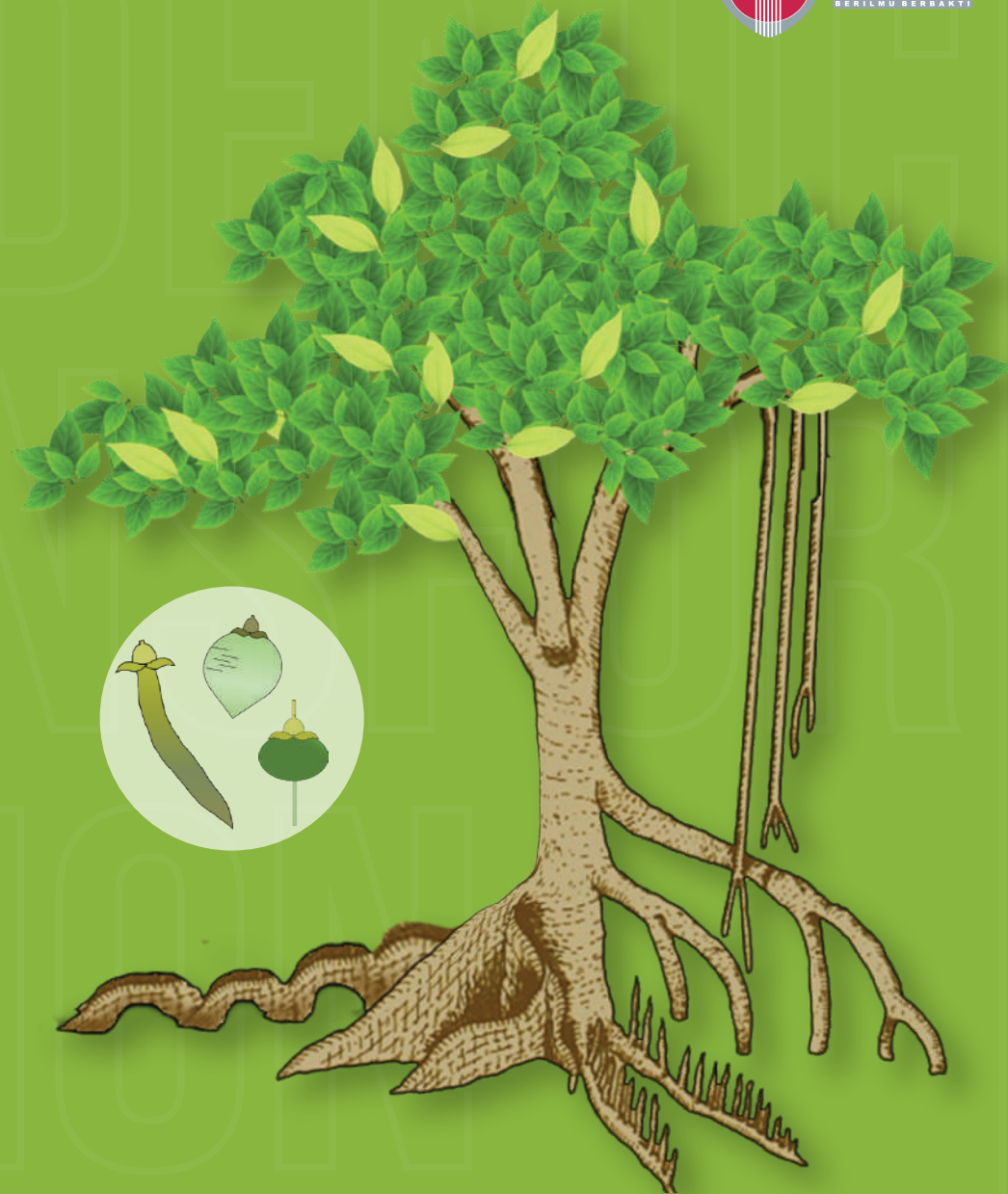


PUTRAFLEX: UPM Flexible Curriculum



PUTRAFLEX: UPM Flexible Curriculum

ISBN 978-967-960-461-0

© Centre for Academic Development (CADe), Universiti Putra Malaysia

First Print 2019

All Rights Reserved.

No part of this publication may be reproduced in any form without permission in writing from the publisher.

Centre for Academic Development (CADe)
Office of the Deputy Vice-Chancellor
(Academic and International)
4th Floor, Canselori Putra Building
Universiti Putra Malaysia
43400 UPM Serdang, Selangor.

ISBN 978-967-960-461-0



03-9769 6175



cade@upm.edu.my



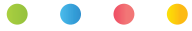
<https://cade.upm.edu.my>

PUTRA

FILEX

UPM Flexible Curriculum

PREAMBLE



The playbook in your hand is one of the outputs of the Academic Transformation, an initiative launched by the Deputy Vice-Chancellor's Office (Academic & International), Universiti Putra Malaysia (UPM). The aim of this initiative is to formulate guidelines for the development of a Future Ready Curriculum. As part of the initiative, the Curriculum Redesign Task Force was established with the objective of preparing the guidelines for developing a "flexible curriculum" at UPM.¹ The main focus of the Task Force is on the conceptualisation of a "flexible curriculum", which is subsequently translated into guidelines with relevant directions, suggestions and recommendations. Serious attention is given to the feasibility or practicality of its implementation, bearing in mind UPM's existing strengths and abilities. This playbook aims to provide a preliminary introduction and overview of PUTRAFLEX as a guide to the concept and structure of a "flexible curriculum" for UPM. Therefore, the playbook contains infographics which help present preliminary ideas on PUTRAFLEX. However, to gain a better understanding, the reading of this playbook should be followed by the guidebook entitled *PUTRAFLEX: Guidebook For Development of UPM's Flexible Curriculum* (also published in Malay version) which explain in detail its implementation in UPM. To further expand its readership and its benefits, the book is available in two versions, Malay and English. It is our hope that this playbook will help academic staff gain an insight into the development of a flexible curriculum, and will also help students in designing their studies at UPM.

CONTENT



SECTION 2

PUTRAFLEX
Disciplines Convergence
and Curriculum
Components

SECTION 4

PUTRAFLEX
Simulation for Curriculum
Components and
Career Prospects



SECTION 3

PUTRAFLEX
Diverse Study Paths
and Directions



SECTION 1

PUTRAFLEX
Philosophy and
Characteristics



PUTRAFLEX

PHILOSOPHY AND
CHARACTERISTICS

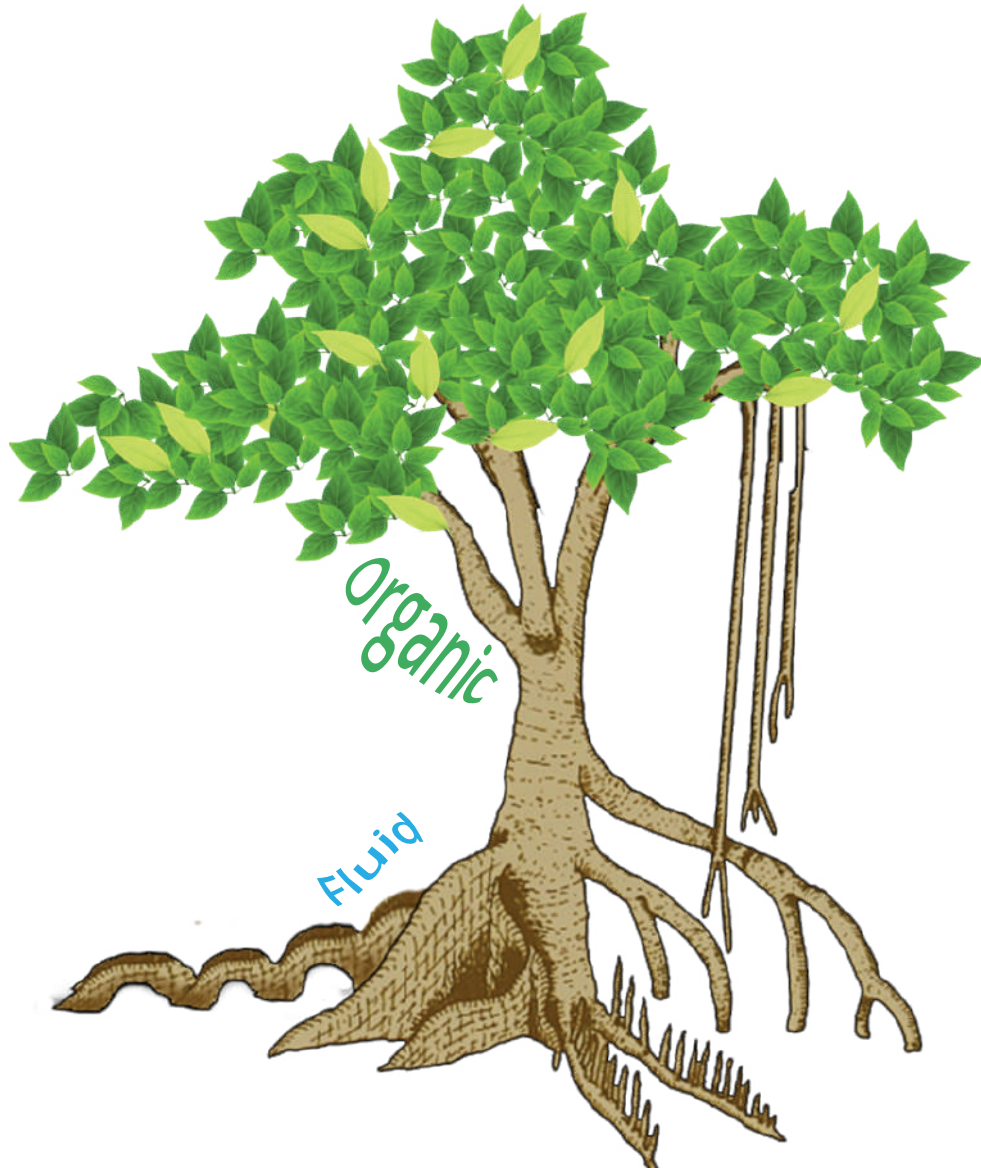
WHAT IS PUTRAFLEX?



PUTRAFLEX is the brand name of the flexible curriculum formulated and structured for Universiti Putra Malaysia. The name is a portmanteau, coined from a combination of the words “Putra” and “flex”. “Putra” is taken from UPM, and is often used in initiatives involving UPM students, whereas “flex” is an abbreviation of the word “flexible”, thus reflecting the nature of the curriculum itself. PUTRAFLEX is structured with an underpinning philosophy of producing Future-Proof PUTRA Graduates through a curriculum that is flexible in nature, promotes the convergence of disciplines, and offers diverse study paths. Accordingly, PUTRAFLEX contains the concepts and guidelines for its implementation at UPM.



WHAT IS “FLEXIBLE CURRICULUM” ?

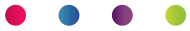


Conceptually, a “**flexible curriculum**” is described as a curriculum that emphasises two key characteristics, which are, “fluid” and “organic”.²

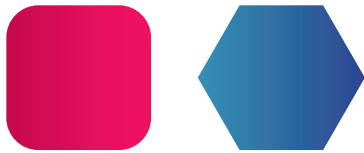
The word “**fluid**” refers to the nature of a substance that is continuously flowing, liquid or unsolidified. A fluid curriculum is therefore not fixed or rigid, and easily adapts and adjusts in response to circumstances.³

The word “**organic**” refers to a natural characteristic, one that is not synthetic or artificial. An organic curriculum, therefore, is one which encourages learning to grow in its natural state, whereby students are allowed to grow as learners by exploring knowledge/skills of their own choice.⁴

CONVERGENCE OF DISCIPLINES



The content of a flexible curriculum should be vibrant and alive, and should be able to develop naturally. The content must also not be rigid, and should be able to respond to current changes. Such characteristics can be realised through a convergence of disciplines whereby existing knowledge and skills are combined, expanded and interacted via interdisciplinary, multidisciplinary and transdisciplinary approaches. Convergence of disciplines enables the curriculum to become flexible as new knowledge and skills emerge in response to current developments, changes and needs.⁵



Multidisciplinary

Two or several different disciplines combine to solve the same problems/issues through the perspective of each discipline - all disciplines remain within their own borders.



Interdisciplinary

Two different disciplines integrate to solve the same problems/issues through an integration of perspectives from both disciplines - the boundaries between disciplines are beginning to be loosened.



Transdisciplinary

Two or several different disciplines combine to solve the same problems/issues through a common perspective which transcends the combined disciplines - the boundaries between disciplines are fully loosened, thus producing a new discipline.

DIVERSE STUDY PATHS



- 
- *Students' interests*
 - *Advancements in technology*
 - *Changes in industrial landscape*
 - *Global needs*



A flexible curriculum is also characterised by its ability to meet students' individual needs. Such characteristic can be achieved through a curriculum structure that gives students the freedom to choose the knowledge and skills they desire to learn. Therefore, a flexible curriculum should allow for the convergence of disciplines, and should allow students the freedom to design their own study paths. The flexible curriculum also considers students' interests and responds to students' interests, including advancements in technology, changes in the industrial landscape, and global needs.



THE NATURE OF FLEXIBLE CURRICULUM



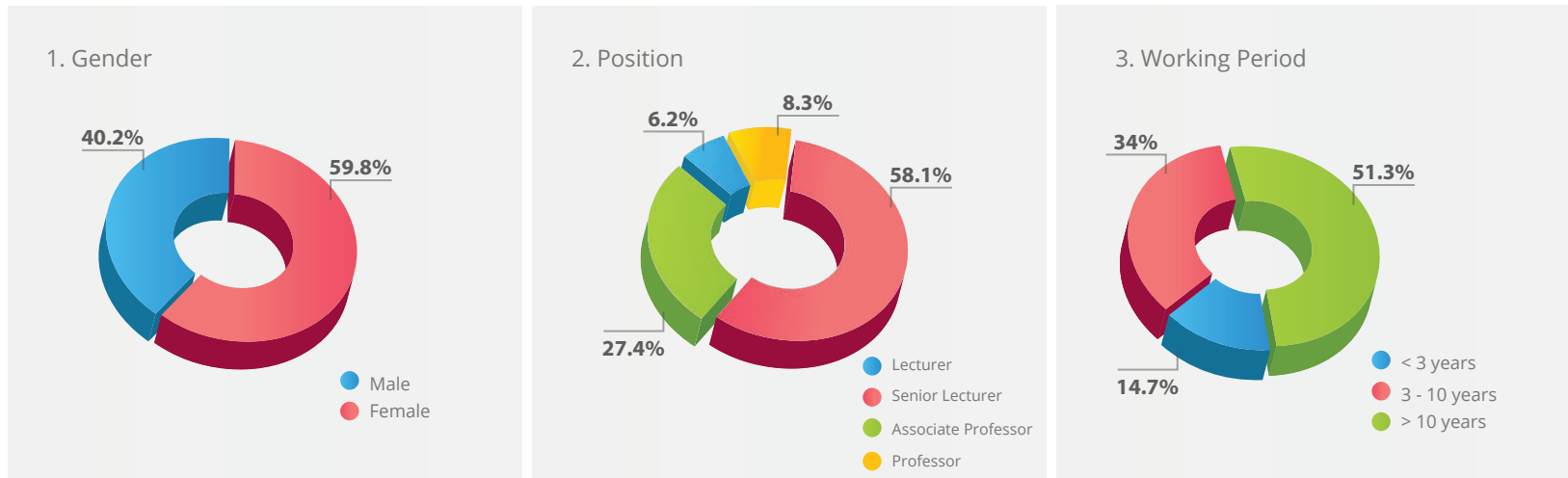
A "flexible curriculum" is a curriculum that is vibrant and is continuously growing in keeping with students' personal interests and needs.

A "flexible curriculum" is also not fixed or rigid, and allows students to develop their individual potential through the knowledge and skills that they are interested in or need, in order to deal with future challenges.

The nature of a "flexible curriculum" should be one that encourages a convergence of disciplines and offers students with choices that enable them to design their own studies.

SURVEY

Demographics of Respondents: UPM Academic Staff



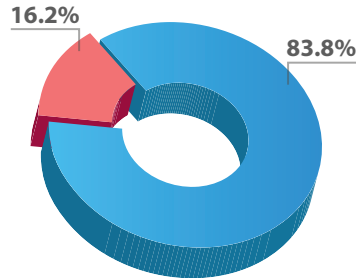
Response from academic staff is crucial for the successful development and implementation of PUTRAFLEX. To this end, a survey was conducted to obtain feedback from UPM's academic staff. The survey focused on three aspects namely, reflection on the existing curriculum, views on the concept of "flexible curriculum", and their readiness for the "flexible curriculum". The survey received feedback from 468 faculty members of the 16 faculties of UPM.

