

SLIDE 1

OBE Enhancement Based on Program Standard (MQA)

Monday, 19 September 2022

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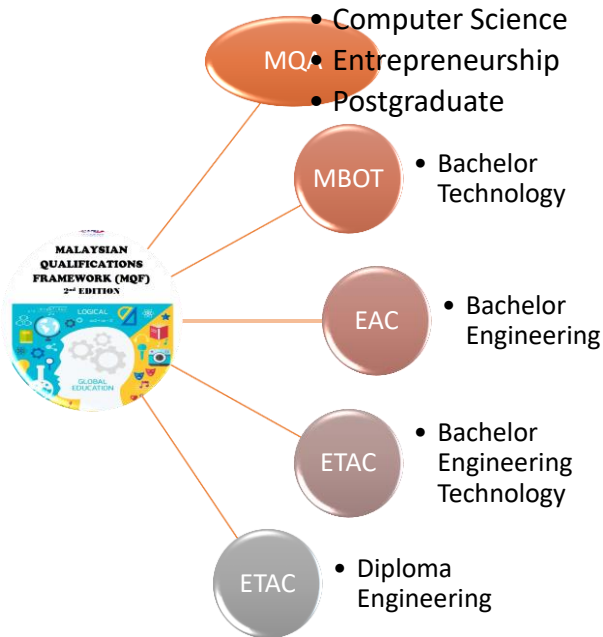
Pejabat Perancangan dan Pembangunan Akademik

Pejabat Timbalan Naib Canselor (Akademik dan Antarabangsa)

Universiti Teknikal Malaysia Melaka

SLIDE 2

MQF 2.0 and
Related
Program
Standard



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SLIDE 3

OBE Enhancement – MQA

Learning Materials



Program Standards



SLIDE 4

Group work

- We have been experiencing OBE implementation for all undergraduate courses and programs. Based on those experience, construct an OBE assessment plan framework for a postgraduate program
 - A plan for your coursework program in your faculty
 - A plan of a research program in your faculty
- Present your works in term of its constructive alignment, program achievement & attainment and how to ensure the program attributes reflects on your graduate.
- In a group of less than 5, you're given 20 minutes to develop and design your own Assessment Plan and some minutes of sharing session.

Refer:

<https://www2.mqa.gov.my/qad/v2/index.cfm>

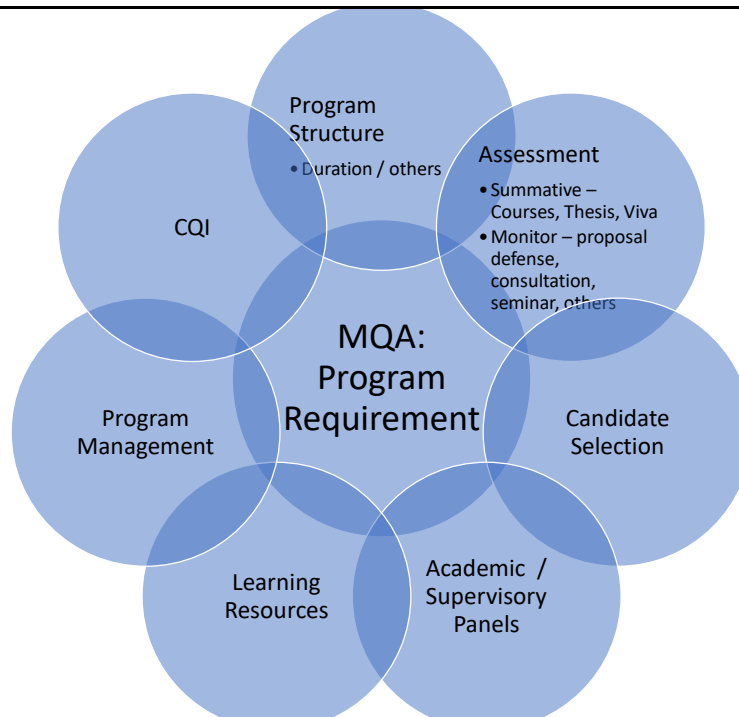


STANDARDS:

**MASTER'S
AND
DOCTORAL
DEGREE**



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Skop

PROGRAMME STANDARDS: BUSINESS STUDIES

SLIDE 7

STANDARDS:

MASTER'S AND DOCTORAL DEGREE

Hence, the **general Business Studies programmes** provide a broad, analytical and highly integrated study of business and management which cover the following core areas:

- Human Resource Management
- Marketing
- Accounting and Finance
- Business Economics
- Management
- Business Analytics.

