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UNIVERSITI SAINS MALAYSIA

APEX

SBS School of Biological Sciences
Excellence Through Bio-Diversity
www.bio.usm.my

Royal Society of Biology
Accredited Degree

COURSE
BOOKLET

BACHELOR OF
APPLIED SCIENCE (HONOURS),

APPLIED BIOLOGY

Introduction

Excellence in research and teaching is our aspiration, which is driven by research-active staff from diverse academic and research backgrounds. We offer exciting opportunities to students over a wide variety of topics related to Biological Sciences. Students are exposed to essential fundamental knowledge on the ecosystem, biodiversity, plants, animals and microbial and cellular processes in the first 2 years of study. Towards the end of the second year, students can choose to specialise in either Agrobiology, Aquatic Biology, Entomology and Parasitology, Biotechnology or Environmental Biology leading to a Bachelor of Applied Science (Honours) (Applied Biology) in four years. In addition, students are also encouraged to register for an optional internship programme (Elective Course) during the semester break at the end of the 3rd year (Semester 2). The 2 months internship programme will provide students with valuable industry and corporate exposure.

Students graduating from the School of Biological Sciences will be equipped with the following knowledge :

1. The diversity of life forms and the reasons for this.
2. The intricate relationships between life forms and their environments.
3. Role of all life forms in maintaining the delicate balance of our ecosystem.
4. Good Laboratory Practices and usage of standard and advanced laboratory equipment.
5. Ability to design and implement scientific experiments.
6. Ability to write reports and make scientific presentations.

The knowledge acquired by the students will enable them to make wise decisions with respect to the current global environmental issues such as pollution, environmental deterioration, biodiversity loss, deforestation, global warming and climate change. In addition, the students also develop innovative skills and are able to generate and test new ideas. Students with this essential knowledge will excel in any career path that they choose. The School of Biological Sciences is proud to produce students who can think holistically to ensure a sustainable tomorrow.

Our programmes are recognised internationally by the Royal Society of Biology, United Kingdom (https://www.rsb.org.uk/) starting from the Academic Session of 2019/2020 to 2023/2024.

Vision

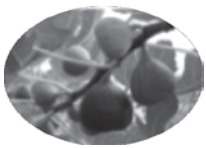
Centre of excellence for education and research in the field of biological sciences.

Mission

1. To provide quality and innovative teaching and learning for its entire degree programme.
2. To achieve research excellence.
3. To establish and enhance collaboration with industries for education input and research.
4. To serve the society and country by providing the latest knowledge and technology.

Bachelor of Applied Science (Honours)(Applied Biology)

There are five (5) areas of specialisation/major :-



Agrobiology : Students will explore various approaches to promote higher plant productivity and growth. Topics covered include basic entomology, plant diseases, disease mechanisms and pathogen interactions, insect pest management strategies, plant disease control methods, plant physiology and horticultural science.

Aquatic Biology : Students will learn structures and functions of aquatic flora and fauna, basic ecological aspects of various ecosystems, management and sustainable utilisation and conservation of aquatic resources.

Entomology and Parasitology : Students are exposed to the structures and functions, life history, ecology, as well as vector and parasite behaviours and disease epidemiology and management for both urban and industrial insect pests.

Biotechnology : Focusing on various techniques employed in biotechnological and microbiological based industries. Advanced topics covers animal and plant cell culture, enzyme technology, molecular biology, chemical engineering principles, bioinformatics, structural biology and genetic engineering.

Environmental Biology : To strengthen knowledge and understanding of various concepts of ecology, interactions between abiotic and biotic components of various tropical ecosystems. Students will also gain valuable exposure on various ecological methods to manage and conserve the environment.

Curriculum and Graduation Structure

In order to qualify for the Bachelor of Applied Science (Honours) (Applied Biology), students are required to fulfil the following requirements :

1. Accumulate a total of 122 – 124 units over a period of not less than 8 semesters (minimum residential requirement of 8 semesters).
2. Fulfil all credit requirements for each course component (Core, Elective/ Minor and University).
3. Obtain a minimum CGPA of 2.00 for the Core courses.
4. Obtain a minimum CGPA of 2.00 for the programme.
5. Obtain a minimum grade C for all University courses.