SURVEY

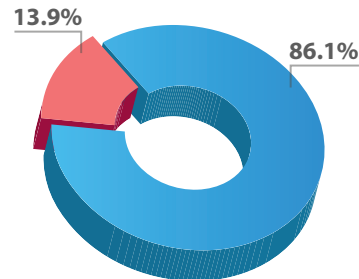
Readiness for Flexible Curriculum among UPM Academic Staff

● Yes ● No

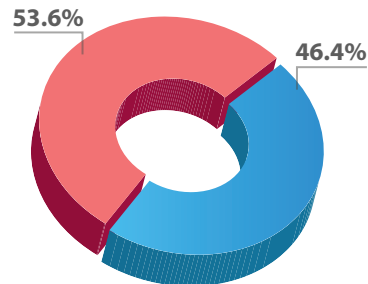
Do you agree if students are given the opportunity to integrate the core of the program with other fields?



Do you agree that students are given the freedom to choose the elective courses offered by any faculty at UPM?



Do you agree that the freedom of students to choose the elective courses offered by any faculty at UPM is problematic?



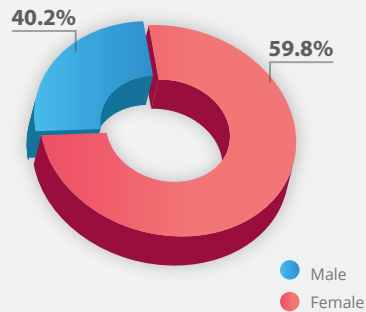
In general, the findings of this survey show that the majority of UPM academic staff welcome the efforts to develop a curriculum that gives students the freedom to design their own programmes of study. In carrying out this initiative, attention should be given to several anticipated challenges that may arise, such as the matter of coordinating class schedules and the use of lecture halls /classrooms.

SURVEY

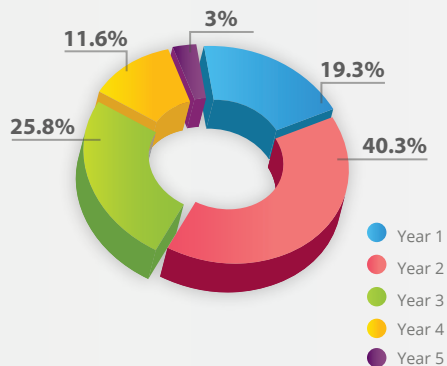
Demographics of Respondents: UPM Students



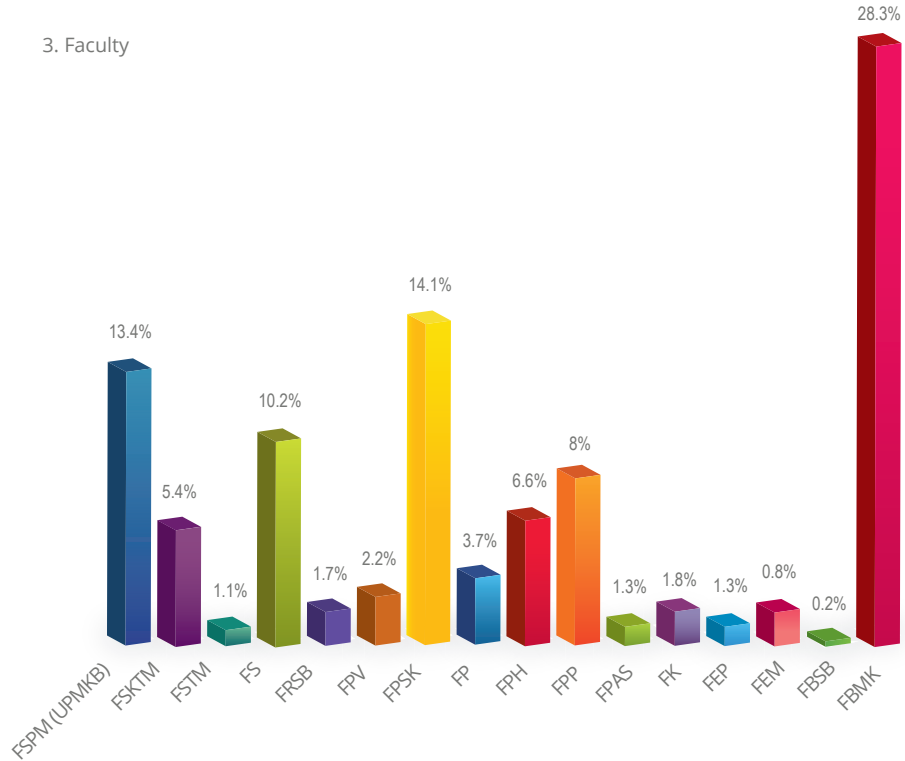
1. Gender



2. Year of Study



3. Faculty

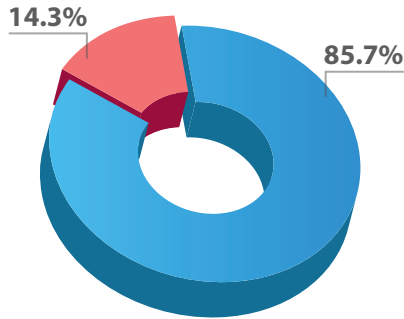


In developing a curriculum, student response provides important input that must be given serious consideration. A survey was also conducted to obtain feedback from UPM students on two aspects, namely i) reflection on the existing curriculum, and ii) insights on the concept of flexible curriculum. This survey received feedback from 837 students currently pursuing programmes at 16 faculties in UPM.

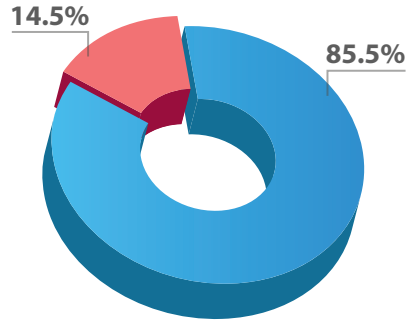
SURVEY

Students' Views on Existing and Flexible Curriculum

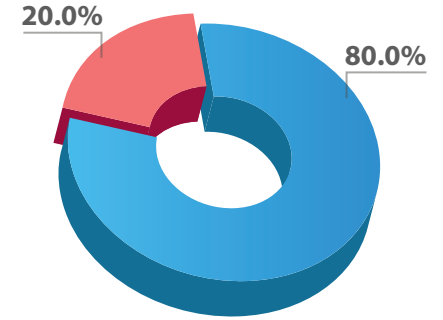
● Yes ● No



Are the courses you follow in the same field of study?



Do you agree to be given the opportunity to integrate your core (programme core) with other fields?



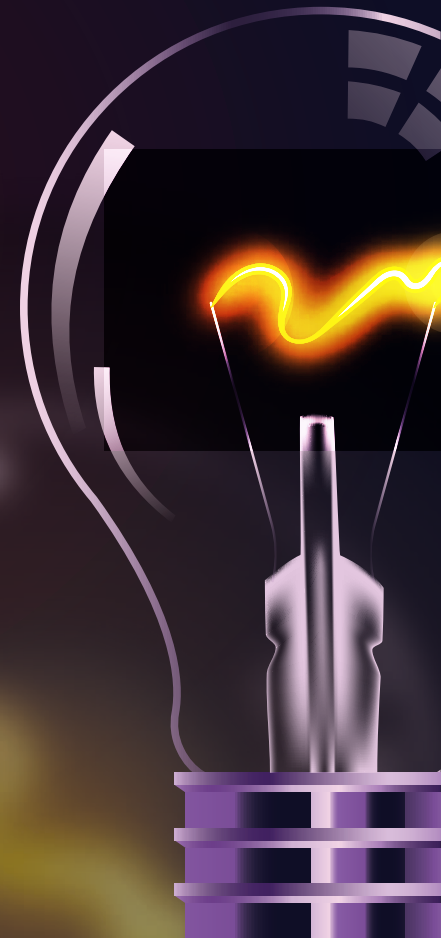
Do you agree to be given the freedom to choose your elective courses offered by any faculty at UPM?

The findings give the impression that most students welcome efforts to develop curriculum structures that encourage a convergence of disciplines, and that give them the freedom to design their own learning.

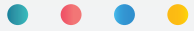
PUTRAFLEX: PHILOSOPHY



PUTRAFLEX is an effort to produce Future-Proof PUTRA Graduates through the development of a flexible curriculum which is organic and fluid in nature, i.e., which allows for disciplines convergence and diverse study paths.



PUTRAFLEX: OBJECTIVES



To provide guidelines for faculties in developing a flexible curriculum which allows for disciplines convergence

To provide guidelines for students in designing their own study paths based on their interests or current needs

PUTRAFLEX: THE CHARACTERISTICS



CONVERGENCE OF DISCIPLINES

Encourages interdisciplinary, multidisciplinary and transdisciplinary approaches



Allows for the emerging of new knowledge and skills based on existing programmes in UPM



Provides more options in learning



VARIOUS STUDY PATHS

Fulfil students' personal and individual needs and interests



Give students the liberty to learn the knowledge/skills they desire



Allow students to design their own study programmes

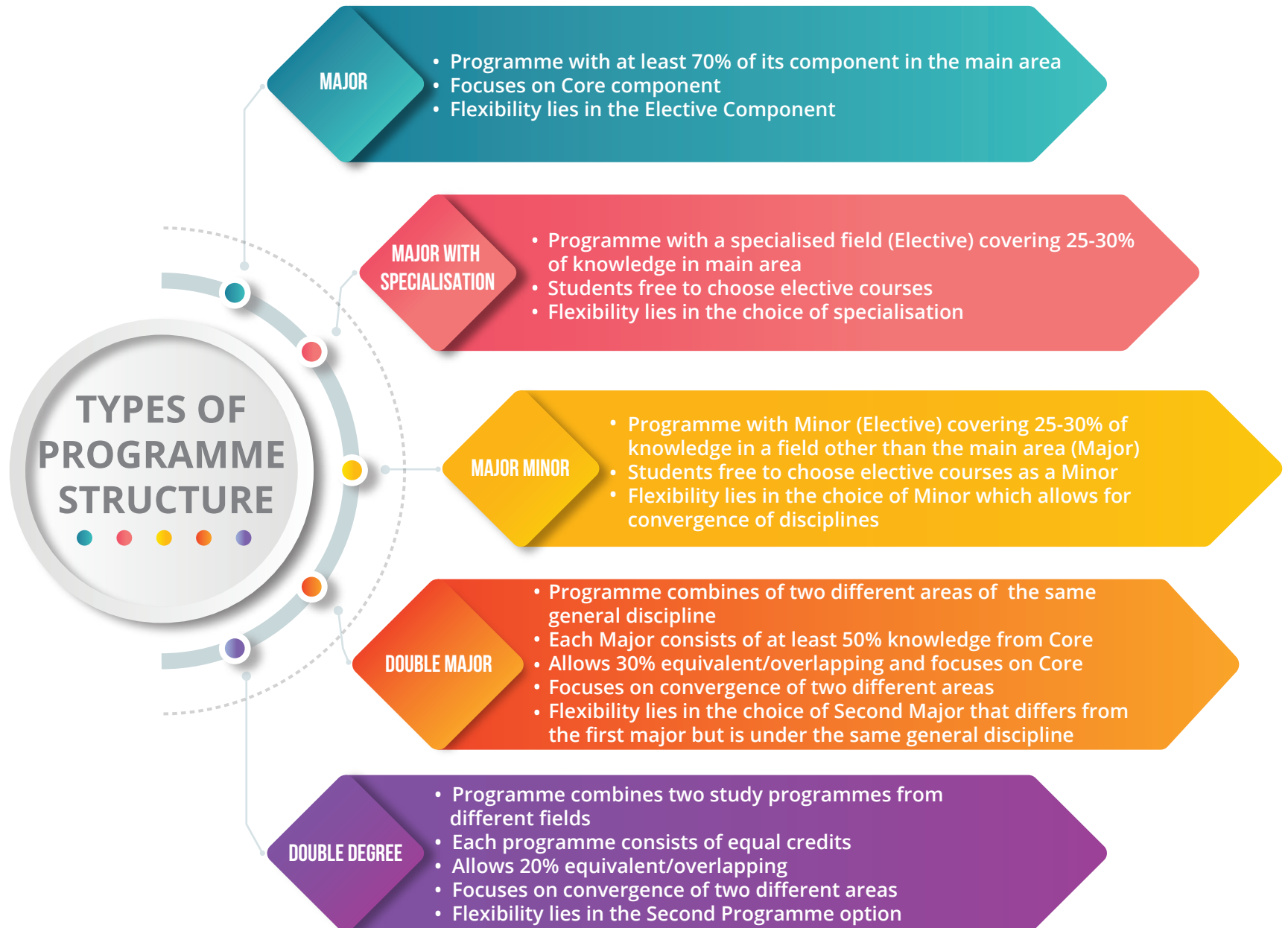




PUTRAFLEX

DISCIPLINES CONVERGENCE
AND CURRICULUM
COMPONENTS

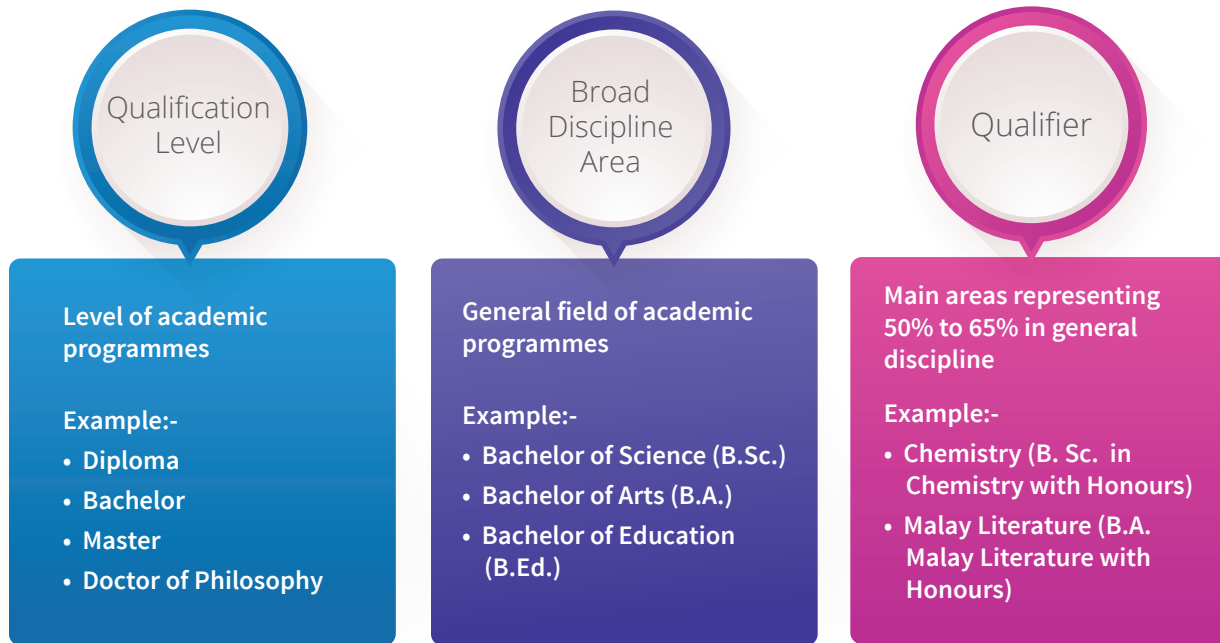
With regard to academic programmes, PUTRAFLEX's flexibility lies in the 5 types of programme structure, each with its own definitions, components and weightage. The components in each type of programme structure are designed to allow for the convergence of disciplines. This convergence is made possible when existing programmes at UPM are combined in the structured components under the 5 types of programme structure. The advantage of PUTRAFLEX is that students are given the freedom to converge knowledge and skills according to their own interests and needs. This freedom is realised through 5 Study Paths which are also based on the 5 types of programme structure.⁶



PROGRAMME NOMENCLATURE



Gives a comprehensive overview of the qualification level and field of an academic programme based on 3 components :-



- The name of the study programme stated in the offer letter is identical to the name in The Students Admission Management System (*Sistem Bahagian Pengurusan Kemasukan Pelajar*), Department of Higher Education (JPT), Ministry of Education Malaysia and Application for National Higher Education Fund Corporation (PTPTN).
- Under PUTRAFLEX, the name of the degree awarded is determined by the Equivalency Committee (*Jawatankuasa Persetaraan*) based on the Study Path chosen by the student.

