic and Asia Civilization (TITAS) UEXXXX2 Soft Skills I UK00X02 Soft Skills II (6 Credit Hours)	UW00102 Ethnic Relationship (HE) UC00X02 Soft Skills III (4 Credit Hours)	UW00302 Basic Entrepreneurship (APK) (2 Credit Hours)					
	UNIVERSITY COURSES LANGUAGE LEARNING (8 Credit Hours)	UB00202 MUET Band 1,2 & 3 (Marks 140-159) Foreign Language Level I MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)	UB00102 MUET Band 1,2 & 3 (Marks 140-159) Foreign Language Level II MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)	UB00702 MUET Band 1,2 & 3 (Marks 140-159) Foreign Language Level III MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)	UB00302 MUET Band 1,2 & 3 (Marks 140-159) UB00402/ UB00502/ UB00602/ UB02002 MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)				
	UNIVERSITY CORE CO-CURRICULUM (3 Credit Hours)	EXXXXX3 (3 Credit Hours)							

4 YEARS PROGRAMME COURSE STRUCTURE (8 SEMESTERS)

	Year 1		Year 2		Year 3		Year 4	
	Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8

HS07 INDUSTRIAL CHEMISTRY

Course Structure Session 2019/2020	FACULTY CORE (8 Credit Hours)		ST00602 Basic Physics (2 Credit Hours)	ST00202 Basic Statistics (2 Credit Hours)	ST00803 Statistical Programming Package (3 Credit Hours)	SR01102 Industrial Revolution and Research Methodology (2 Credit Hours)	ST00402 Basic Biology (2 Credit Hours)		
	PROGRAMME CORE (87 Credit Hours)	SK12101 Physical Chemistry Practical I SK12301 Organic Chemistry Practical I SK12503 Physical Chemistry I SK12703 Organic Chemistry I SK12902 Laboratory Safety And Accreditation (10 Credit Hours)	SK12201 Analytical Chemistry Practical I SK12401 Inorganic Chemistry Practical I SK12603 Analytical Chemistry I SK12803 Inorganic Chemistry I (8 credit hours)	SK22101 Physical Chemistry Practical II SK22301 Organic Chemistry Practical II SK22503 Physical Chemistry II SK22703 Organic Chemistry II SK22903 Environmental Chemistry For Industry (11 Credit Hours)	SK22201 Analytical Chemistry Practical II SK22401 Inorganic Chemistry Practical II SK22603 Analytical Chemistry II SK22803 Inorganic Chemistry II SK23203 Materials Chemistry (11 Credit Hours)	SK32103 Separation Technology and Instrumentation SK32303 Organic Spectroscopy SK32503 Industrial Inorganic Chemistry Processes SK32703 Principles and Technology for Resource Recovery SK32903 Nanotechnology (15 Credit Hours)	SK34203 Project Scientific I SK32603 Principles and Technology of Chemical Processes SK32803 Industrial Organic Chemistry Processes SK33803 Polymer Chemistry and Technology (12 Credit Hours)	SK40106 Project Scientific II SK40303 Environmental Technology For Industry SK40503 Principles and Technology in Food Industry (12 Credit Hours)	SK40208 Industrial Training (8 Credit Hours)

4 YEARS PROGRAMME COURSE STRUCTURE (8 SEMESTERS)

	Year 1		Year 2		Year 3		Year 4	
	Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8

HS07 INDUSTRIAL CHEMISTRY

ELECTIVES ELECTIVE (6 Credit Hours)							*SK33203 Natural Products Chemistry And Drugs Discovery *SK33403 Residue And Pesticide Analysis *SK33603 Electrochemical Technology *SK34003 Advanced Inorganic Materials (3 Credit Hours)	*SK40703 Forensic Chemistry *SK41303 Principles and Technology of Biochemical Processes *SK41503 Applied Physical Chemistry *SK41703 Biofuel Technology (3 Credit Hours)	
TOTAL CREDIT HOURS (127 Credit Hours)	19	18	17	16	17	17	15	8	

*Choose TWO (2) courses only; ONE (1) for every semester
CREDIT HOURS ENROLLED = 127

4 YEARS PROGRAMME COURSE STRUCTURE (8 SEMESTERS)

	Year 1		Year 2		Year 3		Year 4	
	Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8

HS08 MATHEMATICS WITH ECONOMICS

Course Structure Session 2019/2020	UNIVERSITY COURSES PROMOTION OF KNOWLEDGE LANGUAGE LEARNING (12 credit hours)	UW00202 Islamic and Asia Civilization (TITAS) UEXXXX2 Soft Skills I UK00X02 Soft Skills II (6 Credit Hours)	UW00102 Ethnic Relationship (HE) UC00X02 Soft Skills III (4 Credit Hours)	UW00302 Basic Entrepreneurship (APK) (2 Credit Hours)					
	UNIVERSITY COURSES LANGUAGE LEARNING (8 Credit Hours)	UB00202 MUET Band 1,2 & 3 (Marks 140-159) Foreign Language Level I MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)	UB00102 MUET Band 1,2 & 3 (Marks 140-159) Foreign Language Level II MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)	UB00702 MUET Band 1,2 & 3 (Marks 140-159) Foreign Language Level III MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)	UB00302 MUET Band 1,2 & 3 (Marks 140-159) UB00402/ UB00502/ UB00602/ UB02002 MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)				
	UNIVERSITY COURSES CO-CURRICULUM (3 Credit Hours)	EXXXXX3 or EXXXXX1 (3/1 Credit Hours)	EXXXXX1 (0/1 Credit Hours)	EXXXXX1 (0/1 Credit Hours)	EXXXXX1 (0/1 Credit Hours)	EXXXXX1 (0/1 Credit Hours)	EXXXXX1 (0/1 Credit Hours)		

4 YEARS PROGRAMME COURSE STRUCTURE (8 SEMESTERS)

	Year 1		Year 2		Year 3		Year 4	
	Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8

HS08 MATHEMATICS WITH ECONOMICS

Course Structure Session 2019/2020	FACULTY COURSES (7 Credit Hours)	ST00702 Computer Programming and Simulation (2 Credit Hours)		ST00803 Statistical Programming Package (3 Credit Hours)		SR01102 Industrial Revolution and Research Methodology (2 Credit Hours)			
	PROGRAMME COURSES (63 Credit Hours)	SM13103 Mathematics I (3 Credit Hours)	SM13203 Mathematics II SM13403 Object Oriented Programming (6 Credit Hours)	SM23103 Linear Algebra (3 Credit Hours)	SM23203 Real Analysis SM23403 Statistical Analysis SM23603 Operational Research (9 Credit Hours)	SM33103 Differential Equation SM33302 Numerical Calculation SM33503 Advanced Mathematics I (8 Credit Hours)	SM33202 Numerical Method SM33403 Complex Variables Calculus SM33603 Optimization SM33803 Advanced Mathematics II SM34203 Scientific Project I (14 Credit Hours)	SM43103 Mathematical Modelling SM43303 Decision Science SM40106 Scientific Project II (12 Credit Hours)	SM40208 Industrial Training (8 Credit Hours)