There are 2 types of study mode for students to choose from, Minor structure or Elective structure :-

a. Minor Structure

Course component		Course code	Minimum no. of units required
CORE	Basic • 38 units	**T**	74 - 76
	Required • 36 - 38 units		
ELECTIVE		**E**	14 - 15
MINOR		**M**	16
UNIVERSITY		**U**	18
		TOTAL	**122 - 124**

b. Elective Structure

Course component		Course code	Minimum no. of units required
CORE	Basic • 38 units	**T**	74 - 76
	Required • 36 - 38 units		
ELECTIVE		**E**	30 - 31
UNIVERSITY		**U**	18
		TOTAL	**122 - 124**

University Requirements (15-22 units)

Students are required to complete a total of 15 - 22 units of the following courses for University requirements. These courses are compulsory for all students and must obtain a **minimum grade C**.

UNIVERSITY COURSE REQUIREMENTS		CREDIT TOTAL	
		Local Students	International Students
General Studies (MPU)			
U1	**Local Students** • HFF225 (Philosophy and Current Issues) (2 credits) • HFE224 (Appreciation of Ethics and Civilisations) (2 credits) • LKM400 (Bahasa Malaysia IV) (2 credits) **International Students of Science and Technology** • HFF225 (Philosophy and Current Issues) (2 credits) • LKM100 (Bahasa Malaysia I) (2 credits)	6	4
U2 Or U3	**Local Students** • WUS101 (Core Entrepreneurship) (2 credits) • English Language Courses (4 credits) **International Students** • SEA205E (Malaysian Studies) (4 credits) • English Language Courses (4 credits)	6	8
U4	Co-curricular courses*	2	2
Options	Skill courses/Foreign Language Courses/ Other courses offered by other schools. Students have to choose any of the following: • Co-curricular courses • Skill courses/Foreign Language Courses/ Other courses offered by other schools	1-8	1-8
	CREDIT TOTAL	**15-22**	**15-22**

Core Courses (74 - 76 units)

The Core Courses component is made up of courses of 100, 200, 300 and 400 levels. The courses include Basic Core courses ('Teras Asas') and Required Core courses ('Teras Wajib'). Courses in the Basic Core and Required Core groups are compulsory, where students must attain passing grades.

Basic Core Courses (38 units)

All undergraduate students must enrol and attain passing grades for these courses and must obtain a total of **38 units**. The courses are as follows :-

Year	Semester	Course Code	Course Title	Total Units
1	1	KOT 122/4	Organic Chemistry I	24
	2	MAA 101/4	Calculus (for First Year Science Students)	
	2	KTT 112/4	Inorganic Chemistry I	
	1 or 2	BOI 102/3	Ecology	
		BOI 115/3	Plants and Animals Biodiversity	
		BOI 116/4	Genetics	
		BOI 117/2	Biodiversity and Ecology Practical	
2	1 or 2	BOI 205/4	Biostatistics	11
		BOI 206/4	Principles of Biochemistry	
		BOI 207/3	General Microbiology	
4	1	BOI 401/3	Scientific Writing, Seminar and Current Topics in Biology	3

Required Core Courses (36 – 38 units)

These courses are offered at 300 and 400 levels only and have been identified according to each specialisation program, namely Agrobiology, Aquatic Biology, Entomology and Parasitology, Biotechnology and Environmental Biology. Students must enrol in all core courses that are listed in their respective fields of specialisation. All final year students are also given the option to register for a final year project of 8 units which spans over 2 semesters. At the end of the second semester, a thesis based on the existing regulations and format must be submitted for examination.

Before a student is allowed to register for the final year project in their respective field of specialisation, the student must have achieved these minimum cumulative unit requirements.

- Total overall unit = 89 - 95 units
- Total unit for Biology courses = 59 - 65 units

Students who do not wish to register for a final year project must substitute the 8 units with BOE 400/4 – Special Topics in Biology (which carries 4 units), while the remaining 4 units are fulfilled by taking elective courses that are suitable with their field of specialisation and approved by the programme chairman.

Majoring In A Field Of Specialisation

Students can specialize into five (5) majors; Agrobiology, Aquatic Biology, Biotechnology, Entomology & Parasitology, and Environmental Biology, in their 3rd year OR when a threshhold for their Basic Courses' unit have been achieved.

Criteria for selection to major are based on (but not limited exclusively to): 1) GPA-AT, 2) Self-directed Search (SDS) test, 3) Interview. The SBS's Academic Committee will review and approve the placement. Students will be notified of the result before the beginning of a new academic year.