DEGREE NOMENCLATURE



Name of the degree awarded to students upon fulfilling the requirements stipulated by the UPM Senate. Under PUTRAFLEX, the name of the degree is determined by the choice of Study Path by students and is not necessarily the same as the programme name stated in the offer letter.

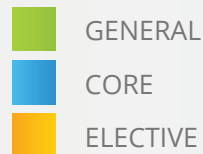
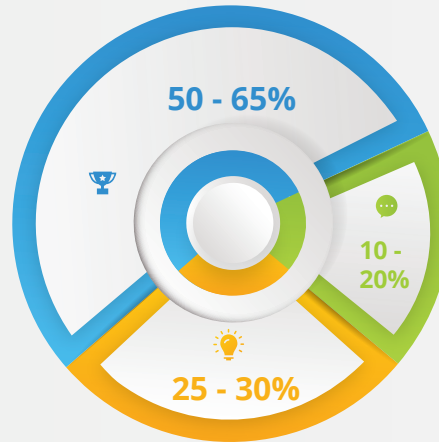
MAJOR	<ul style="list-style-type: none">• Bachelor of Science in Chemistry with Honours• Bachelor of Arts in Malay Literature with Honours
MAJOR WITH SPECIALISATION	<ul style="list-style-type: none">• Bachelor of Science in Chemistry (Environmental Management) with Honours• Bachelor of Arts in Malay Literature (Performing Arts) with Honours
MAJOR MINOR	<ul style="list-style-type: none">• Bachelor of Science in Chemistry with Entrepreneurship (Honours)• Bachelor of Arts in Malay Literature with Multimedia Application (Honours)
DOUBLE MAJOR	<ul style="list-style-type: none">• Bachelor of Science in Chemistry and Science and Food Technology (Honours)• Bachelor of Arts in Malay Literature and Human Communication (Honours)
DOUBLE DEGREE	<ul style="list-style-type: none">• Bachelor of Science in Chemistry with Honours and Bachelor of Consumer Studies with Honours• Bachelor of Arts in Malay Literature with Honours and Bachelor of Parks and Recreation Science with Honours

CURRICULUM COMPONENTS

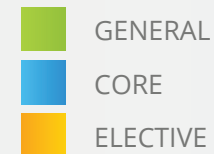
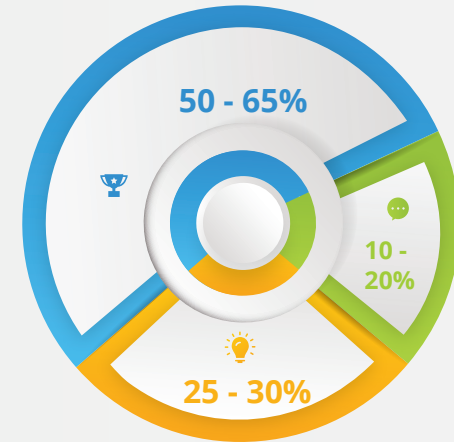


PUTRAFLEX is structured based on General, Core and Elective components. These 3 components are structured with specific composition and weightage under 5 programme structures, i.e., Major, Major With Specialisation, Major Minor, Double Major and Double Degree. Under PUTRAFLEX, the flexibility lies in the choice of two components i.e. Core and Elective which allow for convergence of disciplines

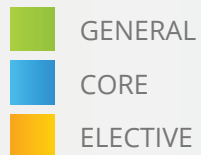
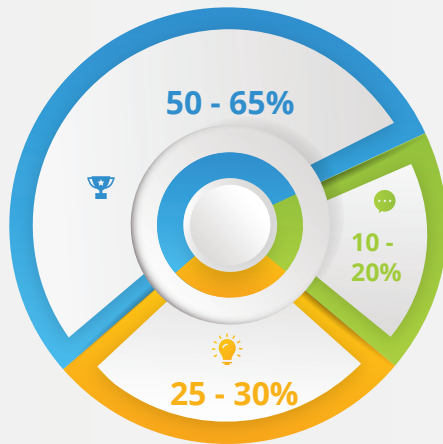
1. MAJOR



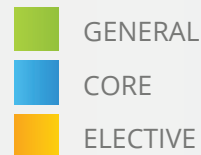
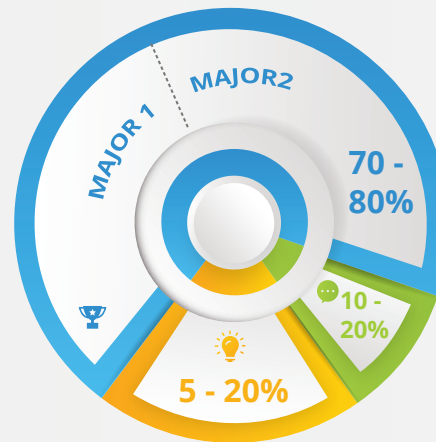
2. MAJOR WITH SPECIALISATION



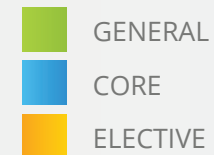
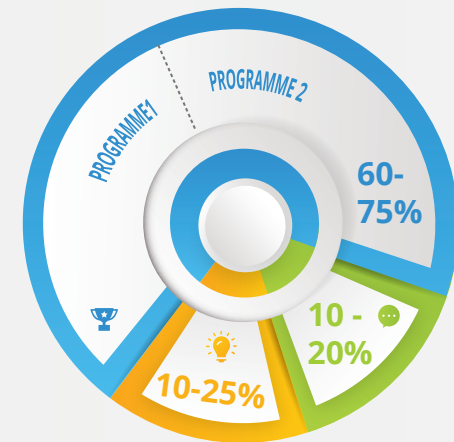
3. MAJOR MINOR



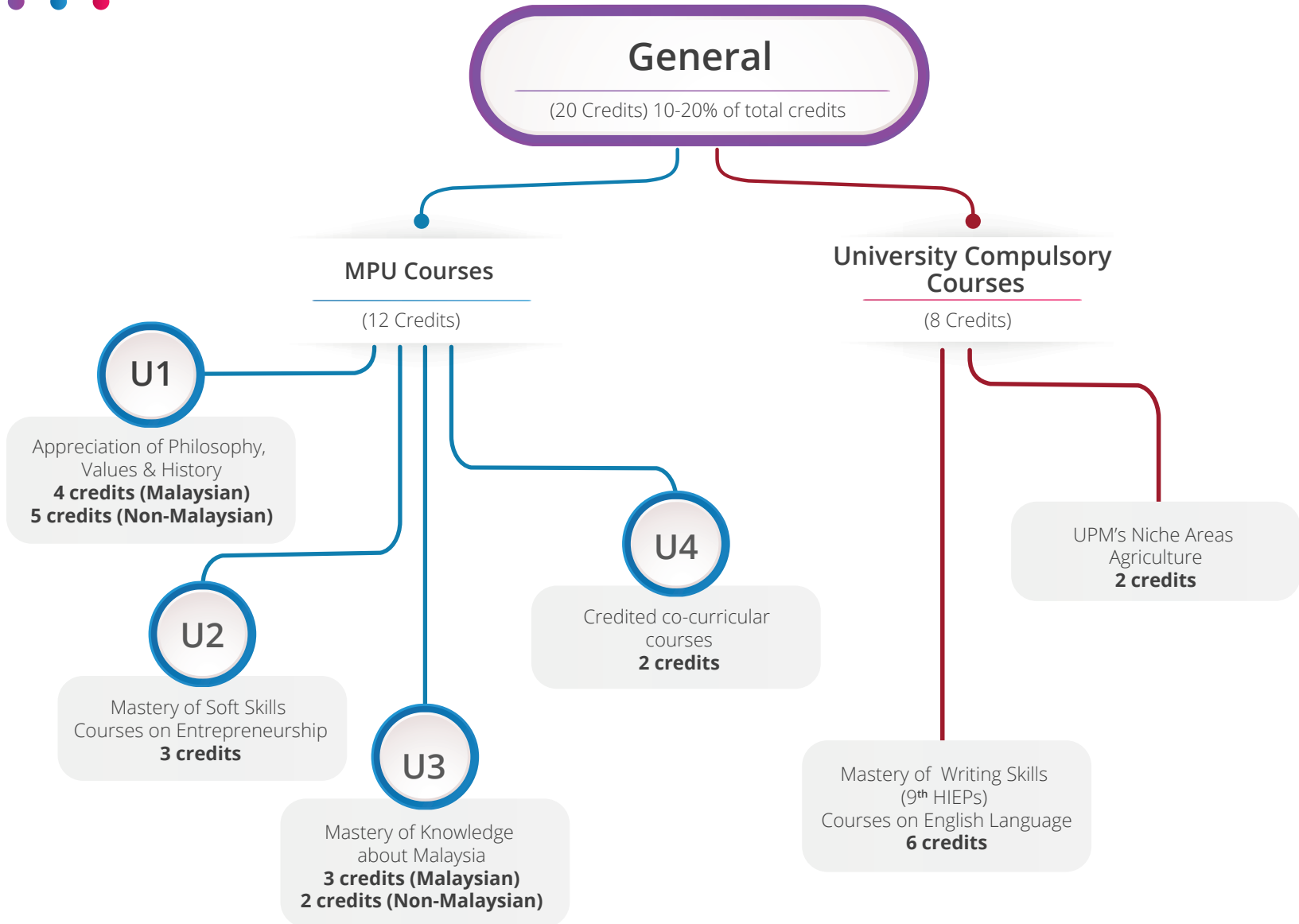
4. DOUBLE MAJOR



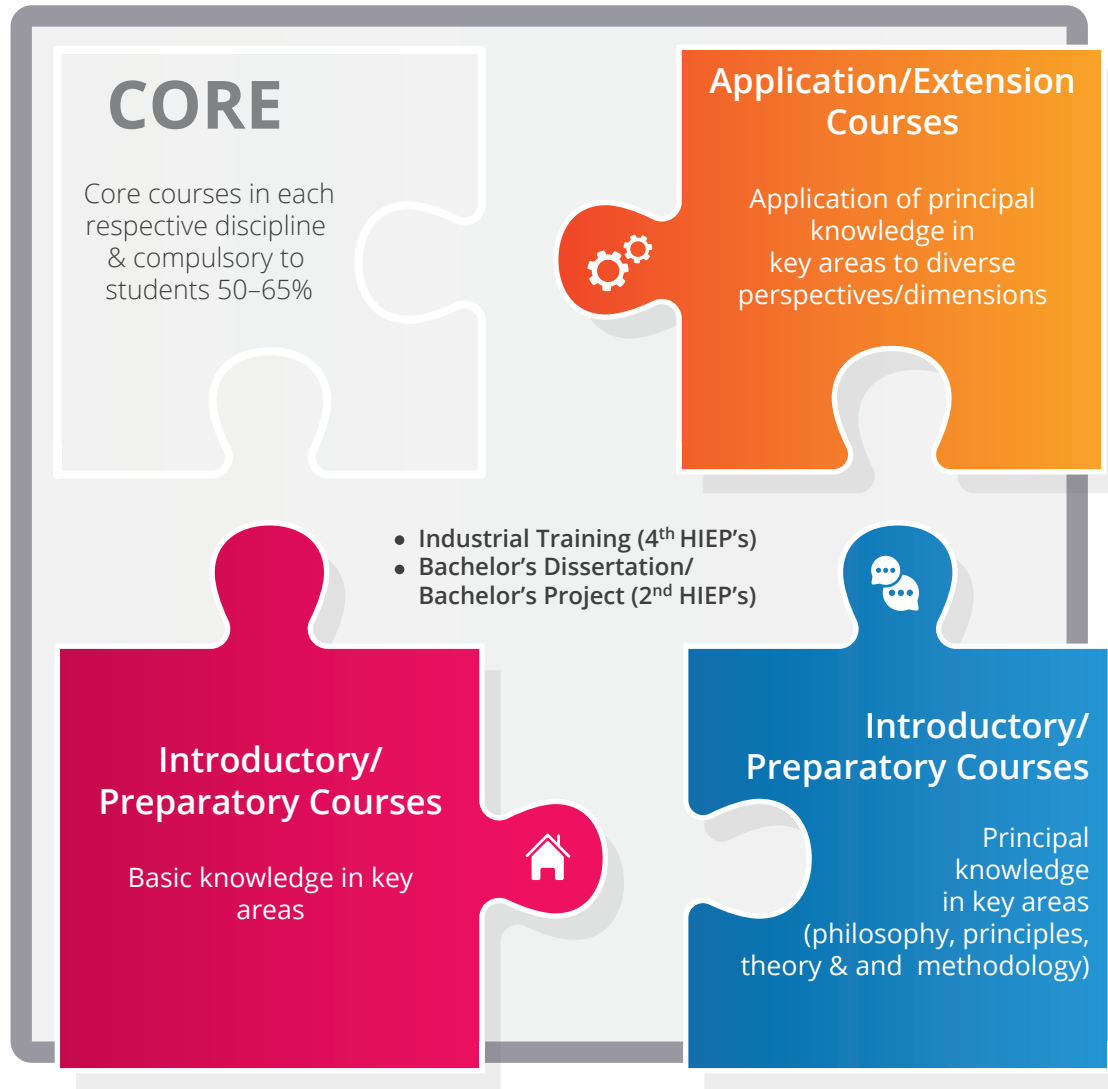
5. DOUBLE DEGREE



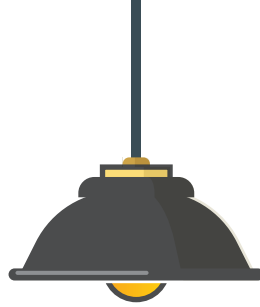
GENERAL COMPONENT



CORE COMPONENT



ELECTIVE COMPONENT



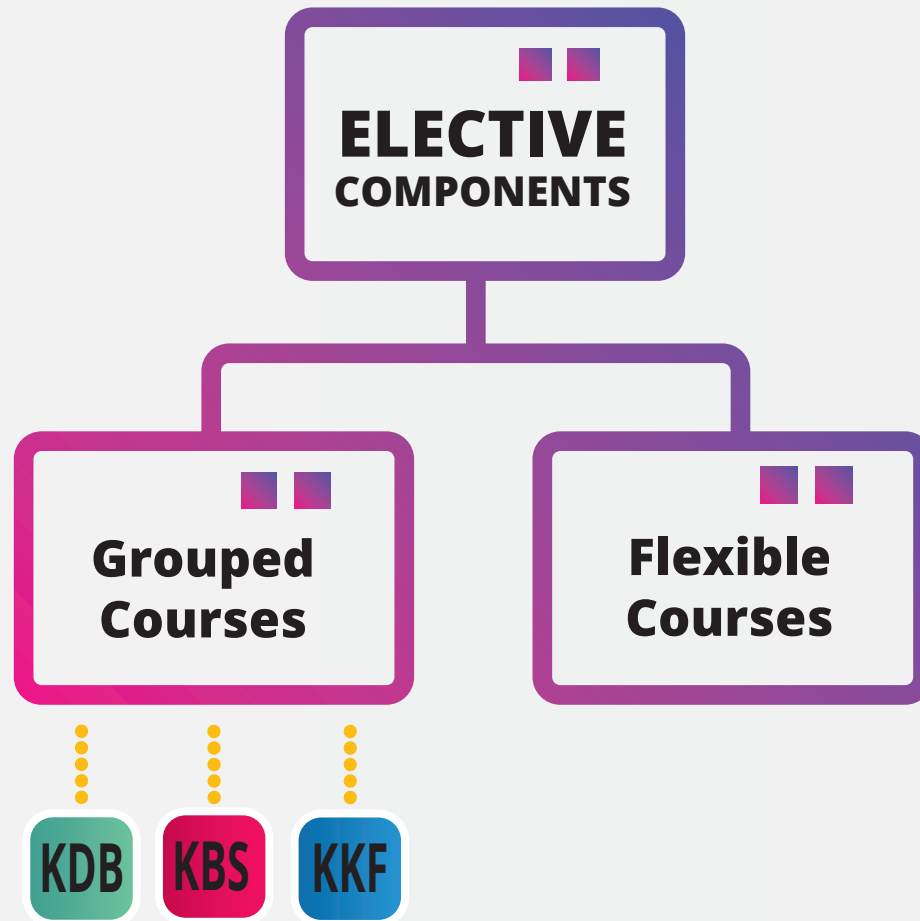
To fulfil the requirements of the Elective component, PUTRAFLEX offers two types of courses: i) Grouped Courses & ii) Flexible Courses.