4 YEARS PROGRAMME COURSE STRUCTURE (8 SEMESTERS)

	Year 1		Year 2		Year 3		Year 4	
	Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8

HS08 MATHEMATICS WITH ECONOMICS

	MINOR / ELECTIVES (30 Credit Hours)	SJ13103 Economic Statistics (3 Credit Hours)	SJ13203 Microeconomics I (3 Credit Hours)	SJ23103 Microeconomics II SJ23303 Macroeconomics I (6 Credit Hours)	SJ23203 Financial Management I SJ23403 Macroeconomics II (6 Credit Hours)	SJ33103 Financial Management II SJ33303 Financial Mathematics (6 Credit Hours)	SJ33203 Econometrics (3 Credit Hours)	SJ43103 International Economics (3 Credit Hours)	
TOTAL CREDIT HOURS (123 Credit Hours)		19/18	15/16	16/17	17/18	16/17	17/18	15	8

4 YEARS PROGRAMME COURSE STRUCTURE (8 SEMESTERS)

	Year 1		Year 2		Year 3		Year 4	
	Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8

HS09 MATHEMATICS WITH COMPUTER GRAPHIC

Course Structure Session 2019/2020	UNIVERSITY COURSES PROMOTION OF KNOWLEDGE LANGUAGE LEARNING (12 credit hours)	UW00202 Islamic and Asia Civilization (TITAS) UEXXXX2 Soft Skills I UK00X02 Soft Skills II (6 Credit Hours)	UW00102 Ethnic Relationship (HE) UC00X02 Soft Skills III (4 Credit Hours)	UW00302 Basic Entrepreneurship (APK) (2 Credit Hours)					
	UNIVERSITY COURSES LANGUAGE LEARNING (8 Credit Hours)	UB00202 MUET Band 1,2 & 3 (Marks 140-159) Foreign Language Level I MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)	UB00102 MUET Band 1,2 & 3 (Marks 140-159) Foreign Language Level II MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)	UB00702 MUET Band 1,2 & 3 (Marks 140-159) Foreign Language Level III MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)	UB00302 MUET Band 1,2 & 3 (Marks 140-159) UB00402/ UB00502/ UB00602/ UB02002 MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)				
	UNIVERSITY CORE CO-CURRICULUM (3 Credit Hours)	EXXXXX3 or EXXXXX1 (3/1 Credit Hours)	EXXXXX1 (0/1 Credit Hours)	EXXXXX1 (0/1 Credit Hours)	EXXXXX1 (0/1 Credit Hours)	EXXXXX1 (0/1 Credit Hours)	EXXXXX1 (0/1 Credit Hours)		

4 YEARS PROGRAMME COURSE STRUCTURE (8 SEMESTERS)

	Year 1		Year 2		Year 3		Year 4	
	Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8

HS09 MATHEMATICS WITH COMPUTER GRAPHIC

Course Structure Session 2019/2020	FACULTY CORE (5 Credit Hours)		ST00803 Statistics Package Programming (3 Credit Hours)			SR01102 Industrial Revolution and Research Methodology (2 Credit Hours)			
	PROGRAMME CORE (68 Credit Hours)	SW12103 Calculus I (3 Credit Hours)	SW12203 Calculus II SW12403 Linear Algebra (6 Credit Hours)	SW22103 Statistics SW22303 Discrete Mathematics SW22503 Mathematics for Computer Graphics (9 Credit Hours)	SW22203 Real Analysis SW22403 Differential Equation SW22603 Cryptography (9 Credit Hours)	SW32103 Numerical Method SW32303 Calculus Complex Variables (6 Credit Hours)	SW34203 Scientific Project I SW32203 Mathematical Modeling SW32403 Advance Calculus SW32603 Mathematical Programming (12 Credit Hours)	SW40106 Scientific Project II SW40303 Control Mathematics SW40503 Computational Geometry SW40703 Fuzzy Mathematics (15 Credit Hours)	SW40208 Industrial Training (8 Credit Hours)

4 YEARS PROGRAMME COURSE STRUCTURE (8 SEMESTERS)

	Year 1		Year 2		Year 3		Year 4	
	Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8

HS09 MATHEMATICS WITH COMPUTER GRAPHIC

	MINOR (31 Credit Hours)	SC12102 Programming Logic and Algorithm Design SC12302 Computer Organization and Architecture (4 Credit Hours)	SC12203 Object Oriented Programming (3 Credit Hours)	SC22303 Data Structures (3 Credit Hours)	SC22203 Database SC22403 Fundamental of Computer Graphics (6 Credit Hours)	SC32103 Real Time Graphics SC32303 Image Processing SC32503 System Analysis and Design (9 Credit Hours)	SC32203 Computer Interface Programming (3 Credit Hours)	SC40103 Scientific Data Visualization (3 Credit Hours)	
TOTAL CREDIT HOURS (127 Credit Hours)		16/18	18/19	16/17	17/18	17/18	15/16	18	8

4 YEARS PROGRAMME COURSE STRUCTURE (8 SEMESTERS)

	Year 1		Year 2		Year 3		Year 4	
	Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8

HS11 ENVIRONMENTAL SCIENCE

Course Structure Session 2019/2020	UNIVERSITY COURSES PROMOTION OF KNOWLEDGE LANGUAGE LEARNING (12 credit hours)	UW00202 Islamic and Asia Civilization (TITAS) UEXXXX2 Soft Skills I UK00X02 Soft Skills II (6 Credit Hours)	UW00102 Ethnic Relationship (HE) UC00X02 Soft Skills III (4 Credit Hours)	UW00302 Basic Entrepreneurship (APK) (2 Credit Hours)					
	UNIVERSITY COURSES LANGUAGE LEARNING (8 Credit Hours)	UB00202 MUET Band 1,2 & 3 (Marks 140-159) Foreign Language Level I MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)	UB00102 MUET Band 1,2 & 3 (Marks 140-159) Foreign Language Level II MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)	UB00702 MUET Band 1,2 & 3 (Marks 140-159) Foreign Language Level III MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)	UB00302 MUET Band 1,2 & 3 (Marks 140-159) UB00402/ UB00502/ UB00602/ UB02002 MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)				
	UNIVERSITY CORE CO-CURRICULUM (3 Credit Hours)	EXXXXX3 or EXXXXX1 (3/1 Credit Hours)	EXXXXX1 (0/1 Credit Hours)	EXXXXX1 (0/1 Credit Hours)	EXXXXX1 (0/1 Credit Hours)	EXXXXX1 (0/1 Credit Hours)	EXXXXX1 (0/1 Credit Hours)		