Required core courses for each field of specialiasation

FIELD OF SPECIALISATION : AGROBIOLOGY				
Course Code	**Course Title**	**Semester**	**Course Prerequisite**	
Required Core - Level 300 = 16 Units				
BET 305/4	Insect Biology and Systematics	1	BOI 115/3	(S)
BGT 301/3	Plant Pathology	1	BGT 302/2	(C)
BGT 302/2#	Basic Practical In Plant Pathology	1	BGT 301/3	(C)
BBT 305/4	Plant Physiology and Development	2	BOI 115/3	(S)
BST 306/3	Soil Science and Environment	1	BOI 102/3	(S)
Required Core - Level 400 = 20 Units				
BGT 400/3	Agriculture, Forest and Stored Product Pests	1	BET 305/4	(S)
BGT 401/8	Research Project in Agrobiology Project	1 & 2		
BGT 402/4	Tropical Plant Disease Management	1	BGT 301/3 BGT 302/2	(S)
BGT 403/2	Advanced Plant Pathology Laboratory	2	BGT 302/2 BGT 402/4	(S) (S)
BGT 404/3	Horticultural Science	2	BOI 116/4	(S)

BGT302 course is given priority to students who register as their core. For students who want to apply for electives, students need to obtain permission from the instructors of this course

Elective = 14 Units				
BOE 201/3	Biological Instrumentation	1 & 2	BOI 206/4	(C)
BOT 205/3	Microscopy and Histological Techniques	1 & 2		
BTT 306/3	Techniques in Biotechnology	1 & 2	BOI 206/4	(S)
BMT 310/3	Bacteriology	1	BOI 207/3	(S)
BMT 308/3	Mycology	1	BOI 115/3	(S)
BMT 306/3	Virology	1	BOI 207/3	(S)
BEE 305/3	Pesticide Science	2	BET 305/4	(S)
BET 306/3	Insect Ecology	2	BOI 115/3	(S)
BOA 301/4	Industrial Training	2		
BBT 404/3	Economic Botany	1	BOI 115/3	(S)
BBT 405/3	Plant Tissue Culture	2	BOI 115/3 BOI 206/4	(S) (S)
BBT 402/3	Plant Genetics	1	BOI 116/4 BOI 206/4	(S) (S)
BST 402/3	Ecology of Invasive Species	1	BOI 102/3 BOI 117/2	(S) (S)
BET 406/3	Integrated Pest Management	2	BET 305/4	(S)
BME 401/3	Soil Microbiology	2	BOI 207/3	(S)
BOE 400/4*	Critical Review in Biology	1 & 2		

Elective (14 units under Minor structure or 30 units under Elective structure)

Students **MUST** choose among the listed courses to complete a total of 14 or 30 units for Elective.

* This course is open ONLY to a student with special approval from the Dean to replace the Research Project and requires 4 more units from other Elective courses.

(S) = Course must be taken in sequential order.
(C) = Course must be taken concurrently.

FIELD OF SPECIALISATION : AQUATIC BIOLOGY				
Course Code	**Course Title**	**Semester**	**Course Prerequisite**	
Required Core - Level 300 = 16 Units				
BAT 306/3	Oceanography	1	BOI 102/3	(S)
BAT 307/3	Ichthyology	1	BOI 115/3	(S)
BAT 308/3	Limnology	1	BOI 102/3	(S)
BAT 304/4	Coastal and Marine Ecosystems	2	BOI 102/3	(S)
BAT 305/3	Benthic Biology and Ecology	2	BOI 102/3	(S)
Required Core - Level 400 = 21 Units				
BAT 401/8	Research Project in Aquatic Biology	1 & 2		
BAT 404/4	Aquaculture	1	BOI 102/3	(S)
BET 404/3	Parasites of Aquatic Animals	1	BET 304/4	(S)
BAT 402/3	Fisheries Management	2	BAT 307/3	(S)
BAT 403/3	Management of Aquatic Systems	2	BAT 304/4	(S)