The courses offered under the Grouped Courses consist of courses from the following three groups:

- i) Convergence of Discipline Group
(*Kelompok Disiplin Bertemu*) - KDB
- ii) Structured Group
(*Kelompok Berstruktur*) - KBS
- iii) Functional Skills Group
(*Kelompok Kemahiran Fungsional*) -KKF



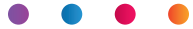
ELECTIVE COMPONENT



Elective component may include extension/specific courses on main areas, application/development of main areas and functional skills courses.

ELECTIVE COMPONENT

Grouped Courses



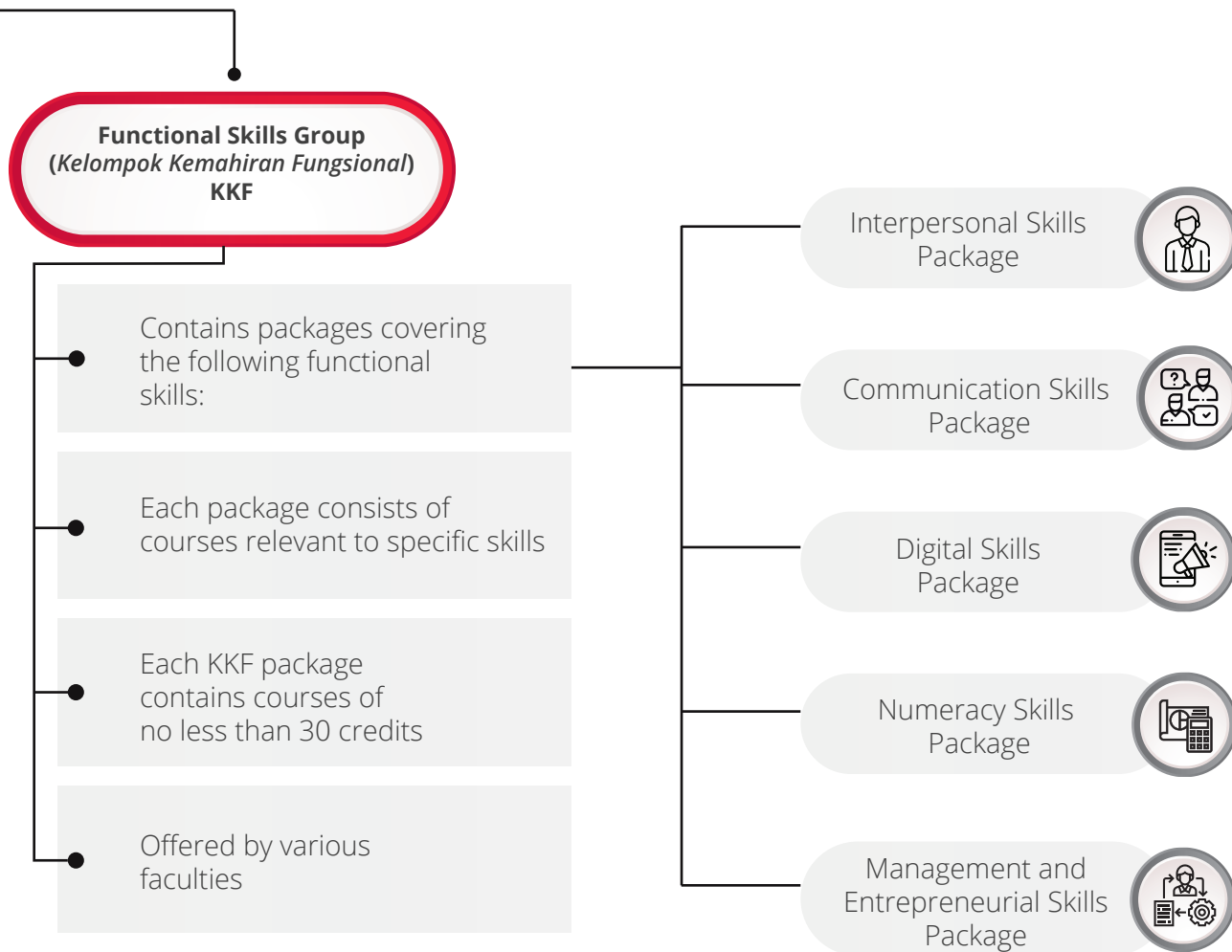
Grouped Courses

Convergence of Disciplines Group (Kelompok Disiplin Bertemu) KDB

- Courses offered by faculties/ programmes in various disciplines
- Listed independently (not in specific packages)
- Apply knowledge and/ or skills in main areas (Core)
- Integrate main areas (Core) with other disciplines/areas

Structured Group (Kelompok Berstruktur) KBS

- Contains course packages; each exceeding 30 credits (10 courses)
- Courses based on specific knowledge according to current needs in main areas
- Each package contains two types of courses:-
 - Specialised courses in main areas (Core)
 - Introductory/ preparatory courses in main areas (Core)



FLEXIBLE COURSES



Students are free to develop their own courses according to their personal/individual interests and needs, with guidance from academic advisors.



Scope of the field: **MULTIDISCIPLINARY
INTERDISCIPLINARY OR
TRANSDISCIPLINARY**

to encourage the convergence of disciplines



FLEXIBLE COURSES: The Process



01

With guidance from their respective academic advisors, students who choose Flexible Courses will develop a "Course Proposal Sheet"

02

In developing the "Course Proposal Sheet", the Academic Advisor will also nominate instructors (with relevant expertise) who will evaluate the attainment of each course's learning outcomes

03

Upon the Academic Advisor's approval, the "Course Proposal Sheet" must be submitted to the Equivalency Committee at the Faculty level who will evaluate and submit the sheet to the Equivalency Committee at the University level for credit verification

04

Upon each student's completion of Flexible Courses, the Academic Advisor will collect the evaluation marks for each learning outcome from the instructors and enter the grade in the Student Information System (SMP) for endorsement by the Senate.

05

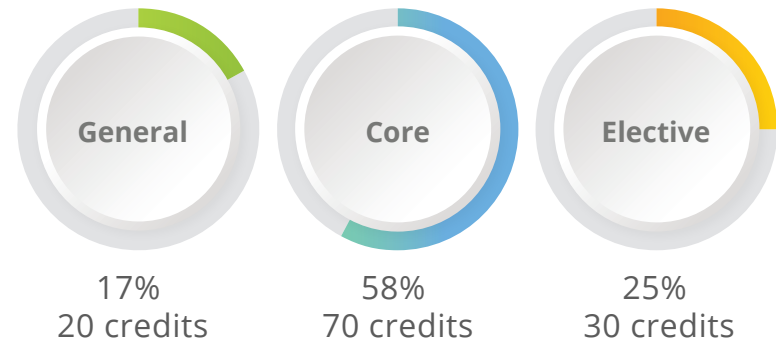
The grades will be stated in the student transcript and contribute to the Cumulative Grade Points Average (CGPA)

CREDIT CALCULATION



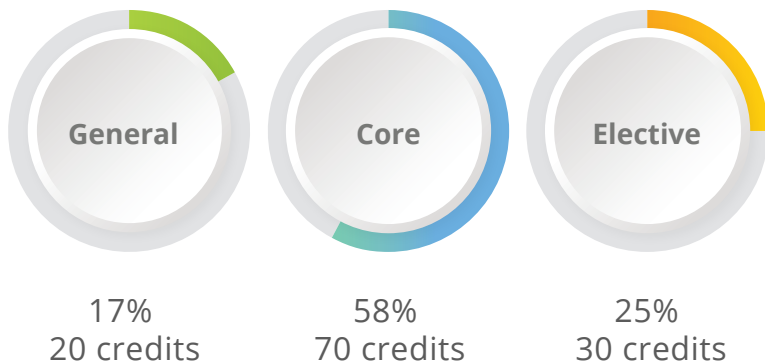
Credit calculation is credit allocation for General, Core and Elective components based on the overall credit set. It encompasses the permitted range of percentages and credits for each component. Credit calculation should be adhered to as it complies with the requirements outlined by Malaysian Qualification Framework (MQF) in each **PUTRAFLEX Study Path**.

Major
(Based on a total of 120 credits):-

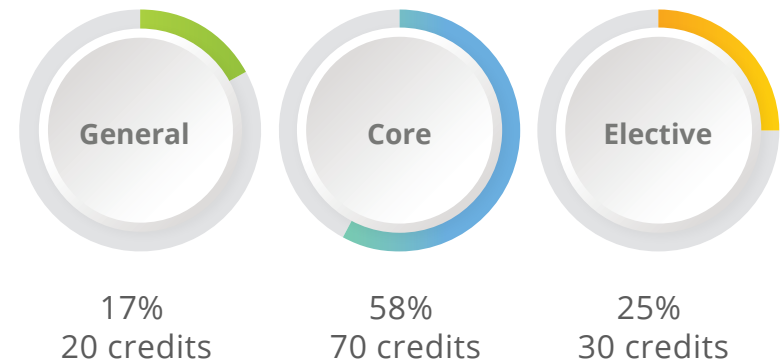


However, this credit calculation can only be adopted by programmes that are not subject to a professional body or programme standards.

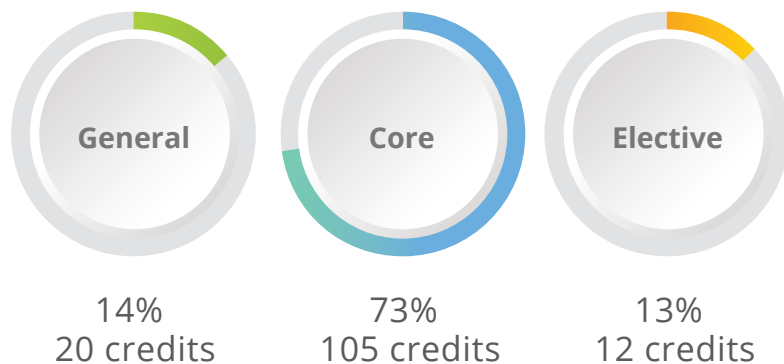
Major With Specialisation
(Based on a total of 120 credits):-



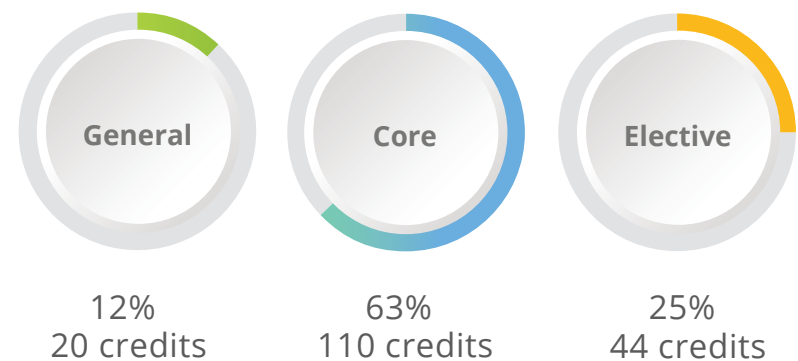
Major Minor
(Based on a total of 120 credits):-



Double Major
(Based on a total of 144 credits):-



Double Degree
(Based on a total of 174 credits):-



STRENGTHS & CHALLENGES

During Study Period



MAJOR

Strengths

- Students graduate within a specific period
- Students obtain a degree which clearly illustrates the field
- Students are free to integrate core courses with elective courses
- Faculty develops curriculum by focusing on main areas

Challenges

- Faculty needs to be meticulous in timetabling
- Students should have basic knowledge of elective courses
- Convergence of disciplines and fields may not be realised

MAJOR WITH SPECIALISATION

Strengths

- Students graduate within a specific period
- Students obtain a degree which clearly illustrates field of specialisation
- Students are free to integrate core courses with elective courses
- Faculty develops curriculum by focusing on main areas

Challenges

- Faculty needs to be meticulous in timetabling
- Students should have basic knowledge of elective courses
- Convergence of disciplines and fields may not be realised

MAJOR MINOR

Strengths

- Students graduate within a specific period
- Students obtain a degree which clearly illustrates Major & Minor fields
- Students develop knowledge/skills in different fields
- Convergence of disciplines/ fields can be realised
- Students' study experience is broad & diverse

Challenges

- Faculty needs to be flexible in timetabling
- Faculty/lecturers should develop flexible student learning time
- Lecturers should adopt innovative teaching and learning methods
- Lecturers should implement flexible assessment methods

DOUBLE MAJOR

Strengths

- Students obtain a degree which illustrates two different disciplines
- Students develop technical knowledge/skills in two different areas
- Convergence of disciplines/ fields can be realised
- Faculty can expand field of study through integration/ application

Challenges

- Students have longer study periods
- Students find studying in two different areas challenging
- Faculty needs to coordinate flexible timetabling with other faculties
- Faculty/ Lecturers should develop flexible student learning time
- Lecturers should adopt innovative teaching and learning methods

DOUBLE DEGREE

Strengths

- Students obtain two degrees
- Students develop knowledge/ skills in two different areas
- Convergence of disciplines/ fields can be realised
- Faculty can expand field of study through integration/ application

Challenges

- Students have longer study periods
- Students find studying two different programmes challenging
- Faculty needs to coordinate flexible timetabling with other faculties
- Faculty/Lecturers should develop flexible student learning time
- Lecturers should adopt innovative teaching and learning methods

STRENGTHS & CHALLENGES

Upon Graduation



MAJOR

Strengths

- Graduates have expansive knowledge/skills in Major area for daily life
- Graduates receive comprehensive exposure to key concepts in the main field, and can utilise them to solve national/global issues

Challenges

- Job opportunities are limited to Major area as stated on degree scroll
- Graduates are less likely to have additional knowledge/skills outside the field

MAJOR- WITH SPECIALISATION

Strengths

- Graduates have expansive specialised knowledge/skills in Major area for daily life
- Graduates receive comprehensive exposure to key concepts and specialised knowledge/skills in the main field, and can utilise them to solve national/global issues

Challenges

- Job opportunities are limited to Major area and specialisation as stated on degree scroll
- Graduates are less likely to have additional knowledge/skills outside the field

MAJOR MINOR

Strengths

- Graduates are ready for the latest global developments, after pursuing Minor in line with current needs
- Graduates have added value in having knowledge and skills outside the main field
- Job opportunities are wider with an additional field stated on degree scroll

Challenges

- Graduates are expected to have knowledge/skills in two fields of study
- Graduates are assumed to be more competent than graduates from Major and Major With Specialisation programme structures
- Graduates are expected to be resilient and versatile, having been exposed to an additional field of study

DOUBLE MAJOR

Strengths

- Graduates are ready for the latest global developments, after pursuing two Majors in line with current needs
- Graduates have much added value in having knowledge and skills in two different fields
- Job opportunities are much wider with two different fields stated on degree scroll

Challenges

- Graduates are expected to have knowledge/skills in two fields of study
- Graduates are assumed to be more competent than graduates from conventional single Major programme structures
- Graduates are expected to be very resilient and versatile, having majored in two different fields of study

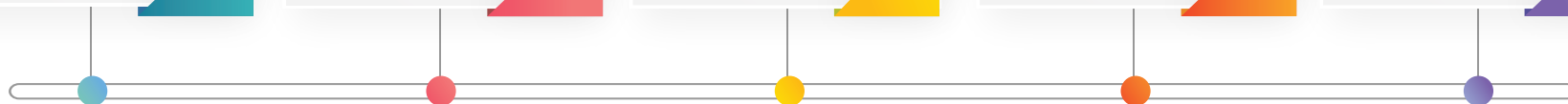
DOUBLE DEGREE

Strengths

- Graduates are ready for the latest global developments, after pursuing two degree programmes in line with current needs
- Graduates have much added value in having strong knowledge and skills in 2 areas
- Job opportunities are considerably wider with two different degree programmes stated on degree scroll

Challenges

- Graduates are expected to have extensive knowledge/skills from 2 areas
- Graduates are assumed to be much more competent than graduates from other programme structures
- Graduates are expected to be extremely resilient and versatile, having completed two degrees from different disciplines