4 YEARS PROGRAMME COURSE STRUCTURE (8 SEMESTERS)

	Year 1		Year 2		Year 3		Year 4	
	Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8

HS11 ENVIRONMENTAL SCIENCE

Course Structure Session 2019/2020	FACULTY CORE (10 Credit Hours)	ST00402 Fundamental of Biology (2 Credit Hours)	ST00302 Earth Science & Planetary (2 Credit Hours)	ST00502 Basic Chemistry (2 Credit Hours)	ST00602 Fundamental of Physics (2 Credit Hours)		SR01102 Industrial Revolution and Research Methodology (2 Credit Hours)		
	PROGRAMME'S CORE (78 Credit Hours)	SS11102 Basics For Environmental Science SS11303 Environmental Health (5 Credit Hours)	SS11203 Environmental Ecology & Microbiology SS11403 Environmental Soil Science SS11603 Environmental Laws (9 Credit Hours)	SS21103 Environmental Statistics SS21303 Air Quality & Noise Analysis SS21503 Environmental Remote Sensing (9 Credit Hours)	SS21203 Water Quality Analysis SS21403 Environmental Chemistry & Chemodynamics SS21603 Energy Resources SS21802 Meteorology & Climate Change (11 Credit Hours)	SS32103 Pollution Control Technology SS32303 Environmental Modeling SS32503 Environmental Toxicology SS32703 Environmental Hydrology (12 Credit Hours)	SS32202 Groundwater Pollution SS32403 Resources & Environmental Management SS32603 Geographical Information System SS32801 Environmental Issues & Society SS34203 Scientific Project I (12 Credit Hours)	SS40106 Scientific Project II SS40303 Solid & Toxic Waste Management SS40503 Environmental Monitoring & Assessment (12 Credit Hours)	SS40208 Industrial Training (8 Credit Hours)

4 YEARS PROGRAMME COURSE STRUCTURE (8 SEMESTERS)

	Year 1		Year 2		Year 3		Year 4	
	Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8

HS11 ENVIRONMENTAL SCIENCE

	ELECTIVE (15 Credit Hours)			SS21703 Environmental Tourism (3 Credit Hours)	SS22003 Water Supply (3 Credit Hours)	SS32903 Environmental Risk Assessment (3 Credit Hours)	SS33003 Environmental Instrumentation (3 Credit Hours)	SS40703 Environmental Economics (3 Credit Hours)	
TOTAL CREDIT HOURS (126 Credit Hours)	18	17	18	18	15	17	15	8	

4 YEARS PROGRAMME COURSE STRUCTURE (8 SEMESTERS)

	Year 1		Year 2		Year 3		Year 4	
	Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8

HS21 GEOLOGY

Course Structure Session 2019/2020	UNIVERSITY COURSES PROMOTION OF KNOWLEDGE LANGUAGE LEARNING (12 credit hours)	UW00202 Islamic and Asia Civilization (TITAS) UEXXX02 Soft Skills I UK00X02 Soft Skills II (6 Credit Hours)	UW00102 Ethnic Relationship (HE) UC00X02 Soft Skills III (4 Credit Hours)	UW00302 Basic Entrepreneurship (APK) (2 Credit Hours)					
	UNIVERSITY COURSES LANGUAGE LEARNING (8 Credit Hours)	UB00202 MUET Band 1,2 & 3 (Marks 140-159) Foreign Language Level I MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)	UB00102 MUET Band 1,2 & 3 (Marks 140-159) Foreign Language Level II MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)	UB00702 MUET Band 1,2 & 3 (Marks 140-159) Foreign Language Level III MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)	UB00302 MUET Band 1,2 & 3 (Marks 140-159) UB00402/ UB00502/ UB00602/ UB02002 MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)				
	UNIVERSITY CORE CO-CURRICULUM (3 Credit Hours)	EXXXXX3 or EXXXXX1 (3/1 Credit Hours)	EXXXXX1 (0/1 Credit Hours)	EXXXXX1 (0/1 Credit Hours)	EXXXXX1 (0/1 Credit Hours)	EXXXXX1 (0/1 Credit Hours)	EXXXXX1 (0/1 Credit Hours)		

4 YEARS PROGRAMME COURSE STRUCTURE (8 SEMESTERS)

	Year 1		Year 2		Year 3		Year 4	
	Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8

HS21 GEOLOGY								
Course Structure Session 2019/2020	FACULTY CORE (10 Credit Hours)		ST00102 Basic Mathematics (2 Credit Hours)	ST00602 Basic Physics (2 Credit Hours)	ST00202 Basic Statistics ST00502 Basic Chemistry (4 Credit Hours)	SR01102 Industrial Revolution and Research Methodology (2 Credit Hours)		
	PROGRAMMES CORE (76 Credit Hours)	SG13103 Basic Geology I SG13302 Geomorphology SG13501 Geological Map (6 Credit Hours)	SG13203 Basic Geology II SG13403 Paleontology SG13603 Structural Geology (9 Credit Hours)	SG23103 Mineralogy And Petrography SG23303 GIS and Remote Sensing SG23503 Sedimentology and Depositional Environment SG23703 Geochemistry (12 Credit Hours)	SG23203 Historical Geology and Stratigraphy SG23403 Petrology SG23602 Malaysian Geology and Regional Geology SG23803 Mapping Technique (11 Credit Hours)	SG33103 Geophysics I SG33303 Engineering Geology I SG33503 Economic Geology (9 Credit Hours)	SG33203 Petroleum Geology SG33403 Environmental Geology SG33603 Soil Science SG34203 Scientific Project I (12 Credit Hours)	SG40106 Scientific Project II SG43103 Geological Interpretation (9 Credit Hours)

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	Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8

HS21 GEOLOGY

	ELECTIVE (17 Credit Hours)					SG33703 Hydrogeology SG33902 Geotourism (5 Credit Hours)	SG33803 Engineering Geology II SG34003 Geophysics II (6 Credit Hours)	SG43303 Formation Evaluation SG43503 Geohazard (6 Credit Hours)	
TOTAL CREDIT HOURS (126 Credit Hours)	17	17	18	17	16	18	15	8	

4 YEARS PROGRAMME COURSE STRUCTURE (8 SEMESTERS)

	Year 1		Year 2		Year 3		Year 4	
	Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8