Elective = 14 Units				
BOE 201/3	Biological Instrumentation	1 & 2	BOI 206/4	(C)
BOT 205/3	Microscopy and Histological Techniques	1 & 2		
BOA 301/4	Industrial Training	2		
BET 304/4	Introductory Parasitology	1	BOI 115/3	(S)
BST 305/3	Environmental Pollution	1	BOI 102/3	(S)
BST 306/3	Soil Science and Environment	1	BOI 102/3	(S)
BST 307/3	Population and Community Ecology	2	BOI 102/3	(S)
BST 308/3	Tropical Ecosystems and Climate Change	2	BOI 102/3	(S)
BMT 307/3	Environmental Microbiology	2	BOI 207/3	(S)
BZT 304/3	Invertebrate Zoology	1	BOI 115/3	(S)
BZT 305/3	Vertebrate Zoology	1	BOI 115/3	(S)
BZT 307/3	Animal Physiology	2	BOI 115/3	(S)
BST 405/3	Conservation Ecology and Natural Resources	1	BST 308/3	(S)
BST 402/3	Ecology of Invasive Species	1	BOI 102/3 BOI 117/2	(S) (S)
BST 403/3	Environmental Management	2	BST 305/3	(S)
BST 404/3	Wildlife Ecology and Management	2	BST 307/3	(S)
BZT 404/3	Animal Conservation Genetic	2	BOI 116/4 BOI 115/3	(S) (S)
BOE 400/4*	Critical Review in Biology	1 & 2		

Elective (14 units under Minor structure or 30 units under Elective structure)

Students **MUST** choose among the listed courses to complete a total of 14 or 30 units for Elective.

* This course is open ONLY to a student with special approval from the Dean to replace the Research Project and requires 4 more units from other Elective courses.

(S) = Course must be taken in sequential order.

(C) = Course must be taken concurrently.

FIELD OF SPECIALISATION : ENTOMOLOGY AND PARASITOLOGY				
Course Code	**Course Title**	**Semester**	**Course Prerequisite**	
Required Core - Level 300 = 14 Units				
BET 304/4	Introductory Parasitology	1	BOI 115/3	(S)
BET 305/4	Insect Biology and Systematics	1	BOI 115/3	(S)
BET 306/3	Insect Ecology	2	BOI 115/3	(S)
BET 307/3	Insect Physiology and Biochemistry	2	BET 305/4	(S)
Required Core - Level 400 = 24 Units				
BET 401/8	Research Project in Entomology & Parasitology	1 & 2		
BET 402/4	Medical and Urban Entomology	1	BET 305/4	(S)
BET 404/3	Parasites of Aquatic Animals	1	BET 304/4	(S)
BET 403/3	Medical and Veterinary Protozoology	2	BET 304/4	(S)
BET 405/3	Medical and Veterinary Helminthology	2	BET 304/4	(S)
BET 406/3	Integrated Pest Management	2	BET 305/4	(S)

Elective = 14 Units

BOE 201/3	Biological Instrumentation	1 & 2	BOI 206/4	(C)
BOT 205/3	Microscopy and Histological Techniques	1 & 2		
BST 307/3	Population and Community Ecology	2	BOI 102/3	(S)
BMT 311/3	Immunology	2	BOI 207/3	(S)
BST 403/3	Environmental Management	2	BST 305/4	(S)
BZT 304/3	Invertebrate Zoology	1	BOI 115/3	(S)
BZT 305/3	Vertebrate Zoology	1	BOI 115/3	(S)
BZT 306/3	Animal Behaviour	2	BOI 115/3	(S)
BZT 307/3	Animal Physiology	2	BOI 115/3	(S)
BZT 402/3	Biology of Vertebrate Pest Animals	1	BOI 115/3	(S)
BEE 305/3	Pesticide Science	2	BET 305/4	(S)
BOA 301/4	Industrial Training	2		
BGT 400/3	Agriculture, Forest and Store Product Pests	1	BET 305/4	(S)
BOE 400/4*	Critical Review in Biology	1 & 2		

Elective (14 units under Minor structure or 30 units under Elective structure)

Students **MUST** choose among the listed courses to complete a total of 14 or 30 units for Elective.

* This course is open ONLY to a student with special approval from the Dean to replace the Research Project and requires 4 more units from other Elective courses.

(S) = Course must be taken in sequential order.
(C) = Course must be taken concurrently.