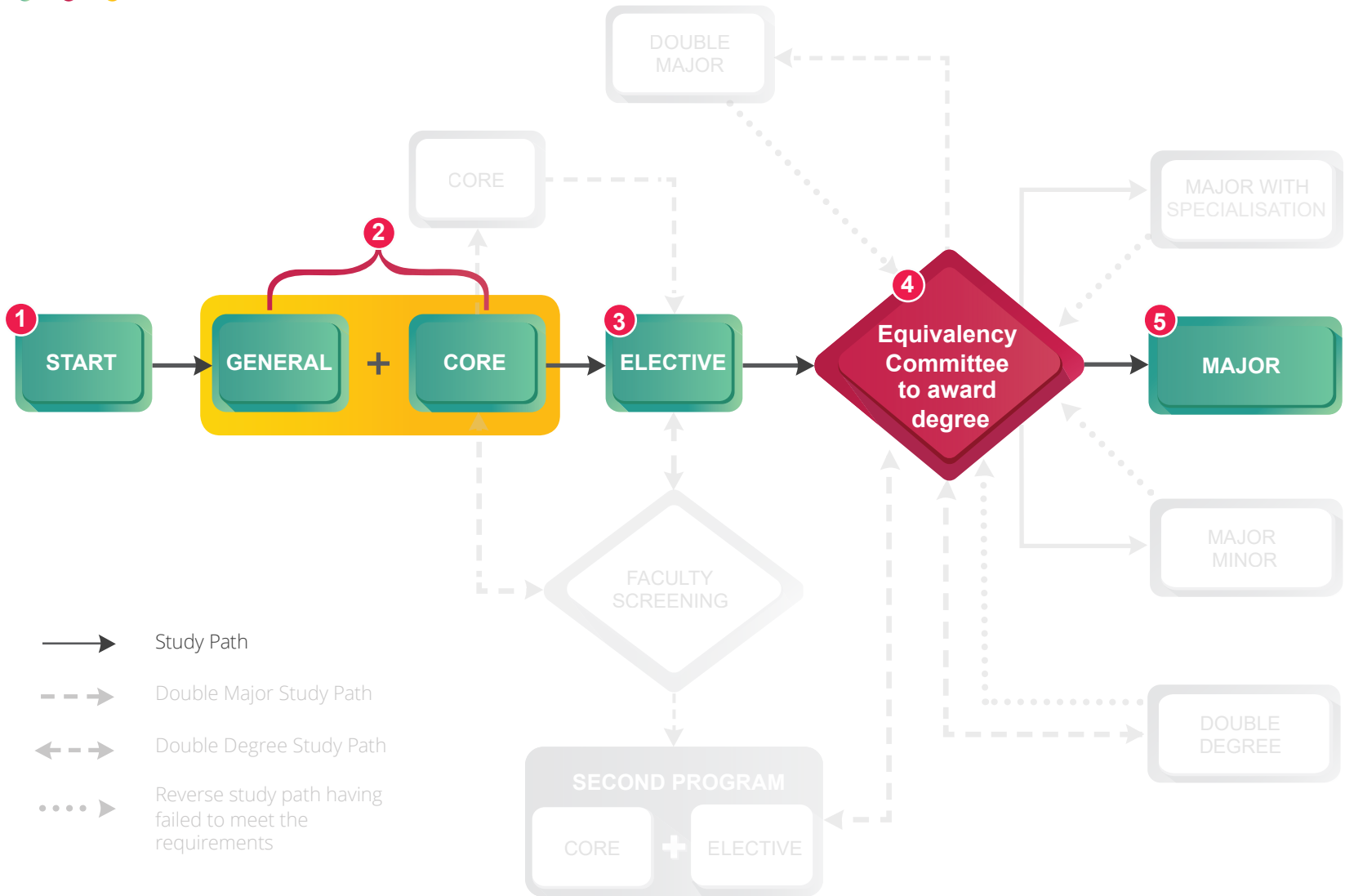


PUTRAFLEX

DIVERSE STUDY PATHS
AND DIRECTIONS

In line with the nature of a flexible curriculum which is fluid and organic, PUTRAFLEX offers students the opportunity to respond to current changes and explore their own interests and needs. This opportunity is made possible through the various choices of study path that will determine the name of degree awarded to students. The choice of a particular study path takes into consideration students' interests as well as current changes and advancements in technology, industrial landscape and global needs. In other words, PUTRAFLEX allows students to shape their own curriculum.

PUTRAFLEX MAJOR STUDY PATH



- 1 Student begins studies according to the degree programme stated in the offer letter. Students are given a briefing by the Faculty on the various study paths they can choose.

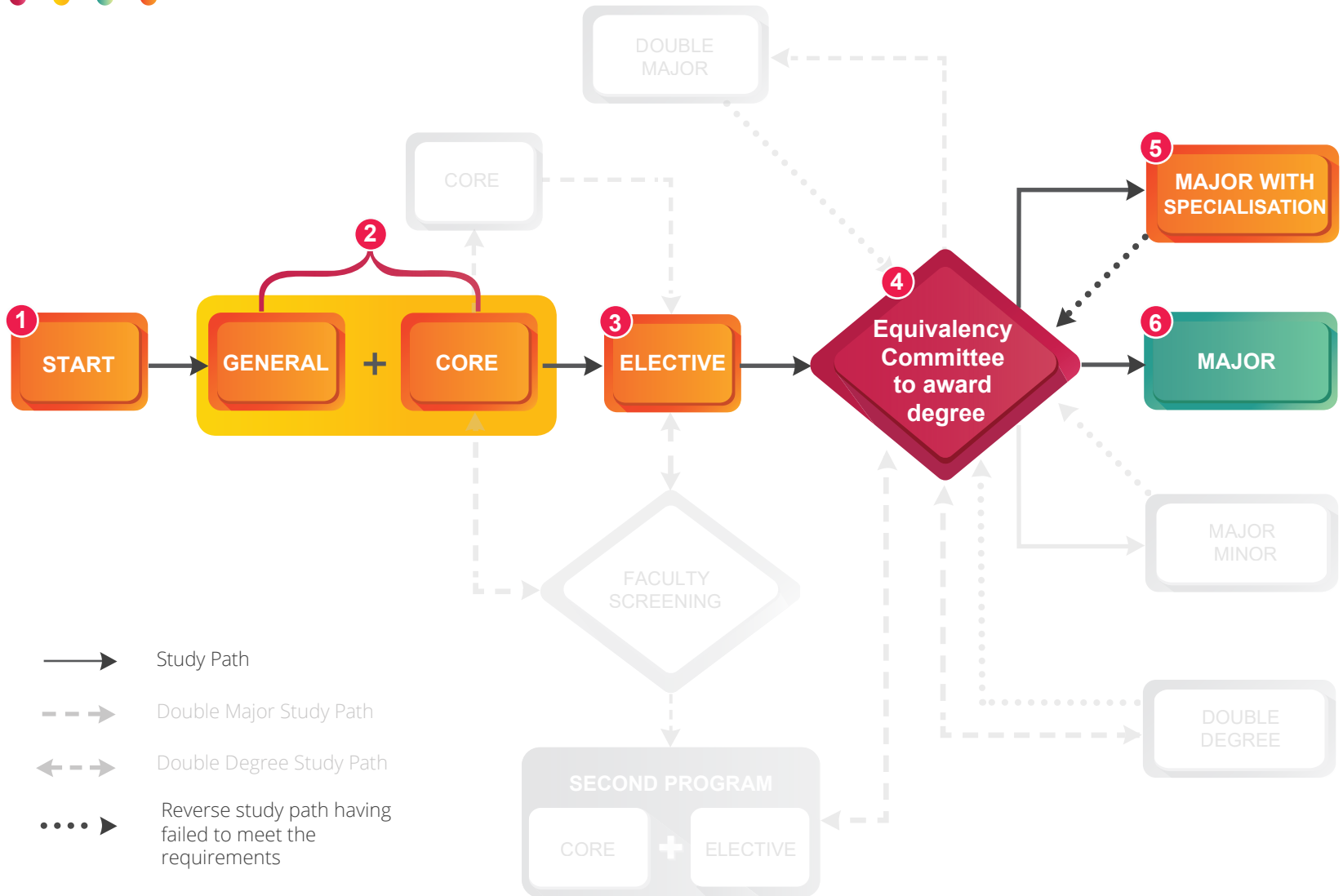
- 2 Student takes predetermined courses for General (10-20%) and Core (50-65%) components. Before beginning their Elective component, students need to choose their study paths. If a student's choice differs from the original programme offered, the Faculty must submit an application to UPM's Centre for Quality Assurance (CQA) for the student-chosen programme structure to be accredited and registered with the Malaysian Qualifications Register (MQR).

- 3 Student chooses and takes Elective courses (25-30%).
 - Elective courses are courses listed in the following groups:
 - i) Convergence of Disciplines Group (KDB) OR
 - ii) Functional Skills Group (KKF)
 - OR Flexible Courses.

- 4 Student submits Study Path Slip to Equivalency Committees at Faculty & University levels who then recommend to the Senate the type of degree to be awarded. At this point, the student-chosen programme structure is already accredited and registered in the MQR.

- 5 Upon graduation, Student who has undertaken the **Major Study Path** will receive a degree certificate which broadly states the main field of study. Examples:
 - **Bachelor of Science in Chemistry with Honours**
 - **Bachelor of Arts in Malay Literature with Honours**

MAJOR WITH SPECIALISATION STUDY PATH



- 1 Under PUTRAFLEX, Student begins studies according to the degree programme stated in the offer letter. Students are given a briefing by the Faculty on the various study paths they can choose.

- 2 Student takes courses in General (10-20%) and Core/Major (50-65%) Components. Before beginning their Elective component, students need to choose their study paths. If a student's choice differs from the original programme offered, the Faculty must submit an application to UPM's Centre for Quality Assurance (CQA) for the student-chosen programme structure to be accredited and registered with the Malaysian Qualifications Register (MQR).

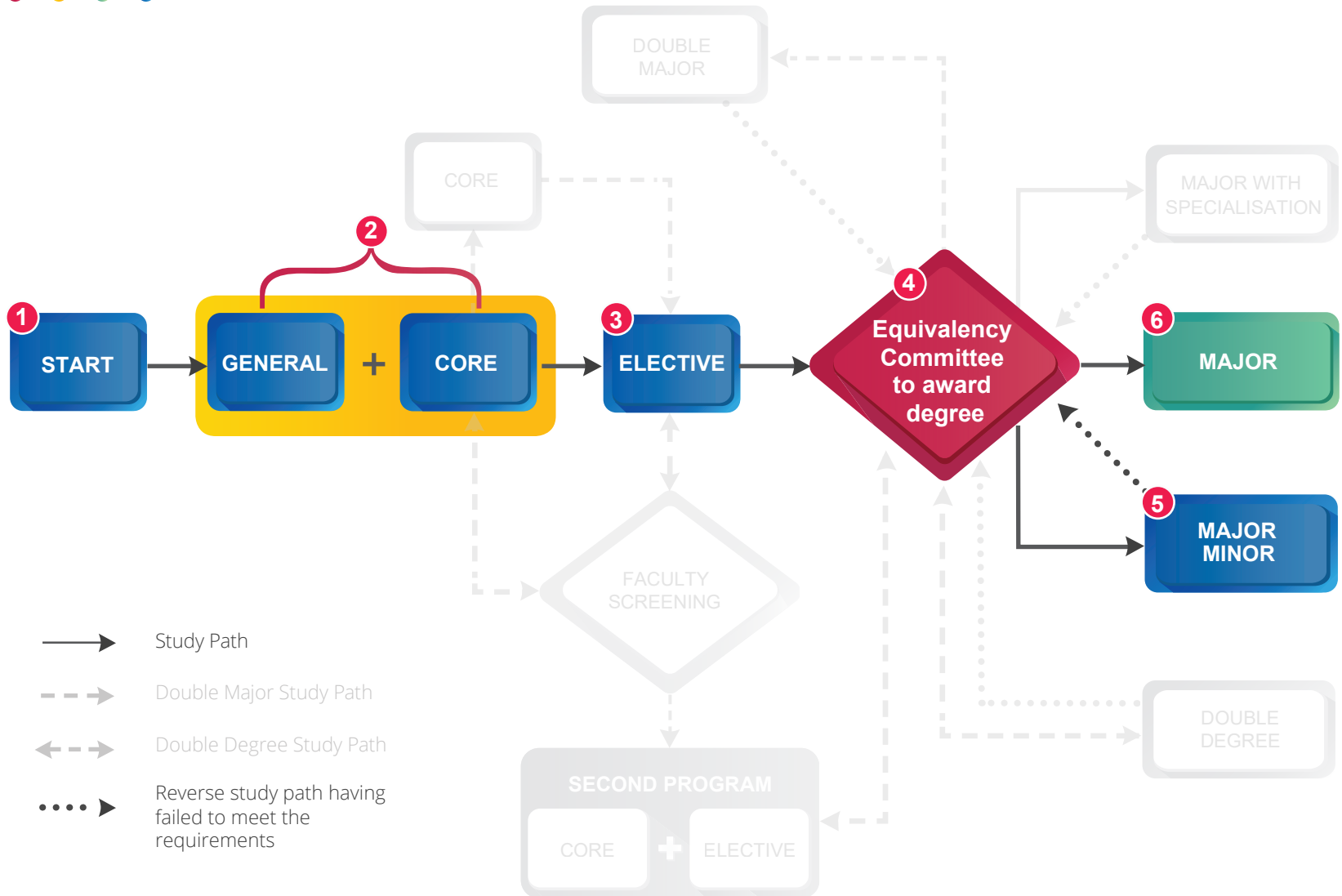
- 3 Student chooses Specialisation by taking courses (25-30%) in Specialised Package (offered under Structured Group/KBS).
 - Student is encouraged to take additional courses as Free Electives from the following groups
 - i) Other Specialised Packages (in KBS) AND/OR
 - ii) Convergence of Disciplines Group (KDB) AND/OR
 - iii) Functional Skills Group (KKF)
 - OR Flexible Courses.

- 4 Student submits Study Path Slip to Equivalency Committees at Faculty & University levels who then recommend to the Senate the type of degree to be awarded. At this point, the student-chosen programme structure is already accredited and registered in the MQR.

- 5 Upon graduation, Student who has undertaken the **Major With Specialisation Study Path** will receive a degree certificate which broadly states the discipline and the field of specialisation. Examples:
 - **Bachelor of Science in Chemistry (Environmental Management) with Honours**
 - **Bachelor of Arts in Malay Literature (Performing Arts) with Honours**

- 6 Student who remains on the Major Study Path will receive a degree certificate which broadly states the main field of study as follows:
 - Bachelor of Science in Chemistry with Honours
 - Bachelor of Arts in Malay Literature with Honours

PUTRAFLEX MAJOR MINOR STUDY PATH



- 1 Under PUTRAFLEX, Student begins studies according to the degree programme stated in the offer letter. Students are given a briefing by the Faculty on the various study paths they can choose.

- 2 Student takes courses in General (10-20%) and Core/Major (50-65%) Components. Before beginning their Elective (minor) component, students need to choose their study paths. If a student's choice differs from the original programme offered, the Faculty must submit an application to UPM's Centre for Quality Assurance (CQA) for the student-chosen programme structure to be accredited and registered with the Malaysian Qualifications Register (MQR).