HS22 PHYSICS WITH ELECTRONICS

Course Structure Session 2019/2020	UNIVERSITY COURSES PROMOTION OF KNOWLEDGE LANGUAGE LEARNING (12 Credit Hours)	UW00202 Islamic and Asian Civilisation (TITAS) UE0XX02 Critical Thinking and Malaysian Ethos UK0XX02 Contemporary Malaysian and International Affairs Knowledge Component (6 Credit Hours)	UW00102 Ethnic Relations UC0XX02 Career Foundation and Communication Skills Component (4 Credit Hours)	UW00302 Basic Entrepreneurial Acculturation (2 Credit Hours)						
	UNIVERSITY COURSES LANGUAGE LEARNING (8 Credit Hours)	UB00202 MUET Band 1,2 & 3 (Marks 140-159) Foreign Language Level I MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)	UB00102 MUET Band 1,2 & 3 (Marks 140-159) Foreign Language Level II MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)	UB00702 MUET Band 1,2 & 3 (Marks 140-159) Foreign Language Level III MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)	UB00302 MUET Band 1,2 & 3 (Marks 140-159) UB00402/ UB00502/ UB00602/ UB02002 MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)					

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	Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8

HS22 PHYSICS WITH ELECTRONICS

Course Structure Session 2019/2020	UNIVERSITY CORE CO-CURRICULUM (3 Credit Hours)	EXXXXX3 or EXXXXX1 (3/1 Credit Hours)	EXXXXX1 (0/1 Credit Hours)	EXXXXX1 (0/1 Credit Hours)					
	FACULTY CORE (10 Credit Hours)	ST00102 Basic Mathematics (2 Credit Hours)	ST00202 Basic Statistics (2 Credit Hours)	ST00502 Basic Chemistry (2 Credit Hours)	SR01102 Industrial Revolution and Research Methodology (2 Credit Hours)	ST00702 Computer Programming and Simulations (2 Credit Hours)			
	PROGRAMME CORE (60 Credit Hours)	SF12103 Physics I (Mechanics) SF12303 Physics II (Electricity And Magnetism) (6 Credit Hours)	SF12201 Physics Practical I SF 12403 Physics III (wave and optics) SF12603 Mathematical Methods In Physics I (7 Credit Hours)	SF22101 Physics Practical II SF22303 Modern Physics SF22503 Mathematical Methods In Physics II (7 Credit Hours)	SF22201 Physics Practical III SF22403 Physic Methods For Experiment And Measurement SF22603 Quantum Physics SF22803 Thermodynamics Physics (10 Credit Hours)	SF32101 Physics Practical VI SF32303 Statistical Physics SF32503 Solid State Physics (7 Credit Hours)	SF34203 Scientific Project I SF32203 Laser Physics (6 Credit Hours)	SF40106 Scientific Project II SF40303 Instrumentation Physics (9 Credit Hours)	SF40208 Industrial Training (8 Credit Hours)

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HS22 PHYSICS WITH ELECTRONICS

Course Structure Session 2019/2020	MINOR (26 Credit Hours)			SE22103 Basic Electronics (3 Credit Hours)	SE22203 Digital Electronics (3 Credit Hours)	SF32103 Computational Physics and Modelling SE32303 Advanced Electronics SE32503 Optoelectronics (9 Credit Hours)	SE32203 Semiconductor Physics SE32403 Communications Electronics SE32602 Special Topics In Physic With Electronic (8 Credit Hours)	SE40103 Semiconductor Technology (3 Credit Hours)	
	ELECTIVE (9 Credit Hours)						*SE32603 Noise and Vibrations *SE32803 X-Ray Crystallography *SE33003 Nuclear Physics (3 Credit Hours)	SJ00023 Business Project Proposal *SE40503 Microprocessor *SE40703 Electroacoustic *SE40903 Digital Signal Processing (6 Credit Hours)	

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		Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8

HS22 PHYSICS WITH ELECTRONICS								
TOTAL CREDIT HOURS (128 Credit Hours)	19	16	16/17	17	18	17	18	8

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	Year 1		Year 2		Year 3		Year 4	
	Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8

HS27 AQUACULTURE

Course Structure Session 2019/2020	UNIVERSITY COURSES PROMOTION OF KNOWLEDGE LANGUAGE LEARNING (12 Credit Hours)	UW00202 Islamic and Asia Civilization (TITAS) UEXXXX2 Soft Skills I UK00X02 Soft Skills II (6 Credit Hours)	UW00102 Ethnic Relationship (HE) UC00X02 Soft Skills III (4 Credit Hours)	UW00302 Basic Entrepreneurship (APK) (2 Credit Hours)					
	UNIVERSITY COURSES LANGUAGE LEARNING (8 Credit Hours)	UB00202 MUET Band 1,2 & 3 (Marks 140-159) Foreign Language Level I MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)	UB00102 MUET Band 1,2 & 3 (Marks 140-159) Foreign Language Level II MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)	UB00702 MUET Band 1,2 & 3 (Marks 140-159) Foreign Language Level III MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)	UB00302 MUET Band 1,2 & 3 (Marks 140-159) UB00402/ UB00502/ UB00602/ UB02002 MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)				
	UNIVERSITY CORE CO-CURRICULUM (3 Credit Hours)	ESXXX03 (3 Credit Hours)							

4 YEARS PROGRAMME COURSE STRUCTURE (8 SEMESTERS)

	Year 1		Year 2		Year 3		Year 4	
	Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8

HS27 AQUACULTURE

Course Structure Session 2019/2020	FACULTY CORE (14 Credit Hours)	ST00402 Basic Biology (2 Credit Hours)	ST00502 Basic Chemistry (2 Credit Hours)	ST00202 Basic Statistics (2 Credit Hours)	ST00803 Statistical Programming Package (3 Credit Hours)	SR01102 Industrial Revolution and Research Methodology (2 Credit Hours)	ST01003 Biometry and Experimental Design (3 Credit Hours)		
	PROGRAMME CORE (77 Credit Hours)	SQ12103 Principles of Aquaculture SQ12303 Biology of Aquaculture Animals-I (Fish) (6 Credit Hours)	SQ12203 Mollusc Culture SQ12403 Water Quality Management SQ12603 Biology of Aquaculture Animals-II (Invertebrate) SQ12802 Swimming and Water Safety (11 Credit Hours)	SQ22103 Hatchery System, Design and Management SQ22303 Broodstock Management and Seed Production SQ22503 Grow-out System and Management (9 Credit Hours)	SQ22203 Live Feed Management SQ22403 Nutrition and Feed Development SQ22603 Ornamental Culture SQ22802 Shared Farm I (11 Credit Hours)	SQ32103 Seaweed Culture SQ32303 Crustacean Culture SQ32503 Fish Health and Diseases SQ32702 Shared Farm II (11 Credit Hours)	SQ34203 Scientific Project I SQ32403 Genetics of Aquaculture Animals SQ32603 Immunology of Aquaculture Animals (9 Credit Hours)	SQ40106 Scientific Project II SQ42303 Fish PostHarvest And Processing SQ42503 Fisheries Stock Enhancement And Sea Ranching (12 Credit Hours)	SQ40208 Industrial Training (8 Credit Hours)
	MINOR/ ELECTIVE (6 Credit Hours)			SJ00103 Creativity, Innovation and Entrepreneurship (3 Credit Hours)	SJ00203 Business Project Proposals (3 Credit Hours)				