FIELD OF SPECIALISATION : BIOTECHNOLOGY				
Course Code	**Course Title**	**Semester**	**Course Prerequisite**	
Required Core - Level 300 = 15 Units				
BTT 305/3	Protein Biochemistry	2	BOI 206/4	(S)
BTT 306/3	Techniques In Biotechnology	1 & 2	BOI 206/4	(S)
BMT 305/3	Microbial Physiology	2	BOI 115/3 BOI 206/4	(S) (S)
BMT 309/3	Microbial Genetics	2	BOI 207/3	(S)
BMT 311/3	Immunology	2	BOI 207/3	(S)
Required Core - Level 400 = 23 Units				
BTT401/8	Research Project in Biotechnology	1 & 2		
BTT 402/3	Fermentation Technology	1	BOI 207/3 BOI 206/4	(S) (S)
BTT 404/3	Genetic Engineering	1	BMT 309/3	(S)
BTT 403/3	Biochemical Engineering	2	KOT 122/4 BOI 206/4 MAA 101/4	(S) (S) (S)
BBT 403/3	Plant Molecular Biology	2	BOI 116/4 BOI 206/4 BBT 402/3	(S) (S) (S)
BBT 405/3	Plant Tissue Culture	2	BOI 115/3 BOI 206/4	(S) (S)

Elective = 14 Units				
BOE 201/3	Biological Instrumentation	1 & 2	BOI 206/4	(C)
BOT 205/3	Microscopy and Histological Techniques	1 & 2		
BOA301/4	Industrial Training	2		
BBT 402/3	Plant Genetics	1	BOI 116/4 BOI 206/4	(S) (S)
BMT 308/3	Mycology	1	BOI 115/3	(S)
BMT 310/3	Bacteriology	1	BOI 207/3	(S)
BMT 307/3	Environmental Microbiology	2	BOI 207/3	(S)
BET 304/4	Introductory Parasitology	1	BOI 115/3	(S)
BET 305/4	Insect Biology and Systematics	1	BOI 115/3	(S)
BGT 301/3	Plant Pathology	1	BGT 302/2	(C)
BGT 302/2#	Basic Practical in Plant Pathology	1	BGT 301/3	(C)
BMT 402/3	Medical Microbiology	1	BOI 207/3	(S)
BMT 403/3	Industrial Microbiology	2	BOI 207/3	(S)
BME 401/3	Soil Microbiology	2	BOI 207/3	(S)
BME 402/3	Microbial Genomics	2	BOI 207/3	(S)
BTE 401/2	Animal Cell Culture Technology	2	BOI 206/4	(S)
BZT 404/3	Animal Conservation Genetic	2	BOI 116/4 BOI 115/3	(S) (S)
BZT 403/3	Plant-Animal Interaction	1	BOI 115/3	(S)
BBT 305/4	Plant Physiology and Development	2	BOI 115/3	(S)
BBT 306/4	Plant Biosystematics and Taxonomy	2	BOI 115/3	(S)
BST 305/3	Environmental Pollution	1	BOI 102/3	(S)
BAT 307/3	Ichthyology	1	BOI 115/3	(S)
BAT 404/4	Aquaculture	1	BOI 102/3	(S)
BOE 400/4*	Critical Review in Biology	1 & 2		

Elective (14 units under Minor structure or 30 units under Elective structure)

Students **MUST** choose among the listed courses to complete a total of 14 or 30 units for Elective.

BGT302 course is given priority to students who register as their core. Students who want to apply as for electives need to obtain permission from the instructors of this course.

* This course is open ONLY to a student with special approval from the Dean to replace the Research Project and requires 4 more units from other Elective courses.

(S) = Course must be taken in sequential order. (C) = Course must be taken concurrently.

FIELD OF SPECIALISATION: ENVIRONMENTAL BIOLOGY				
Course Code	**Course Title**	**Semester**	**Course Prerequisite**	
Required Core - Level 200 = 18 Units				
BST 305/3	Environmental Pollution	1	BOI 102/3	(S)
BST 306/3	Soil Science and Environment	1	BOI 102/3	(S)
BAT 306/3	Oceanography	1	BOI 102/3	(S)
BAT 308/3	Limnology	1	BOI 102/3	(S)
BST 307/3	Population and Community Ecology	2	BOI 102/3	(S)
BST 308/3	Tropical Ecosystems and Climate Change	2	BOI 102/3	(S)
Required Core - Level 300 = 20 Units				
BST 401/8	Research Project in Environmental Biology	1 & 2		
BST 402/3	Ecology of Invasive Species	1	BOI 102/3 BOI 117/2	(S) (S)
BST 405/3	Conservation Ecology and Natural Resources	1	BST 308/3	(S)
BST 403/3	Environmental Management	2	BST 305/3	(S)
BST 404/3	Wildlife Ecology and Management	2	BST 307/3	(S)