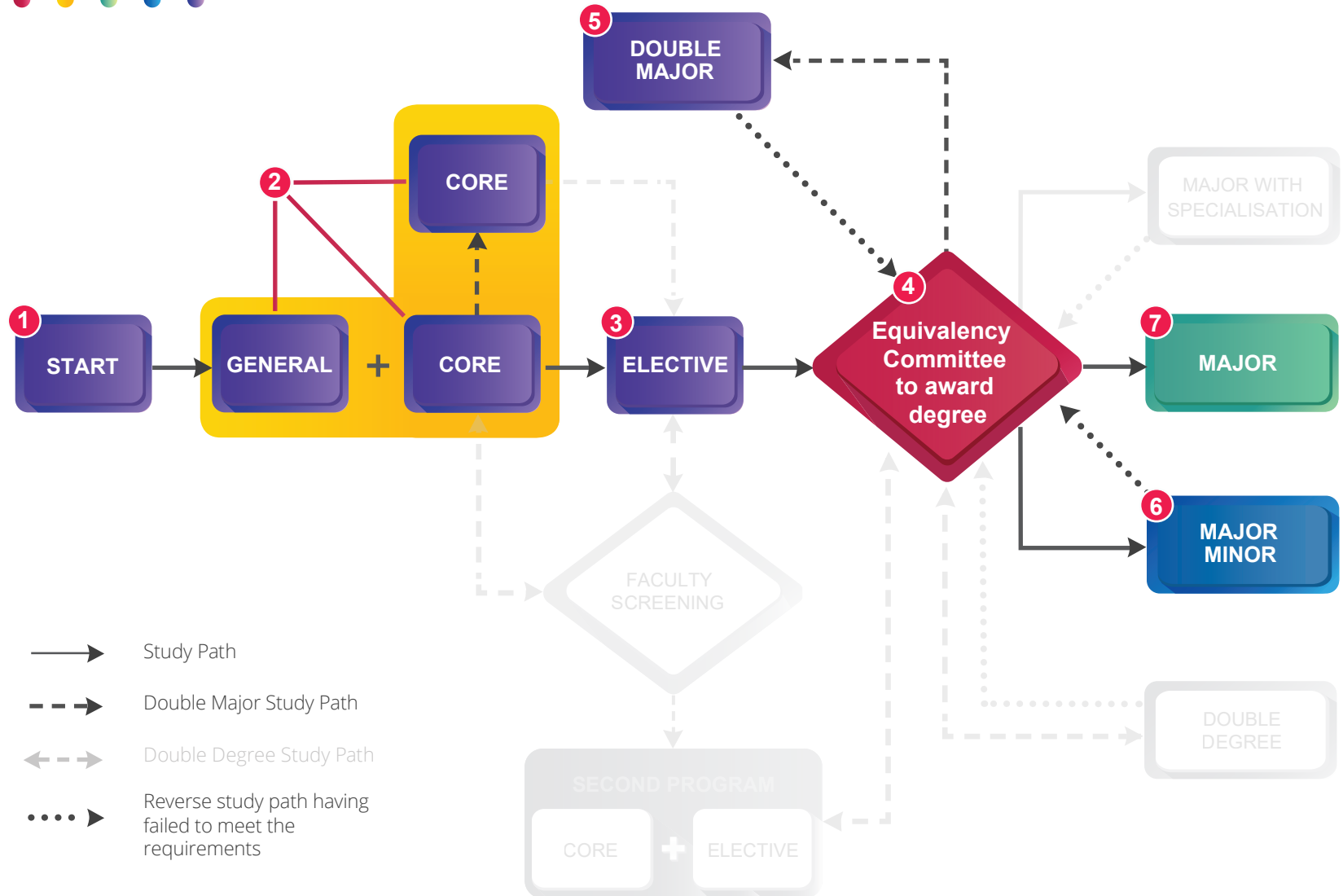
- 3 Student chooses Minor from Specialised Packages in KBS (25-30%).
 - Student is encouraged to take additional courses as Free Electives from the following groups
 - i) Other Specialised Packages (in KBS) AND/OR
 - ii) Convergence of Disciplines Group (KDB) AND/OR
 - iii) Functional Skills Group (KKF)
 - OR Flexible Courses.

- 4 Student submits Study Path Slip to Equivalency Committees at Faculty & University levels who then recommend to the Senate the type of degree to be awarded. At this point, the student-chosen programme structure is already accredited and registered in the MQR.

- 5 Upon graduation, Student who has undertaken the **Major Minor Study Path** will receive a degree certificate which broadly states the main discipline as the Major, and a different field as the Minor. Examples:
 - **Bachelor of Science in Chemistry with Entrepreneurship (Honours)**
 - **Bachelor of Arts in Malay Literature with Multimedia Application (Honours)**

- 6 Student who remains on the Major Study Path will receive a degree certificate which broadly states the main field of study as follows:
 - Bachelor of Science in Chemistry with Honours
 - Bachelor of Arts in Malay Literature with Honours

PUTRAFLEX DOUBLE MAJOR STUDY PATH



1 Student begins studies according to the degree programme stated in the offer letter. Students are given a briefing by the Faculty on the various study paths they can choose.

2 Student takes courses in the General (10-20%) and Core (70-80%) components from First and Second Major. Student needs to ensure :-

- i) Equal (50%~50%) total credits of Core components (First Major and Second Major)
- ii) 30% overlapping General and Core (similar/equivalent) courses of First Major and Second Major

Before beginning their Second Major, students need to choose their study paths. If a student's choice differs from the original programme offered, the Faculty must submit an application to UPM's Centre for Quality Assurance (CQA) for the student-chosen programme structure to be accredited and registered with the Malaysian Qualifications Register (MQR).

3 Student chooses Elective courses (5-20%) from either i) Convergence of Disciplines Group (KDB), OR ii) Functional Skills Group (KKF), OR Flexible Courses.

4 Student submits Study Path Slip to Equivalency Committees at Faculty & University levels who then recommend to the Senate the type of degree to be awarded. At this point, the student-chosen programme structure is already accredited and registered in the MQR.

5 Student who has undertaken **Double Major Study Path** will receive a degree certificate such as:

- **Bachelor of Science in Chemistry and Science and Food Technology (Honours)**
- **Bachelor of Arts in Malay Literature and Human Communication (Honours)**

6 If the Major/Core Component fulfils 50-65% of total credits, Student is considered to have undertaken the Major Minor Study Path and will be awarded a degree certificate such as:

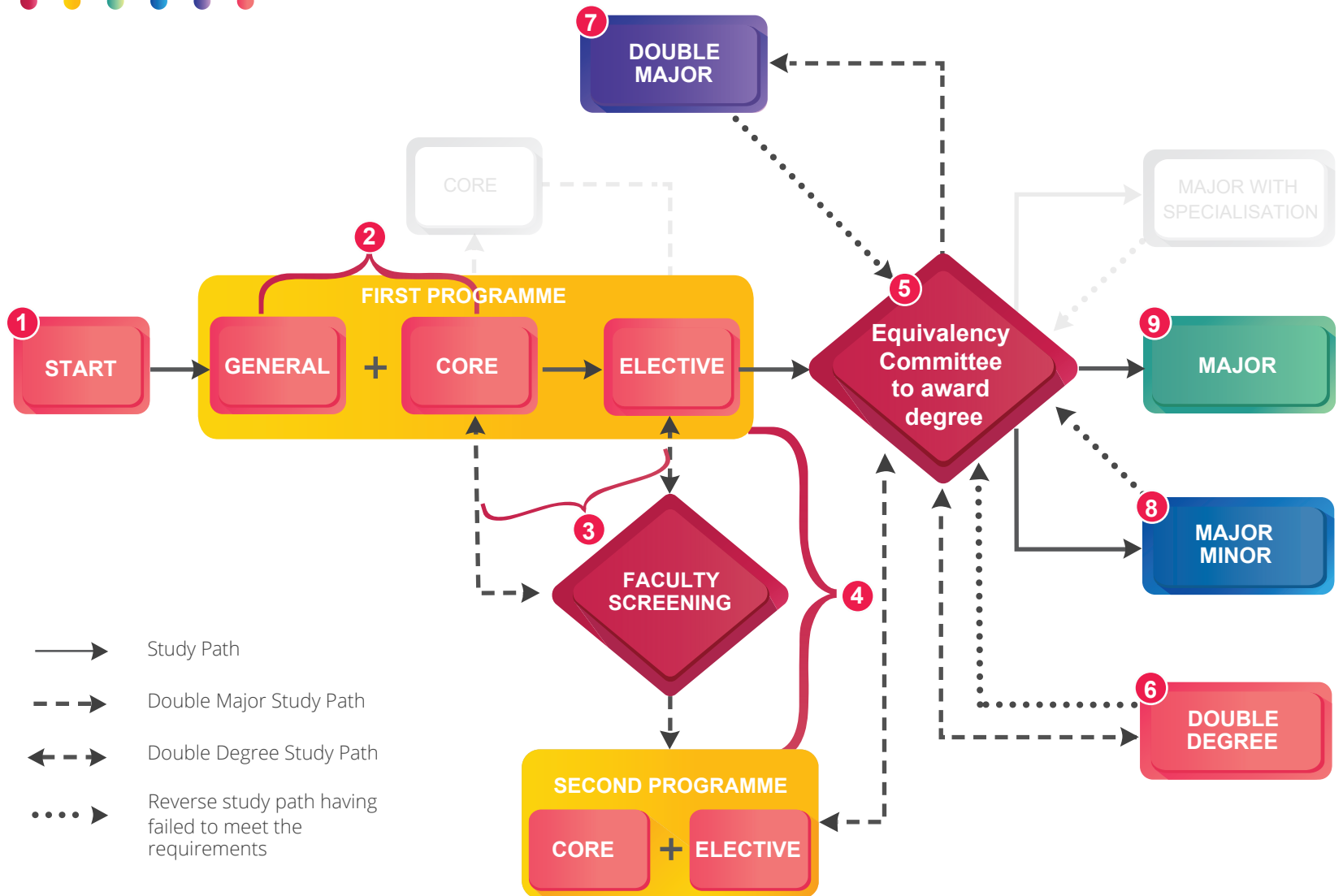
- Bachelor of Science in Chemistry with Entrepreneurship (Honours)
- Bachelor of Arts in Malay Literature with Multimedia Application (Honours)

7 Student who remains on the Major Study Path will receive a degree certificate such as:

- Bachelor of Science in Chemistry with Honours
- Bachelor of Arts in Malay Literature with Honours

PUTRAFLEX

DOUBLE DEGREE STUDY PATH



- 1 Student begins studies according to the degree programme stated in the offer letter. Students are given a briefing by the Faculty on the various study paths they can choose.
- 2 Student needs to pass courses in the General (10-20%) & Core (60-75%) components from First and Second Programmes. General courses are only taken ONCE, during the First Programme. Student must submit application to pursue the Second Programme to the Equivalency Committees of both Faculties. Student needs to ensure the following:
 - i) Equal (50%~50%) total credits of the Core components (First Programme and Second Programme)
 - ii) 20% overlapping General and Core (similar/equivalent) courses of First Programme and Second ProgrammeBefore beginning their Second Programme, students need to choose their study paths. If a student's choice differs from the original programme offered, the Faculty must submit an application to UPM's Centre for Quality Assurance (CQA) for the student-chosen programme structure to be accredited and registered with the Malaysian Qualifications Register (MQR).
- 3 Student enrolls on the Second programme using ONE of the following two methods:
 - i) Concurrent – Student enrolls Second programme concurrently with the First programme after passing Second year of First programme with excellent CGPA, OR
 - ii) Sequential – Student enrolls on Second programme after fulfilling total credit requirement for First programme with excellent CGPA.
- 4 Student must pass Elective courses (10-25%) from ONE of the following two groups: i) Convergence of Disciplines Group (KDB) OR ii) Functional Skills Group (KKF), OR Flexible Courses.
- 5 Student submits Study Path Slip to Equivalency Committees at Faculty & University levels. At this point, the student-chosen programme structure is already accredited and registered in the MQR.
- 6 Upon completion of **Double Degree Study Path**, Student will receive a degree certificate which certifies two different academic programmes such as:
 - **Bachelor of Science in Chemistry with Honours and Bachelor of Consumer Studies with Honours**
 - **Bachelor of Arts in Malay Literature with Honours and Bachelor of Parks and Recreation Science with Honours**
- 7 If the Major/Core Component fulfils 65-80% of total credits, Student is considered to have undertaken the Double Major Study Path - E.g., Bachelor of Science in Chemistry and Science and Food Technology (Honours)
- 8 If the Major Component fulfils 50-65% of total credits, Student is considered to have undertaken the Major Minor Study Path - E.g., Bachelor of Arts in Malay Literature with Multimedia Application (Honours)
- 9 Student who remains on the Major Study Path will receive a degree certificate which broadly states the main field of study - E.g., Bachelor of Science in Chemistry with Honours



M Consultancy & Services Sdn. Bhd

OC
gy Centre

Universiti
Putra Malaysia

Serdang

Universiti Putra Malaysia

Institut Penyelidikan
Dan Kemajuan...

Masjid Jamek Serdang

Malay Heritage Museum

Masjid Universiti
Putra Malaysia

Persiaran Universiti 1

Persiaran Universiti 1

Bangunan Canselori
Putra UPM

Faculty of Forestry

SMK Seri Serdang
Homestay

Maybank Taman
Seri Serdang

Google

PUTRAFLEX

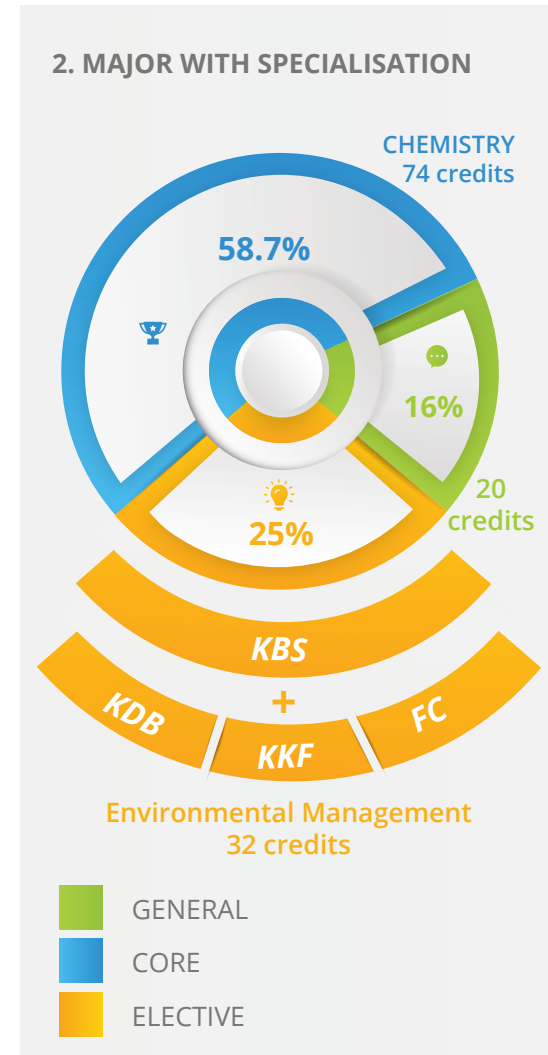
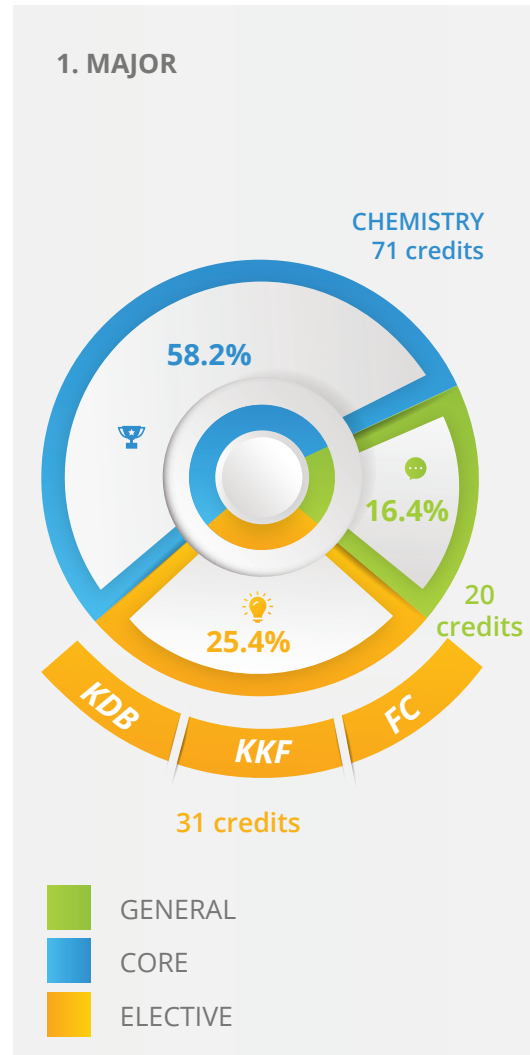
SIMULATION FOR
CURRICULUM COMPONENTS
AND CAREER PROSPECTS

SIMULATION

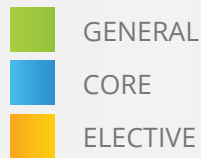
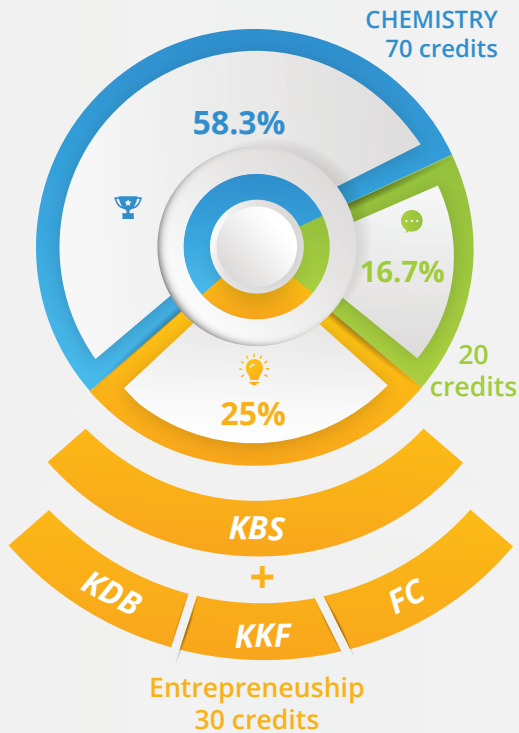
Curriculum Components