4 YEARS PROGRAMME COURSE STRUCTURE (8 SEMESTERS)									
		Year 1		Year 2		Year 3		Year 4	
		Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8

HS27 AQUACULTURE									
TOTAL CREDIT HOURS (120 Credit Hours)	19	19	18	19	13	12	12	8	

4 YEARS PROGRAMME COURSE STRUCTURE (8 SEMESTERS)

	Year 1		Year 2		Year 3		Year 4	
	Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8

HS40 MARINE SCIENCE

Course Structure Session 2019/2020	UNIVERSITY COURSES PROMOTION OF KNOWLEDGE LANGUAGE LEARNING (12 Credit Hours)	UW00202 Islamic and Asia Civilization (TITAS) UEXXXX2 Soft Skills I (4 Credit Hours)	UW00102 Ethnic Relationship (HE) UK00X02 Soft Skills II UC00X02 Soft Skills III (6 Credit Hours)	UW00302 Basic Entrepreneurship (APK) (2 Credit Hours)					
	UNIVERSITY COURSES LANGUAGE LEARNING (8 Credit Hours)	UB00202 MUET Band 1,2 & 3 (Marks 140-159) Foreign Language Level I MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)	UB00102 MUET Band 1,2 & 3 (Marks 140-159) Foreign Language Level II MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)	UB00702 MUET Band 1,2 & 3 (Marks 140-159) Foreign Language Level III MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)	UB00302 MUET Band 1,2 & 3 (Marks 140-159) UB00402/ UB00502/ UB00602/ UB02002 MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)				
	UNIVERSITY CORE CO-CURRICULUM (3 Credit Hours)	ESXXX03 (3 Credit Hours)							

4 YEARS PROGRAMME COURSE STRUCTURE (8 SEMESTERS)

	Year 1		Year 2		Year 3		Year 4	
	Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8

HS40 MARINE SCIENCE

Course Structure Session 2019/2020	FACULTY'S CORE COURSES (14 Credit Hours)	ST00302 Earth and Planet Science (2 Credit Hours)	ST00502 Basic Chemistry (2 Credit Hours)	ST00202 Basic Statistics (2 Credit Hours)	ST00803 Statistical Programming Package (3 Credit Hours)	SR01102 Industrial Revolution and Research Methodology (2 Credit Hours)	ST01003 Biometry and Experimental Design (3 Credit Hours)		
	PROGRAMME'S CORE COURSES (76 Credit Hours)	SL10503 Physical Oceanography SL10703 Biological Oceanography 1: Flora SL10902 Swimming and Water Safety (8 Credit Hours)	SL10403 Basic Navigation and Seamanship SL10803 Biological Oceanography 2: Fauna (6 Credit Hours)	SL20303 Marine Ecosystems SL20703 Mariculture SL20903 Chemical Oceanography (9 Credit Hours)	SL20603 Coral Reef Ecology SL21203 Meteorology and Climate Change SL21403 Fisheries Science and Management (9 Credit Hours)	SL30303 Marine Pollution SL30503 Coastal Processes SL30903 Marine Organic Chemistry SL31103 Environmental Law and Ethics (12 Credit Hours)	SL34203 Scientific Project 1 SL31003 Coastal Modeling SL31203 Biology of Marine Mammals SL31403 Marine Biotechnology (12 Credit Hours)	SL40106 Scientific Project 2 SL40303 Integrated Coastal Zone Management SL40503 Biology of Marine Reptiles (12 Credit Hours)	SL40208 Industrial Training (8 Credit Hours)
	ELECTIVE COURSES (8 Credit Hours)			SJ00103 Creativity, Innovation and Entrepreneurship (3 Credit Hours)	SJ00203 Business Project Proposals (3 Credit Hours)			SL40702/SL40902/SL41102 Elective* (2 Credit Hours)	

4 YEARS PROGRAMME COURSE STRUCTURE (8 SEMESTERS)								
	Year 1		Year 2		Year 3		Year 4	
	Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8

HS40 MARINE SCIENCE								
TOTAL CREDIT HOURS (121 Credit Hours)	19	16	18	17	14	15	14	8

*Subjek Elektif: SL40702 Sekuriti Makanan Laut , SL40902 Ekonomi Persekitaran Sumber Alam, SL41102 Meiobentologi

4 YEARS PROGRAMME COURSE STRUCTURE (8 SEMESTERS)

	Year 1		Year 2		Year 3		Year 4	
	Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8

HG07 BIOTECHNOLOGY

Course Structure Session 2019/2020	UNIVERSITY COURSES PROMOTION OF KNOWLEDGE LANGUAGE LEARNING (12 Credit Hours)	UW00202 Islamic and Asian Civilisation (TITAS) UE0XX02 Critical Thinking and Malaysian Ethos UK0XX02 Contemporary Malaysian and International Affairs Knowledge Component (6 Credit Hours)	UW00102 Ethnic Relations UC0XX02 Career Foundation and Communication Skills Component (4 Credit Hours)	UW00302 Basic Entrepreneurial Acculturation (2 Credit Hours)					
	UNIVERSITY COURSES LANGUAGE LEARNING (8 Credit Hours)	UB00202 MUET Band 1,2 & 3 (Marks 140-159) Foreign Language Level I MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)	UB00102 MUET Band 1,2 & 3 (Marks 140-159) Foreign Language Level II MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)	UB00702 MUET Band 1,2 & 3 (Marks 140-159) Foreign Language Level III MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)	UB00302 MUET Band 1,2 & 3 (Marks 140-159) UB00402/ UB00502/ UB00602/ UB02002 MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)				

4 YEARS PROGRAMME COURSE STRUCTURE (8 SEMESTERS)

	Year 1		Year 2		Year 3		Year 4	
	Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8