Elective = 14 Units				
BOE 201/3	Biological Instrumentation	1 & 2	BOI 206/4	(C)
BOT 205/3	Microscopy and Histological Techniques	1 & 2		
BOA 301/4	Industrial Training	2		
BAT 304/4	Coastal and Marine Ecosystem	2	BOI 102/3	(S)
BAT 305/3	Benthic Biology and Ecology	2	BOI 102/3	(S)
BET 305/4	Insect Biology and Systematics	1	BOI 115/3	(S)
BET 306/3	Insect Ecology	2	BOI 115/3	(S)
BMT 307/3	Environmental Microbiology	2	BOI 207/3	(S)
BBT 308/3	Tropical Plant Ecology	1	BOI 115/3	(S)
BBT 306/4	Plant Biosystematics and Taxonomy	2	BOI 115/3	(S)
BBT 307/3	Ethnobotany	2	BOI 115/3	(S)
BAT 307/3	Ichthyology	1	BOI 115/3	(S)
BAT 404/4	Aquaculture	1	BOI 102/3	(S)
BAT 402/3	Fisheries Management	2	BAT 307/3	(S)
BAT 403/3	Management of Aquatic Systems	2	BAT 304/4	(S)
BET 406/3	Integrated Pest Management	2	BET 305/4	(S)
BBT 404/3	Economic Botany	1	BOI 115/3	(S)
BZT 403/3	Plant-Animal Interaction	1	BOI 115/3	(S)
BZT 404/3	Animal Conservation Genetic	2	BOI 116/4 BOI 115/3	(S) (S)
BOE 400/4*	Critical Review in Biology	1 & 2		

Elective (14 units under Minor structure or 30 units under Elective structure)

Students **MUST** choose among the listed courses to complete a total of 14 or 30 units for Elective.

* This course is open ONLY to student with special approval from the Dean to replace the Research Project and requires 4 more units from other Elective courses.

(S) = Course must be taken in sequential order.
(C) = Course must be taken concurrently.

Proposed Curriculum Structure, Bachelor of Applied Science (Honours) (Applied Biology)

Year	Sem	Basic Core (38 units)	Required Core (36-38 units)		
			Agrobiology (36 units)	Aquatic Biology (37 units)	Entomology & Parasitology (38 units)
1	1	BOI 116/4			
		KOT 122/4			
	2	BOI 102/3			
		BOI 115/3			
		BOI 117/2			
		KTT 112/4			
		MAA 101/4			
2	1	BOI 206/4			
	2	BOI 205/4			
		BOI 207/3			
3	1		BET 305/4	BAT306/3	BET 304/4
			BGT 301/3	BAT307/3	BET 305/4
			BGT 302/2	BAT308/3	
	2		BBT 305/4	BAT304/4	BET 306/3
			BST 306/3	BAT305/3	BET 307/3
4	1	BOI 401/3	BGT 400/3	BAT401/4	BET 401/4
			BGT 401/4	BAT404/4	BET 402/4
			BGT 402/4	BET404/3	BET 404/3
	2		BGT 401/4	BAT401/4	BET 401/4
			BGT 403/2	BAT402/3	BET 403/3
			BGT 404/3	BAT403/3	BET 405/3
					BET 406/3
TOTAL		**38**	**36**	**37**	**38**

	Biotechnology (38 units)	Environmental Biology (38 units)	Elective (14-15 Units)	Minor (16 unit)	University (18 units)	TOTAL
					WUS 101/2	**12**
					University/2	
					LKM 100/2 **OR**	**20**
					LKM 400/2	
					University/2	
			BOT205/3	Minor/4	HFF 225/2	**15**
					University/2	
			BOE201/3	Minor/4	HFE 224/2	**18**
					University/2	
	BTT306/3	BST305/3	Elective/3	Minor/4		**13-19**
		BST306/3				
		BAT306/3				
		BAT308/3				
	BMT305/3	BST307/3		Minor/4	University/2	**12-15**
	BMT309/3	BST308/3				
	BMT311/3					
	BTT305/3					
	BTT 401/4	BST401/4	Elective/3			**17-18**
	BTT 402/3	BST402/3				
	BTT 404/3	BST405/3				
	BTT 401/4	BST401/4	Elective/3			**12-16**
	BTT 403/3	BST403/3				
	BBT 403/3	BST404/3				
	BBT 405/3					
	38	**38**	**14-15**	**16**	**18**	

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