The **specialist Business Studies programmes** provide an in-depth and analytical study of business and management in one or more of the above listed core areas.

STANDARDS: MASTER'S AND DOCTORAL DEGREE BY RESEARCH

STANDARDS: MASTER'S AND DOCTORAL DEGREE BY COURSEWORK AND MIXED MODE (COURSEWORK AND RESEARCH)

PROGRAMME STANDARDS: COMPUTING

PROGRAMME STANDARDS: COMPUTING

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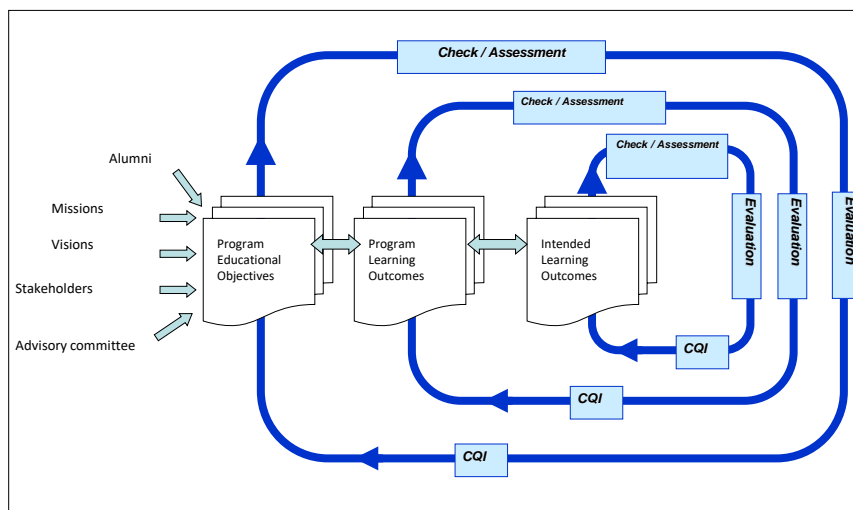
communications and entertainment media; finding and gathering information relevant to any particular purpose.

In the Malaysian context, Information and Communication Technology (ICT) is widely used as a phrase to describe Computing. As a result, Computing degrees have always been referred to as ICT degrees.

For the purpose of Malaysian higher education sectors, the learning framework is based on the ACM Problem Space of Computing. Computing is broadly categorised into four (4) major disciplines namely Computer Science, Software Engineering, Information Technology and Information Systems:

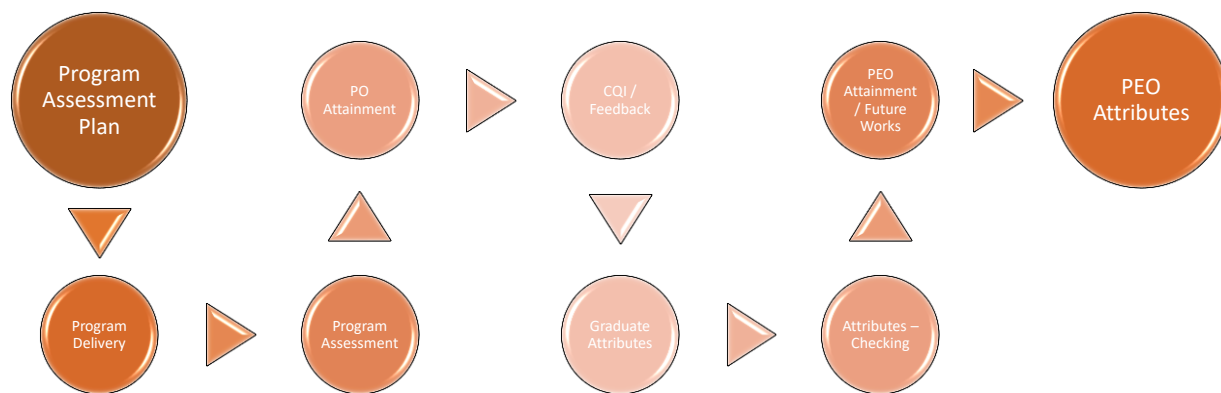
OBE Assessment Plan Framework

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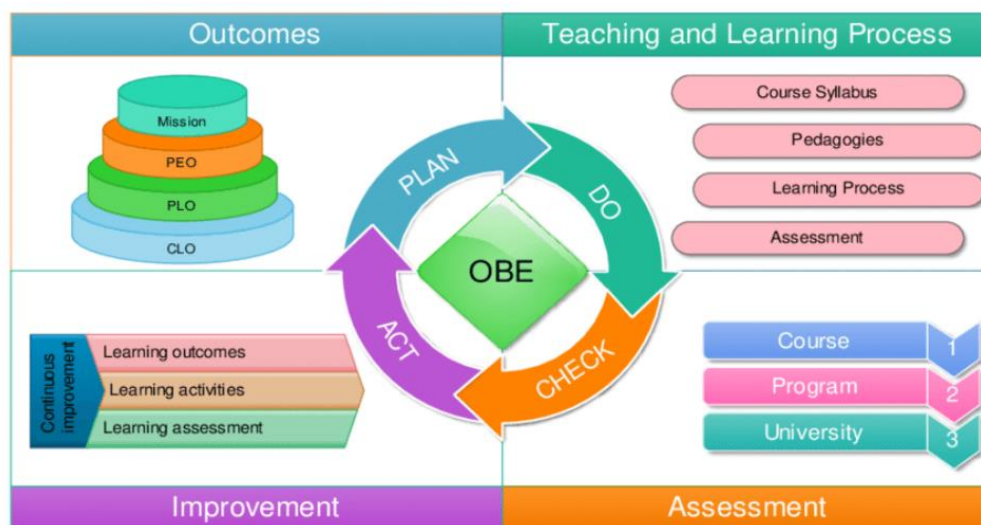


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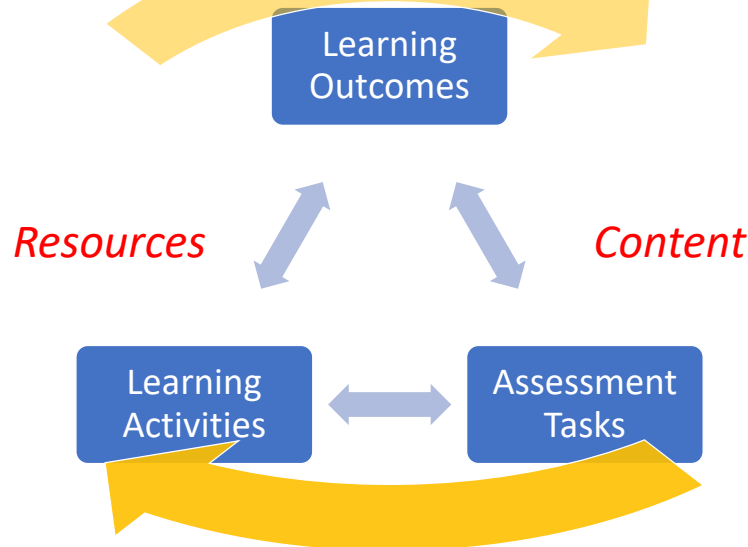
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Outcome-based education (OBE) framework consistency with PDCA(Plan-Do-Check-Act) principle