HG07 BIOTECHNOLOGY

Course Structure Session 2019/2020	UNIVERSITY CORE CO-CURRICULUM (3 Credit Hours)	EXXXXX3 or EXXXXX1 (3/1 Credit Hours)	EXXXXX1 (0/1 Credit Hours)	EXXXXX1 (0/1 Credit Hours)	EXXXXX1 (0/1 Credit Hours)	EXXXXX1 (0/1 Credit Hours)	EXXXXX1 (0/1 Credit Hours)		
	FACULTY CORE (11 Credit Hours)	ST00602 Basic Physics (2 Credit Hours)	ST00502 Basic Chemistry (2 Credit Hours)	ST00202 Basic Statistics (2 Credit Hours)		ST00803 Statistical Programming Package (3 Credit Hours)	SR01102 Industrial Revolution and Research Methodology (2 Credit Hours)		
	PROGRAMME CORE (78 Credit Hours)	SY12103 Basic Biotechnology	SY12202 Genetics SY12403 Biochemistry SY12603 Microbiology	SY22103 Biophysical Chemistry SY22303 Immunology SY22503 Virology	SY22202 Molecular Genetics SY22403 Principles of Cell and Tissue Culture SY22603 Molecular Cell Biology SY22803 Instrumentation And Application	SY32103 Biochemical Engineering SY32302 Genetic Engineering SY32502 Techniques in Molecular Biology and Genetic Engineering SY32703 Bioinformatics	SY34203 Scientific Project I SY32203 Industrial Bioprocess SY32402 Natural Product Biotechnology SY32603 Enzyme Technology and Biosensor	SY40106 Scientific Project II SY40302 Special Topics in Biotechnology SY40503 Advanced Biochemistry SY40703 Medical Biotechnology	SY40208 Industrial Training

4 YEARS PROGRAMME COURSE STRUCTURE (8 SEMESTERS)

	Year 1		Year 2		Year 3		Year 4	
	Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8

HG07 BIOTECHNOLOGY

							SY32802 Agriculture Biotechnology	SY40902 Biosafety, Bioethics and Patent	
	(3 Credit Hours)	(8 Credit Hours)	(9 Credit Hours)	(11 Credit Hours)	(10 Credit Hours)	(10 Credit Hours)	(13 Credit Hours)	(16 Credit Hours)	(8 Credit Hours)
ELECTIVE (15 Credit Hours)		SJ13203 Microeconomics I (3 Credit Hours)	SJ23303 Macroeconomics I (3 Credit Hours)	SJ23203 Financial Management I (3 Credit Hours)	SJ00103 Creativity, Innovation and Entrepreneurship (3 Credit Hours)	SJ00203 Bussiness Project Proposal (3 Credit Hours)			
TOTAL CREDIT HOURS (127 Credit Hours)	16/14	19/20	18/19	16/17	16/17	18/19	16	8	

4 YEARS PROGRAMME COURSE STRUCTURE (8 SEMESTERS)

	Year 1		Year 2		Year 3		Year 4	
	Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8

HG19 INTERNATIONAL TROPICAL FORESTRY

Course Structure Session 2019/2020	UNIVERSITY COURSES PROMOTION OF KNOWLEDGE LANGUAGE LEARNING (12 Credit Hours)	UW00202 TITAS UE00102 Ethics and Moral (4 Credit Hours)	UW00102 Ethnics Relations UC00102 Corporate Communications UK00202 Creative Thinking and Writing (6 Credit Hours)	UW00302 Fundamentals Of Entrepreneurship Culture (2 Credit Hours)				
	UNIVERSITY COURSES LANGUAGE LEARNING (8 Credit Hours)	UB00202 MUET Band 1,2 & 3 (Marks 140-159) Foreign Language Level I MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)	UB00102 MUET Band 1,2 & 3 (Marks 140-159) Foreign Language Level II MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)	UB00702 MUET Band 1,2 & 3 (Marks 140-159) Foreign Language Level III MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)	UB00302 MUET Band 1,2 & 3 (Marks 140-159) UB00402/ UB00502/ UB00602/ UB02002 MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)			
	UNIVERSITY CORE CO-CURRICULUM (3 Credit Hours)	EJ12101 (1 Credit Hour)	EJ12201 (1 Credit Hour)	EJ22301 (1 Credit Hour)				

4 YEARS PROGRAMME COURSE STRUCTURE (8 SEMESTERS)

	Year 1		Year 2		Year 3		Year 4	
	Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8

HG19 INTERNATIONAL TROPICAL FORESTRY

Course Structure Session 2019/2020	FACULTY CORE (18 Credit Hours)	FC10103 Soil Science FC10303 Dendrology (6 Credit Hours)	FC10203 Plant Pyhsiology FC10403 Forest Ecology (6 Credit Hours)	FC20103 Biometrics (3 Credit Hours)		SR01102 Industrial Revolution and Research Methodology FC30301 Forest Camp (3 Credit Hours)			
	PROGRAMME CORE (62 Credit Hours)	FL10103 Forest Protection (3 Credit Hour)	FK10202 Introduction to Forest Products FK10403 Wood Science (5 Credit Hour)	FS20103 Survey FS20303 Management And Conservation of Biodiversity (6 Credit Hour)	FS20203 Forest Fire Management FS20403 Silviculture FS20603 Forest Inventory FP20203 Zoology and Wildlife Management (12 Credit Hour)	FS30103 Forest Management I FS30303 International and Regional Forestry FS30503 Forest Engineering FP30103 Geographical Information System (12 Credit Hour)	FS30202 Forest and Wood Products Certification FS30403 Forest Valuation FS30603 Forest Management II FS30803 Project I (11 Credit Hour)	FS40103 Community Forestry and Forest Extension FS40302 Seminar: Special Topics FS40503 Forest Policy and Legislation FS40703 Project II FK40102 Timber Trade (13 Credit Hour)	

4 YEARS PROGRAMME COURSE STRUCTURE (8 SEMESTERS)

	Year 1		Year 2		Year 3		Year 4	
	Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8

HG19 INTERNATIONAL TROPICAL FORESTRY

INDUSTRIAL TRAINING (12 Credit Hours)								FS40212 Industrial Training (12 Credit Hour)
**ELECTIVE (12 Credit Hours)			FX2XXX3 Elective Course (3 Credit Hour)	FX2XXX3 Elective Course (3 Credit Hour)	FX3XXX3 Elective Course (3 Credit Hour)	FX3XXX3 Elective Course (3 Credit Hour)		
TOTAL CREDIT HOURS (127 Credit Hours)	16	20	17	17	18	14	13	12

***Notes:**

Course offered is subject to changes.