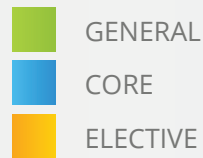
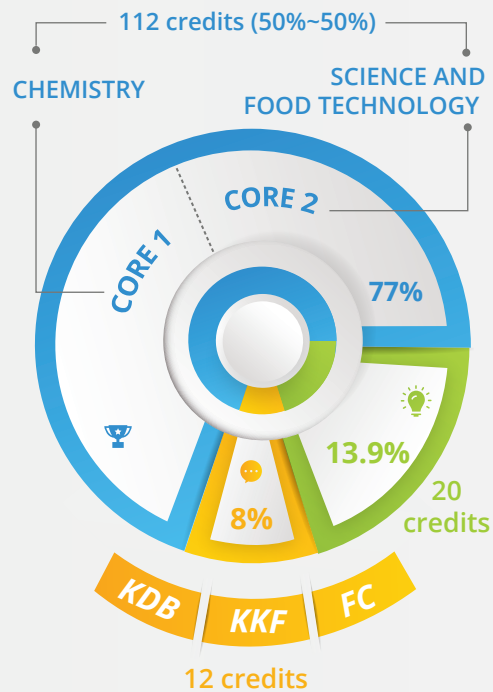
Composition and Percentage of Curriculum Components:
Simulation Based on the **Bachelor of Science in Chemistry with Honours** Programme



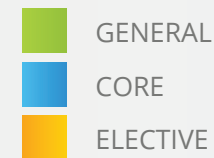
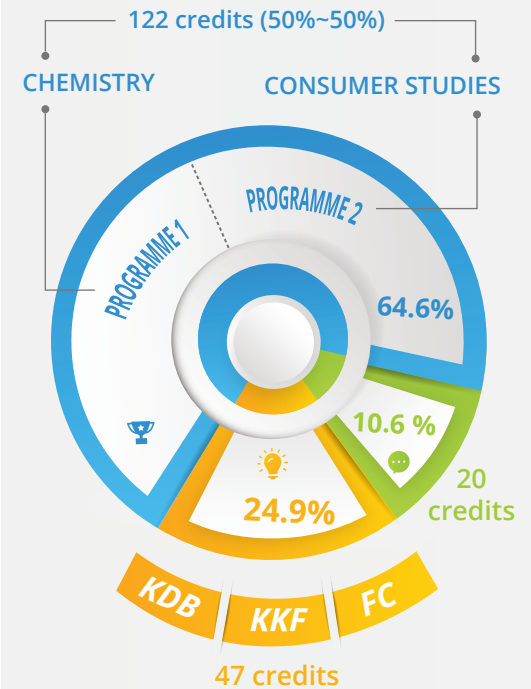
3. MAJOR MINOR



4. DOUBLE MAJOR



5. DOUBLE DEGREE

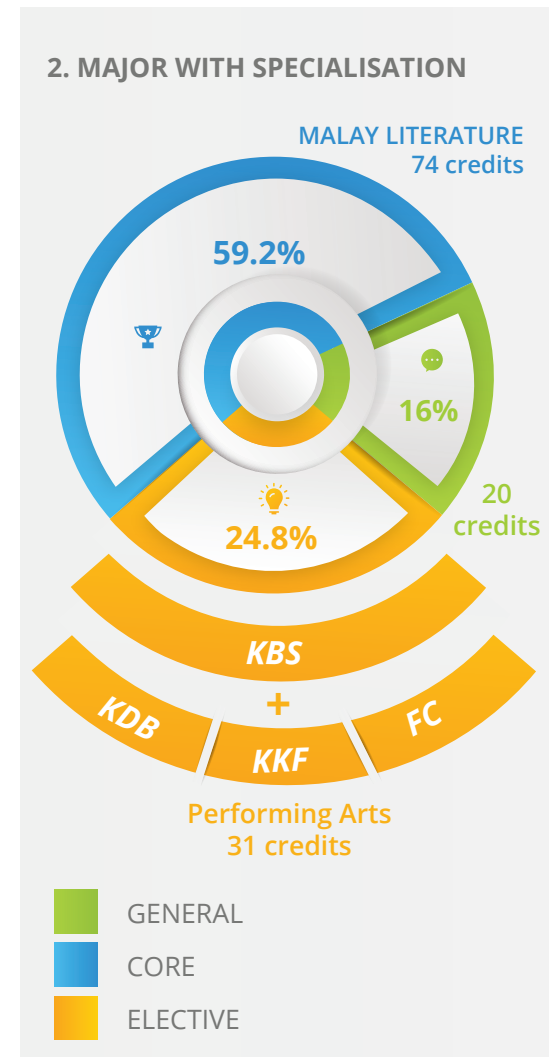
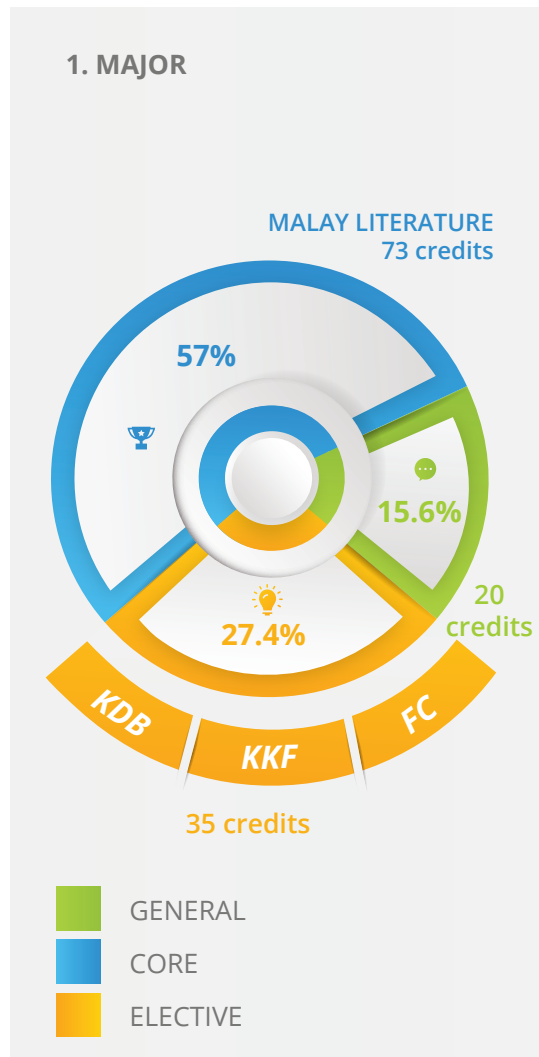


SIMULATION

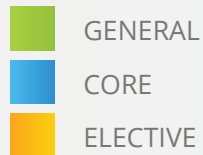
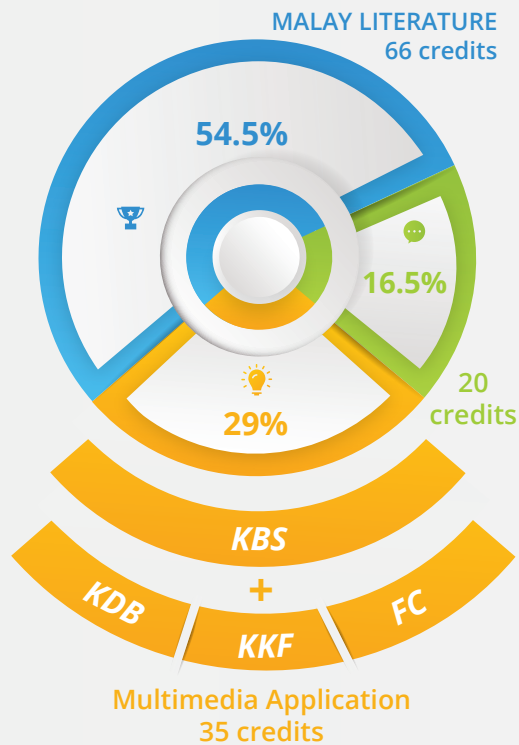
Curriculum Components



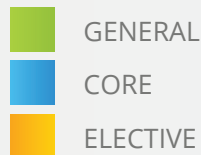
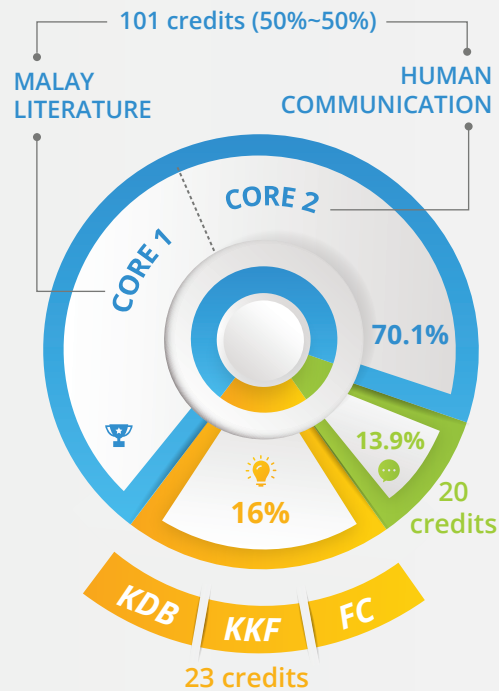
Composition and Weightage of Curriculum Components:
Simulation Based on the **Bachelor of Arts in Malay Literature with Honours** Programme



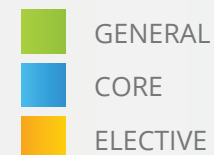
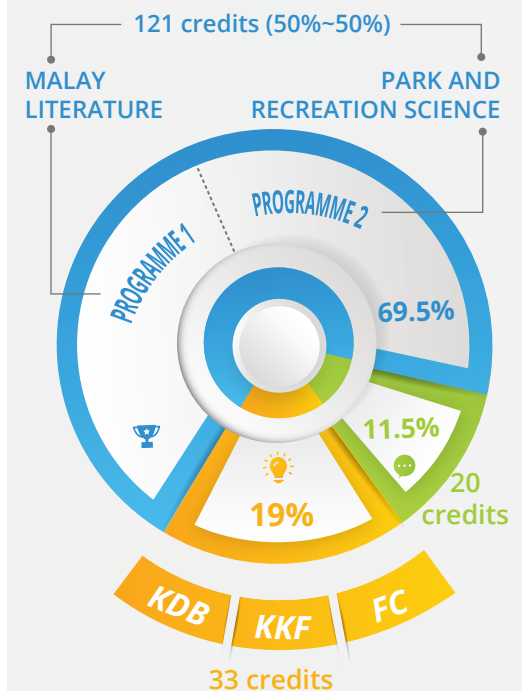
3. MAJOR MINOR



4. DOUBLE MAJOR

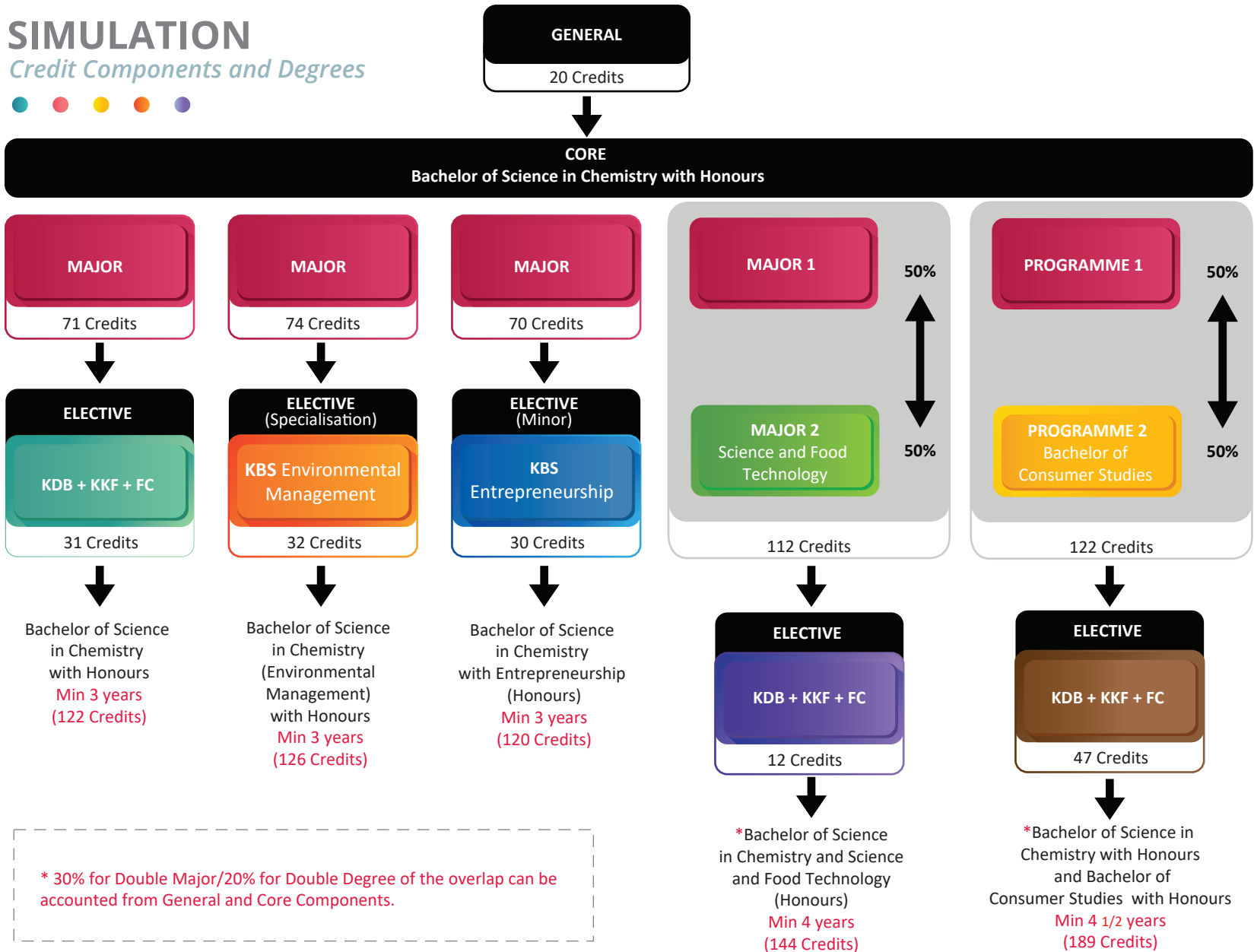


5. DOUBLE DEGREE



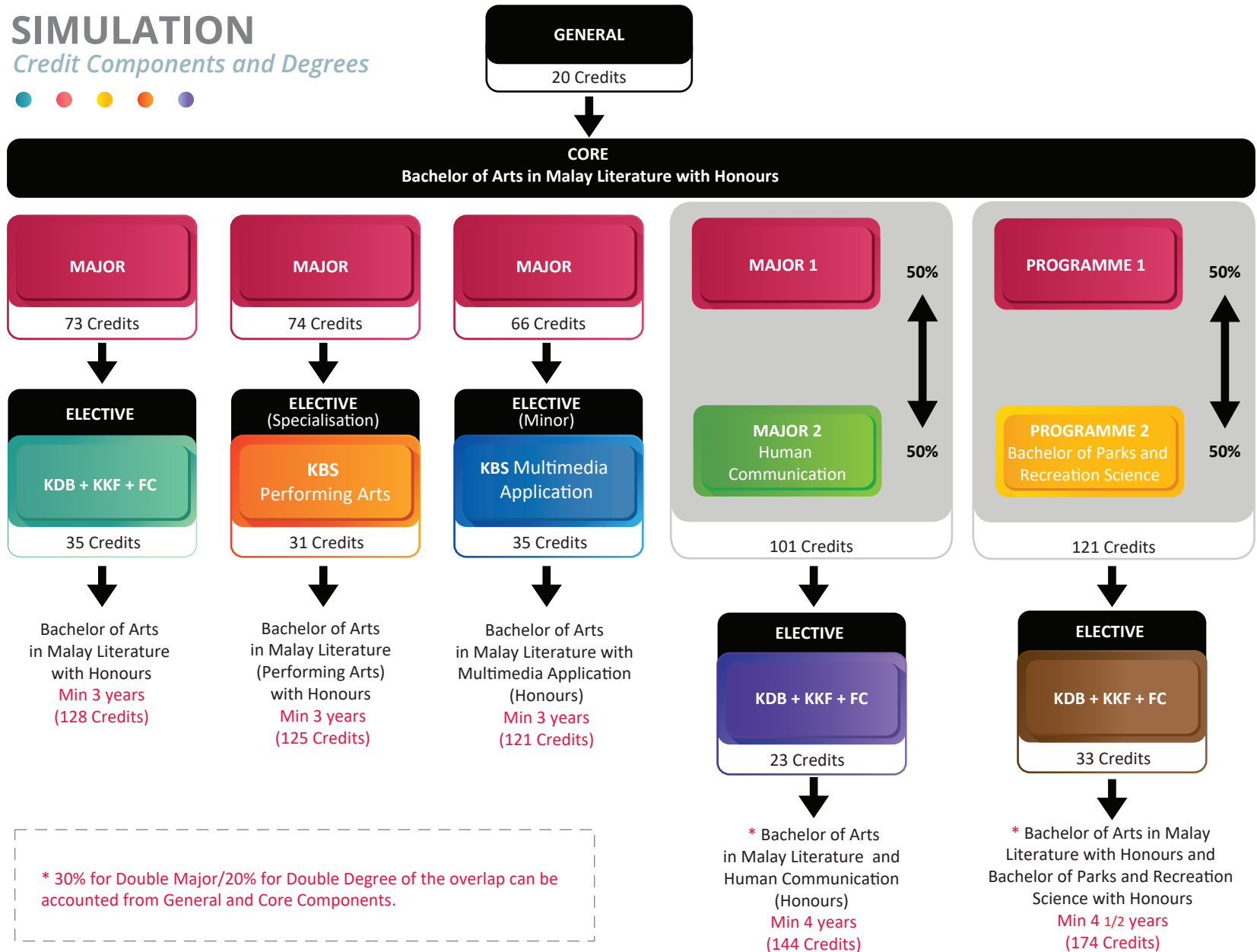
SIMULATION

Credit Components and Degrees



SIMULATION

Credit Components and Degrees



CAREER PROSPECTS

Bachelor of Science in Chemistry with Honours



FRESH STUDENTS



Phua



Umairah



Tahir



Roselyn



Amrita

GENERAL

MGM3180
Basic Entrepreneurship

SKP2101
Malaysian Nationhood Credited Co-Curricular Courses

BBI2423
Academic Interaction and Presentation

BBI2424
Academic Writing

PRT2208
Agriculture and Man

*Any other courses listed by the university

CHEMISTRY (FIRST MAJOR/PROGRAMME)