Constructive Alignment: Outcome-based Education

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Assessment

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For those who prefer a more typical written definition the New South Wales (Australia) Education Standards Authority (2017) provide a good summary of "assessment for, as, and of learning"

Assessment of learning assists teachers in using evidence of student learning to assess achievement against outcomes and standards. Sometimes referred to as 'summative assessment', it usually occurs at defined key points during a teaching work or at the end of a unit, term or semester, and may be used to rank or grade students. The effectiveness of assessment of learning for grading or ranking purposes depends on the validity, reliability, and weighting placed on any one task. Its effectiveness as an opportunity for learning depends on the nature and quality of the feedback.

Assessment for learning involves teachers using evidence about students' knowledge, understanding, and skills to inform their teaching. Sometimes referred to as 'formative assessment', it usually occurs throughout the teaching and learning process to clarify student learning and understanding.

Assessment as learning occurs when students are their own assessors. Students monitor their own learning, ask questions and use a range of strategies to decide what they know and can do, and how to use assessment for new learning.



FORMATIVE

Table 4: Summary of Course Information

[COPY SHEET](#)
[UPDATE INDEX](#)
[CLEAR FORM](#)

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1	Course Name:			
	Course Code:			
	Course Classification:			
2	Synopsis:			
3	Name(s) of Academic Staff:			
	1			
	2			
	3			
4	Semester and Year offered:	Year Offered	Semester	Remarks:
5	Credit Value:			
6	Pre-requisite/ co-requisite (if any):			
7	Course Learning Outcomes (CLO)	CLO1		
		CLO2		
		CLO3		



1. Identify the intended learning outcomes
2. Design assessment tasks to measure attainment of the learning outcomes
3. Plan learning activities to enable students to develop the skills, knowledge and understandings described in the intended learning outcomes and measured by assessment
4. Choose the content (topics/examples/resources/materials) required to support the learning activities

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Construction of OBE Assessment



Key points and guide markers are set out to ensure accurate building takes place.



It is considered a large-scale development plan to measure high impact attributes of the students.



These development settings often require multiple setting out markers to ensure continuity as the program progresses.



Advisory Key Points

- Step 1: Student Attributes
- Step 2: Plan & Constructive Alignment
- Step 3: Selection of Assessment
- Step 4: Selection of Delivery
- Step 5: Program Performance and Attainment
- Step 6: Performance of Student Attributes

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Construction Sets – at least some advisory coordination setting

- Step 1: Student Attributes
- Step 2: Constructive Alignment
- Step 3: Selection of Assessment
- Step 4: Selection of Delivery
- Step 5: Program Performance and Attainment
- Step 6: Performance of Student Attributes

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Construction Sets Set 1: Setting Student Attributes

- Step 1: Student Attributes
- MQA LOC – Targeted LOD
- Program Standard PLO
- Mapping with Mission and Vision University / Faculty
- Program PEO and PLO
- Targeted Transferable Skills



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1.2. Learning Outcomes

The quality of the research programme is determined by the ability of the graduates to carry out the expected roles and responsibilities in society. This requires the programme to have clear statements of the learning outcomes to be achieved. These statements should collectively reflect the appropriate MQF Level descriptor encompassing the five (5) clusters of learning outcomes and other needs of the HEP.

No	Clusters		
1	Knowledge and Understanding		
2	Cognitive Skills		
3	Functional Work Skills	3.1	Practical Skills
		3.2	Interpersonal Skills
		3.3	Communication Skills
		3.4	Digital Skills
		3.5	Numerical Skills
		3.6	Leadership, Autonomy & Responsibility
4	Personal and Entrepreneurial Skills		
5	Ethics and Professionalism.		