**** Choice of package offered in Complex of Forestry:**

2 ND YEAR		3 RD YEAR	
1 ST SEMESTER	2 ND SEMESTER	1 ST SEMESTER	2 ND SEMESTER
FX20103 Fundamentals of Forest Entomology FX20303 Nature Interpretation FX20503 Accounting Principles	FX20203 Introduction to Plant Disease Management FX20403 Foresters Knowledge and Skills FX20603 Principles and Practices of Management FX20803 Evaluation and Planning of Rural Community	FX30103 Forest Restoration FX30303 Climate and Environmental Issues FX30503 Financial Management	FX30203 Human Resources Management FX30403 Environmental Land Use Planning FX30603 Industrial Relation FX30803 Management of Quality

4 YEARS PROGRAMME COURSE STRUCTURE (8 SEMESTERS)

	Year 1		Year 2		Year 3		Year 4	
	Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8

HG20 NATURE PARKS AND RECREATION

Course Structure Session 2019/2020	UNIVERSITY COURSES PROMOTION OF KNOWLEDGE LANGUAGE LEARNING (12 Credit Hours)	UW00202 TITAS UE00102 Ethics and Moral (4 Credit Hours)	UW00102 Ethnics Relations UC00102 Corporate Communications UK00202 Creative Thinking and Writing (6 Credit Hours)	UW00302 Fundamentals Of Entrepreneurship Culture (2 Credit Hours)					
	UNIVERSITY COURSES LANGUAGE LEARNING (8 Credit Hours)	UB00202 MUET Band 1,2 & 3 (Marks 140-159) Foreign Language Level I MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)	UB00102 MUET Band 1,2 & 3 (Marks 140-159) Foreign Language Level II MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)	UB00702 MUET Band 1,2 & 3 (Marks 140-159) Foreign Language Level III MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)	UB00302 MUET Band 1,2 & 3 (Marks 140-159) UB00402/ UB00502/ UB00602/ UB02002 MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)				
	UNIVERSITY CORE CO-CURRICULUM (3 Credit Hours)	EJ12101 (1credit Hour)	EJ12201 (1 Credit Hour)	EJ22301 (1 Credit Hour)					

4 YEARS PROGRAMME COURSE STRUCTURE (8 SEMESTERS)

	Year 1		Year 2		Year 3		Year 4	
	Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8

HG20 NATURE PARKS AND RECREATION

Course Structure Session 2019/2020	FACULTY CORE (18 Credit Hours)	FC10103 Soil Science FC10303 Dendrology (6 Credit Hours)	FC10203 Plant Pyhsiology FC10403 Forest Ecology (6 Credit Hours)	FC20103 Biometrics (3 Credit Hours)		SR01102 Industrial Revolution and Research Methodology FC30301 Forest Camp (3 Credit Hours)			
	PROGRAMME CORE (62 Credit Hours)	FL10103 Forest Protection	FP10203 Forest Hydrology FP10403 Park Planning and Management I	FP20103 Park Planning and Management II FS20103 Survey	FP20203 Zoology and Wildlife Management FP20401 Landscape Drawing Technique FP20603 Ecotourism FP20803 Remote Sensing FS20603 Forest Inventory	FP30103 Geographic Information Systems FP30303 Arboriculture FP30503 Landscape Architecture and Recreation Facility Design FP30703 Environmental Service Evaluation	FP30202 Recreation Psychology FP30403 Urban Forestry FP30602 Tourism Economics FP30803 Project I	FP40103 Outdoor Recreation FP40302 Recreation Resource Marketing FP40502 Resort Management and Human Resource FP40702 Ecology and Landscape Management	

4 YEARS PROGRAMME COURSE STRUCTURE (8 SEMESTERS)

	Year 1		Year 2		Year 3		Year 4	
	Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8

HG20 NATURE PARKS AND RECREATION

	(3 Credit Hour)	(6 Credit Hour)	(6 Credit Hour)	(13 Credit Hour)	(12 Credit Hour)	(10 Credit Hour)	FP40903 Project II	(12 Credit Hour)	
**ELECTIVE (12 Credit Hours)			FX2XXX3 Elective Course (3 Credit Hour)	FX2XXX3 Elective Course (3 Credit Hour)	FX3XXX3 Elective Course (3 Credit Hour)	FX3XXX3 Elective Course (3 Credit Hour)			
TOTAL CREDIT HOURS (127 Credit Hours)	16	21	17	18	18	13	12	12	

***Notes:**

Course offered is subject to changes.

**** Choice of package offered in Complex of Forestry:**

2 ND YEAR		3 RD YEAR	
1 ST SEMESTER	2 ND SEMESTER	1 ST SEMESTER	2 ND SEMESTER
FX20103 Fundamentals of Forest Entomology FX20303 Nature Interpretation FX20503 Accounting Principles	FX20203 Introduction to Plant Disease Management FX20403 Foresters Knowledge and Skills FX20603 Principles and Practices of Management FX20803 Evaluation and Planning of Rural Community	FX30103 Forest Restoration FX30303 Climate and Environmental Issues FX30503 Financial Management	FX30203 Human Resources Management FX30403 Environmental Land Use Planning FX30603 Industrial Relation FX30803 Management of Quality

4 YEARS PROGRAMME COURSE STRUCTURE (8 SEMESTERS)

	Year 1		Year 2		Year 3		Year 4	
	Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8

HG23 FOREST PLANTATION AND AGROFORESTRY

Course Structure Session 2019/2020	UNIVERSITY COURSES PROMOTION OF KNOWLEDGE LANGUAGE LEARNING (12 Credit Hours)	UW00202 TITAS UE00102 Ethics and Moral (4 Credit Hours)	UW00102 Ethnics Relations UC00102 Corporate Communications UK00202 Creative Thinking and Writing (6 Credit Hours)	UW00302 Fundamentals Of Entrepreneurship Culture (2 Credit Hours)				
	UNIVERSITY COURSES LANGUAGE LEARNING (8 Credit Hours)	UB00202 MUET Band 1,2 & 3 (Marks 140-159) Foreign Language Level I MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)	UB00102 MUET Band 1,2 & 3 (Marks 140-159) Foreign Language Level II MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)	UB00702 MUET Band 1,2 & 3 (Marks 140-159) Foreign Language Level III MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)	UB00302 MUET Band 1,2 & 3 (Marks 140-159) UB00402/ UB00502/ UB00602/ UB02002 MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)			
	UNIVERSITY CORE CO-CURRICULUM (3 Credit Hours)	EJ12101 (1 Credit Hour)	EJ12201 (1 Credit Hour)	EJ22301 (1 Credit Hour)				

4 YEARS PROGRAMME COURSE STRUCTURE (8 SEMESTERS)

	Year 1		Year 2		Year 3		Year 4	
	Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8