MTH3100 Calculus

PHY3104 Physics II

CHM3100 Basic Physical Chemistry

CHM3101 Physical Chemistry

CHM3300 Introduction to Inorganic Chemistry

CHM3301 Inorganic Chemistry I

CHM3201 Organic Chemistry I

CHM3401 Analytical Chemistry

CHM3402 Chemical Spectroscopy

CHM3102 Polymer Chemistry

CHM3104 Chemical Thermodynamic*And other courses listed by the programme

CHM3701 Computational Chemistry

CHM4903 Industrial Training

CHM4999 Final Year Academic Project

*And other courses listed by the programme

CORE

SCIENCE AND FOOD TECHNOLOGY (SECOND MAJOR)

FST3110 Food Biochemistry, **FST3201** Basic Food Microbiology, **FST3401** Fundamentals of Food Engineering, **MTH3003** Statistics for Applied Sciences, **FST3202** Food Microbiology, **FST3302** Fundamentals of Food Processing and Preservation, **FST3404** Unit Operations in Food Processing 1 and other courses listed by the programme.

CONSUMER STUDIES (SECOND PROGRAMME)

FEM3202 Nutrition, Health and Environment, **PSP3002** Research Methods in Consumer Sciences, **PSP3003** Consumer Psychology, **PSP3301** Household Financial Management, **FEM3107** Basic Advising and Counselling, **MGM3211** Principles of Marketing, **PSP3001** Introduction to Consumer Sciences, **FEM3205** Development of Family Enterprise and other courses listed by the programme.

ELECTIVE

Environmental Management (Specialisation)

EMG3001 Man and Environment, **EMG3202** Environmental Impact Assessment, **EMG4205** Oil Spill Response Planning, **ESC3012** Solid Waste Treatment Technology, **ESC3204** Wastewater Management, **ESC4201** River Water Quality Management and other courses listed by the specialised package, KDB, KBS, KKF or Flexible Courses developed by student.

FSA4001 Quality Management System in Science, **CHM4102** Electrochemistry, **CHM4001** Industrial Chemistry, **CHM4101** Solid State Chemistry, **KOC3402** Basic Communication Strategies, **KOM3207** Introduction to Communication Theory and other Elective courses listed by KDB, KKF or Flexible Courses developed by student.

Phua: Analytical Chemist

Bachelor of Science in Chemistry With Honours



Umairah: Toxicologist

Bachelor of Science in Chemistry (Environmental Management) with Honours



Entrepreneurship (Minor)

MTH3004 Introduction to Business and Economics Mathematics, **MGM3101** Principles of Management, **MGM3211** Principles of Marketing, **MGM4183** Entrepreneurship, **MGM4184** Small Business Management and other courses listed by the specialised package, KDB, KBS, KKF or Flexible Courses developed by student.

Tahir: Chemical Manufacturer

Bachelor of Science in Chemistry with Entrepreneurship (Honours)



FST3110 Food Biochemistry, **FST3114** Chemistry and Analysis of Food Macro- Components, **FST3115** Chemistry and Analysis of Food Micro-Components, **FST3302** Fundamentals of Food Processing and Preservation, **FST4505** Food Bioprocessing, **FST3602** Halal Food, **FSA4001** Quality Management System in Science and other courses listed by the specialised package, KDB, KBS, KKF or Flexible Courses developed by student.

FST3110 Food Biochemistry, **FST3114** Chemistry and Analysis of Food Macro- Components, **FST3115** Chemistry and Analysis of Food Micro-Components, **FST3302** Fundamentals of Food Processing and Preservation, **FST4505** Food Bioprocessing, **FST3602** Halal Food and other courses listed by the specialised package, KDB, KBS, KKF or Flexible Courses developed by student.

Roselyn: Food Chemist

Bachelor of Science in Chemistry and Science and Food Technology (Honours)



Amrita: Production Manager in Food Industry

Bachelor of Science in Chemistry with Honours and Bachelor of Consumer Studies with Honours



CAREER

Bachelor of Arts in Malay Literature with Honours



FRESH STUDENTS



Padmini



Usman



Tan Ming



Rafidah



Alice

GENERAL

- MGM3180** Basic Entrepreneurship
- SKP2101** Malaysian Nationhood
- Credited Co-Curricular Courses
- BBI2423** Academic Interaction and Presentation
- BBI2424** Academic Writing
- PRT2208** Agriculture and Man
- *Any other courses listed by the university

MALAY LITERATURE

- BBK3102** History of Malay Literature
- BBK3213** Aesthetics in Malay Literature
- BBK3210** Malay Literary Theories
- BBK3212** Criticism in Malay Literature
- BBK4201** The Malay Great Works
- BBK3215** Comparative Literature
- BBK3216** Literary Management
- BBK3408** Multimedia in Literature
- BBK3411** Creative Writing
- BBK3309** Malay Drama
- BBK3407** The Art of Acting
- BBK4903** Industrial Training
- BBK4959** Bachelor's Dissertation
- *And other courses listed by the programme

CORE

HUMAN COMMUNICATION WITH HONOURS (SECOND MAJOR)

KOM3207 Introduction to Communication Theory, **KOM3403** Public Oration, **KOH3231** Communication Psychology, **KOH3433** Interpersonal Communication Skills, **KOH3401** Small Group Communication, **KOH3363** Communication and Negotiation, **KOH3361** Intercultural Communication, and other Core courses listed by the programme.

PARKS AND RECREATION SCIENCE (SECOND PROGRAMME)

FHR3101 Introduction to Outdoor Recreation, **FHM3101** Forest Science, **FHR3102** Recreation Resource Ecology, **FHR3202** Park and Recreational Resources Inventory, **FHR3204** Outdoor Recreation Planning, **FHR3501** Recreational User Behaviour, **FHR3503** Entrepreneurship in Parks and Recreation, and other Core courses listed by the programme.

ELECTIVE

Performing Arts (Specialisation)

BBX3105 Basic Theatre, **BBX3415** Solo Performance, **BBX3411** Acting and Improvisation, **BBX3414** Methods of Play Production), **BBL4401** Play Production and Performance and other courses listed by the specialised package, KDB, KBS, KKF or Flexible Courses developed by student.

FEM3101 Developmental Psychology: Children and Adolescents, **FEM3102** Developmental Psychology: Adult and Aging, **FEM4103** Psychology of Social and Interpersonal Behavior, **FEM3313** Sociology and Social Anthropology, **CPE3111** Personality Development, **CPE3211** Basic Counselling Skills, and other courses listed by the specialised package, KDB, KBS, KKF or Flexible Courses developed by student.

KOH3361 Intercultural Communication, **SKM3001** Multimedia Technology, **SKM3300** Multimedia Application Development, **SKM4215** Creative Design Elements, and other Elective courses listed by the specialised package, KDB, KBS, KKF or Flexible Courses developed by student.

Multimedia Application (Minor)

SSK3100 Computer Programming 1, **SSK3101** Computer Programming II, **SKM3001** Multimedia Technology, **SKM4311** Animation for Multimedia Production,

Free Elective

MZK3011 Music Cultures of the World, **MGM3180** Basic Entrepreneurship, **MGM3101** Principles of Management, and other courses listed by the specialised package, KDB, KBS, KKF or Flexible Courses developed by student.

KDB (Landscape Architecture)

LAN4403 Landscape Environmental Responsive Design, **LAN4508** Green Technology in Landscape Construction, **LAN3202** Architecture Theory and Philosophy, **SKM3001** Multimedia Technology, **SKM4215** Creative Design Elements, **KOM3207** Introduction to Communication Theory, and other courses listed by the specialised package, KDB, KBS, KKF or Flexible Courses developed by student.

Padmini: Literary & Cultural Research Officer

Bachelor of Arts in Malay Literature with Honours



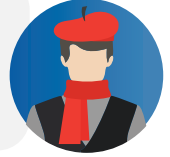
Usman: Theatre Director

Bachelor of Arts in Malay Literature (Performing Arts) with Honours



Tan Ming: Creative Consultant

Bachelor of Arts in Malay Literature with Multimedia Application (Honours)



Rafidah: Social Service Officer

Bachelor of Arts in Malay Literature and Human Communication (Honours)



Alice: Cultural Parks and Recreation Consultant

Bachelor of Arts in Malay Literature with Honours and Bachelor of Parks and Recreation Science with Honours



CONCLUSION



PUTRAFLEX is part of UPM's initiative for Academic Transformation and is in line with national concerns, particularly those of the Ministry of Education Malaysia. PUTRAFLEX emphasises two main characteristics, namely the convergence of disciplines and students' freedom to design their own study paths according to their interests and current needs. Both of these characteristics are delineated in the guidelines in order to guide academic staff in developing a flexible curriculum, and to help students in designing their study paths. It is hoped that this initiative will help in the aspiration to produce graduates who are able to confront future challenges.

NOTES



- 1 Profesor Datin Paduka Dato' Dr. Aini Ideris. 2019. *Perutusan Naib Canselor 2019 Ihsan: Integriti dan Kewibawaan*, Penerbit Universiti Putra Malaysia, Serdang, 15 February 2019, pp. 59- 61.
- 2 For further information on the policies of the Department of Higher Education (JPT), Malaysia Ministry of Education, see “Kerangka dan Elemen Kurikulum Tersedia Masa Hadapan” Program Akademik Universiti Awam, Department of Higher Education (JPT), Malaysia Ministry of Education, attached to Min. 282.07, the 290th Universiti Putra Malaysia Curriculum Committee (JKKU) Meeting on 30 January 2019. See also Rose Alinda Alias, “Malaysia Future Ready Curriculum Framework: An Introduction ”, Briefing on Public Universities Future Ready Curriculum, Department of Higher Education (JPT), Malaysia Ministry of Education, Bangi Hotel, Putrajaya, 6 December 2018.
- 3 For definitions and connotations of the word “fluid”, see *Collins Dictionary & Thesaurus*, HarperCollins Publishers, Glasgow, 2010, p. 456; *The Cambridge International Dictionary of English*, Cambridge University Press, Cambridge, 2001, p. 538 & *Webster's Third New International Dictionary of the English Language, Unabridged with Seven Language Dictionaries*, Volume I, A to G, Encyclopedia Britannica, Inc., Chicago, 1981, p. 877.
- 4 For definitions and connotations of the word “organic”, see *The Cambridge International Dictionary of English* Cambridge University Press, Cambridge, 2001, p. 995 & *Webster's Third New International Dictionary of The English Language Unabridged With Seven Language Dictionary*, Volume II, H to R, Encyclopedia Britannica Inc., Chicago, 1981, p. 1590.
- 5 For further understanding, see Aboelela, S.W. et al., “Defining Interdisciplinary Research: Conclusions From a Critical Review of the Literature”, *HSR: Health Services Research* 42: 1, Part 1 (February), 2007, pp. 329-345; Choi, B. C.K. & Pak, A.W.P., “Multidisciplinarity, Interdisciplinarity and Transdisciplinarity in Health Research, Services, Education and Policy: 1. Definitions, Objectives, and Evidence of Effectiveness”, *Clin Invest Med*, Vol 29, No 6 (December), 2006, pp. 351-364; Jensenius, A.R., “Disciplinarity: Intra, Cross, Multi, Inter, Trans”. *Alexander Refsum Jensenius*. 12 March 2012, <http://www.arj.no/2012/03/12/disciplinarity-2/>, accessed on 4th September 2019; Klein, J.T., “Evaluation of Interdisciplinary and Transdisciplinary Research A Literature Review”, *American Journal of Preventive Medicine*, Vol. 35, Number 2S (August), 2008, pp. 116-123 & Willie Caldwell, “Multi/Inter/Trans – disciplinary, What’s the Difference?” *FPF: The Official GRAD 5104 Blog*, 23 November 2015, <https://blogs.lt.vt.edu/grad5104/multiintertrans-disciplinary-whats-the-difference/>, accessed on 4th September 2019. Naziha Ahmad Azli, "Element 1: Fluid & Organic Curriculum Structure", 2018, Briefing on Public Universities Future Ready Curriculum, Department of Higher Education (JPT), Malaysia Ministry of Education, Bangi Hotel, Putrajaya, 6 December 2018.
- 6 In conceptualising and developing PUTRAFLEX, we have referred to the following documents:- *Garis Panduan Pembangunan Program Akademik Universiti Awam. Edisi Kedua*. 2018. Putrajaya: Department of Higher Education, Ministry of Education Malaysia; *Malaysian Qualifications Framework (MQF). 2nd Edition*. 2017. Cyberjaya: Malaysian Qualifications Agency (MQA); *Panduan Penyediaan Dokumen Program Pengajian*. 2016 Edition. Academic Administration Section, Vice-Chancellor’s Office (Academic and International), Universiti Putra Malaysia. Serdang: Universiti Putra Malaysia; *Kaedah-kaedah Universiti Putra Malaysia (Perkara Akademik Prasiswazah)* 2014. Serdang: Universiti Putra Malaysia & *Buku Panduan Amalan Pendidikan Berimpak Tinggi (High-Impact Educational Practices-HIEPs) dalam Mata Pelajaran Pengajian Umum*. 2019. Putrajaya: Department of Higher Education, Ministry of Higher Education.

PUTRAFLEX: The Team



From left:

Nor Azirawani Man, Wan Marzuki Wan Jaafar, Amir Affan Abdul Azim, Muta Harah Zakaria, Mohd. Zariat Abdul Rani (Team Leader), Nor Azowa Ibrahim, Makhfudzah Mokhtar, Fakhrul Zaman Rokhani & Wan Zuhainis Saad.

ACKNOWLEDGEMENT



We would like to express our deepest appreciation to all parties involved, whether directly or indirectly, in the publication of this playbook, especially to Professor Datin Paduka Dato' Dr. Aini Ideris, UPM's Vice-Chancellor, Professor Ts. Dr. M. Iqbal Sariipan, UPM's Deputy Vice-Chancellor (Academic and International) and Professor Dr. Muta Harah Zakaria@Ya, Director of UPM's Centre for Academic Development (CADE), Deputy Directors of CADe; Professor Dr. Wong Su Luan and Associate Professor Dr. Nurfadhlina Mohd Sharef, all staff of the UPM's CADe, UPM's Deputy Vice-Chancellor's Office (Academic and International), and UPM's Division of Admissions and Academic Governance and UPM's Centre for Quality Assurance(CQA).

ACADEMIC TRANSFOR MATION

ISBN 978-967-960-461-0



9 789679 604610