HG23 FOREST PLANTATION AND AGROFORESTRY

Course Structure Session 2019/2020	FACULTY CORE (18 Credit Hours)	FC10103 Soil Science FC10303 Dendrology (6 Credit Hours)	FC10203 Plant Physiology FC10403 Forest Ecology (6 Credit Hours)	FC20103 Biometrics (3 Credit Hours)		SR01102 Industrial Revolution and Research Methodology FC30301 Forest Camp (3 Credit Hours)		
	PROGRAMME CORE (62 Credit Hours)	FL10103 Forest Protection	FK10403 Wood Science	FL20103 Plant Production Technology FS20103 Survey	FL20203 Agroforestry Systems and Practices FL20403 Forest Plantation Management FS20403 Silviculture FS20603 Forest Inventory	FL30103 Plantation Economics FL30303 Livestock Enterprise FP30103 Geographic Information Systems FS30503 Forest Engineering	FL30203 TreeCrop-Soil Interaction and Nutrient Management FL30403 Genetics and Plant Breeding FL30603 Project I FS30202 Forest and Wood Products Certification	FL40103 Agribusiness and Marketing of Plantation Products FL40303 Agriculture Crop and Forest Plantation in the Tropics FL40503 Integrated Farm Management FL40703 Project II FS40103 Community Forestry and Forestry Extension

4 YEARS PROGRAMME COURSE STRUCTURE (8 SEMESTERS)

	Year 1		Year 2		Year 3		Year 4	
	Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8

HG23 FOREST PLANTATION AND AGROFORESTRY

	(3 Credit Hours)	(3 Credit Hours)	(6 credit hours)	(12 Credit Hours)	(12 Credit Hours)	(11 Credit Hours)	(12 Credit Hour)	
INDUSTRIAL TRAINING (12 Credit Hours)								FL40212 Industrial Training (12 Credit Hour)
**ELECTIVE (12 Credit Hours)			FX2XXX3 Elective Course (3 Credit Hour)	FX2XXX3 Elective Course (3 Credit Hour)	FX3XXX3 Elective Course (3 Credit Hour)	FX3XXX3 Elective Course (3 Credit Hour)		
TOTAL CREDIT HOURS (127 Credit Hours)	16	18	17	17	18	14	15	12

***Notes:**

Course offered is subject to changes.

**** Choice of package offered in Complex of Forestry:**

2 ND YEAR		3 RD YEAR	
1 ST SEMESTER	2 ND SEMESTER	1 ST SEMESTER	2 ND SEMESTER
FX20103 Fundamentals of Forest Entomology FX20303 Nature Interpretation FX20503 Accounting Principles	FX20203 Introduction to Plant Disease Management FX20403 Foresters Knowledge and Skills FX20603 Principles and Practices of Management FX20803 Evaluation and Planning of Rural Community	FX30103 Forest Restoration FX30303 Climate and Environmental Issues FX30503 Financial Management	FX30203 Human Resources Management FX30403 Environmental Land Use Planning FX30603 Industrial Relation FX30803 Management of Quality

4 YEARS PROGRAMME COURSE STRUCTURE (8 SEMESTERS)

	Year 1		Year 2		Year 3		Year 4	
	Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8

HY11 WOOD TECHNOLOGY AND INDUSTRY

Course Structure Session 2019/2020	UNIVERSITY COURSES PROMOTION OF KNOWLEDGE LANGUAGE LEARNING (12 Credit Hours)	UW00202 TITAS UE00102 Ethics and Moral (4 Credit Hours)	UW00102 Ethnics Relations UC00102 Corporate Communications UK00202 Creative Thinking and Writing (6 Credit Hours)	UW00302 Fundamentals Of Entrepreneurship Culture (2 Credit Hours)				
	UNIVERSITY COURSES LANGUAGE LEARNING (8 Credit Hours)	UB00202 MUET Band 1,2 & 3 (Marks 140-159) Foreign Language Level I MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)	UB00102 MUET Band 1,2 & 3 (Marks 140-159) Foreign Language Level II MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)	UB00702 MUET Band 1,2 & 3 (Marks 140-159) Foreign Language Level III MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)	UB00302 MUET Band 1,2 & 3 (Marks 140-159) UB00402/ UB00502/ UB00602/ UB02002 MUET Band 3 (Marks 160-179), 4,5,6 (2 Credit Hours)			
	UNIVERSITY CORE CO-CURRICULUM (3 Credit Hours)	EJ12101 (1 Credit Hour)	EJ12201 (1 Credit Hour)	EJ22301 (1 Credit Hour)				

4 YEARS PROGRAMME COURSE STRUCTURE (8 SEMESTERS)

	Year 1		Year 2		Year 3		Year 4	
	Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8

HY11 WOOD TECHNOLOGY AND INDUSTRY

Course Structure Session 2019/2020	FACULTY CORE (18 Credit Hours)	FC10103 Soil Science FC10303 Dendrology (6 Credit Hours)	FC10203 Plant Physiology FC10403 Forest Ecology (6 Credit Hours)	FC20103 Biometrics (3 Credit Hours)	-	SR01102 Industrial Revolution and Research Methodology FC30301 Forest Camp (3 Credit Hours)			
	PROGRAMME CORE (88 Credit Hours)	FK10103 Introduction to Main Forest Products	FK10202 Forest Resource Economics FK10403 Wood Science	FK20103 Advanced Wood Science FK20502 Forest Resource Management FS20603 Forest Inventory	FK20203 Wood Chemistry FK20403 Adhesive and Coating FS20403 Silviculture FK20903 Wood Quality Enhancement FK21103 Engineered Wood Products FK21003 Wood Machining	FK30203 Furniture Design and Manufacturing FK30903 Seminar: Special Topics in Wood Industry FK30503 Pulp and Paper Technology FK30702 Policy, Laws and Regulations in Wood-based Industry FK30703 Project I	FK30802 Wood-based Safety, Health and Factory Management FK30602 Marketing of Forest Products FS30202 Forest and Wood Product Certification FK30603 Management and Utilization of Biomass FK30402 Timber Trade FK31003 Project II	FK40312 Industrial Based Learning (IBL 1) -	FK40214 Industrial Based Learning (IBL 2)

4 YEARS PROGRAMME COURSE STRUCTURE (8 SEMESTERS)									
		Year 1		Year 2		Year 3		Year 4	
		Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8

HY11 WOOD TECHNOLOGY AND INDUSTRY									
		(3 Credit Hours)	(5 Credit Hours)	(8 Credit Hours)	(18 Credit Hours)	(14 Credit Hours)	(14 Credit Hours)	(12 Credit Hours)	(14 Credit Hours)
	ELECTIVE (0 Credit Hours)								
	TOTAL CREDIT HOURS (129 Credit Hours)	16	20	16	20	17	14	12	14