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No	Transferable Skills	Coursera	Eddy	2025 World Economic Forum	Skills in Demand (Talent Corp, 2021)
1	Communication		Communication		Communication
2	Problem Solving	Problem Solving		Problem Solving	Problem Solving
3	Collaboration				
4	Critical Thinking	Critical Thinking	Critical Thinking	Critical Thinking	
5	Creativity			Creativity	
6	Learner			Active Learning	
7	Organization				
8	Management	Management		Self-management	
9	Adaptability	Adaptability	Adaptability		
10	Teamwork	Teamwork	Teamwork		Teamwork
11	Leadership		Leadership	Leadership	
12	Analytical Think			Analytical	Analytical
13	Technology use & management			Technology use & management	Technical Skills

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Construction Sets Set 2: Planning and Setting our own Constructive Alignment

- Step 2: Plan & Constructive Alignment
- Modul / Course / Activity
- Course – Table 4 MQA (updated)



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Table 4 MQA	Course 1	Course 2	...	Course nth
Course Name & Code, Credit				
Offered, Pre-requisite				
Staff Details				
Synopsis				
CLO				
Course Mapping – PLO / MQF 2.0				
Constructive Alignment				
Transferable Skills				
SLTs				
Educational Resources				
Reference				

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Construction Sets

Set 3: Selection of Assessment

- Cognitive
- Psychomotor
- Affective



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Boundary of Construction Sets

The methods of assessment depend on the specific requirements of each course. Nonetheless, the following must be considered as a general guide:

- Assessments should comprise formative and summative assessments;
- Assessments must be appropriate to the learning outcomes;
- Candidates are required to pass BOTH continuous and final assessments for every course.** HEPs can define the meaning of a pass; however, a pass should imply that the examiner is satisfied that the candidate has met all the learning outcomes of a course; and
- The HEP must have clear marking guidelines such as assessment rubrics, marking schemes, and others for continuous and final assessments to indicate the achievement of course learning outcomes.**

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Boundary of Construction Sets

The methods of assessment depend on the specific requirements of each course. Nonetheless, the following must be considered as a general guide:

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- iv. **The HEP must have clear marking guidelines such as assessment rubrics, marking schemes, and others for continuous and final assessments to indicate the achievement of course learning outcomes.**

MASTER'S DEGREE (Level 7, MQF)

MODE	CONTINUOUS ASSESSMENT (%)	FINAL ASSESSMENT (%)	SUGGESTED FORMS OF ASSESSMENT
COURSEWORK	30 – 70	30 – 70	<ul style="list-style-type: none"> Assignment (Individual / Group) Project Case studies Quiz Written test Oral test Practical assessment Presentation Demonstration Industrial training report Employer evaluation Final examination
Project	0 – 40	60 – 100	

BACHELOR'S DEGREE (Level 6, MQF)

CONTINUOUS ASSESSMENT (%)	FINAL ASSESSMENT (%)	SUGGESTED FORMS OF ASSESSMENT
30 - 70	30 - 70	<ul style="list-style-type: none"> Assignment (Individual / Group) Project Case studies Quiz Written test Oral test

DOCTORAL DEGREE (Level 8, MQF)

MODE	CONTINUOUS ASSESSMENT (%)	FINAL ASSESSMENT (%)	SUGGESTED FORMS OF ASSESSMENT
COURSEWORK	30 – 70	30 – 70	<ul style="list-style-type: none"> Assignment (Individual / Group) Project Case studies Written test Oral test Practical assessment Presentation Demonstration Industrial training report Employer evaluation Final examination
Dissertation	0	100	
WORD WORK			
COURSEWORK	30 – 70	30 – 70	<ul style="list-style-type: none"> Assignment (Individual / Group) Project Case studies Written test Oral test Practical assessment Presentation Demonstration Thesis Industrial training report Employer evaluation Final examination
Thesis	0	100	

		<ul style="list-style-type: none"> Practical assessment Presentation Demonstration Industrial training report Employer evaluation Final examination
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Boundary of Construction Sets

Suggested breakdown for each level of award from Certificate to Master Degree are as given below. **Candidates should pass BOTH formative (continuous) and summative (final) assessment for every subject. HEPs can define the meaning of pass, however a pass should imply that the examiner must be satisfied that the candidate has met all the learning outcomes of the particular subject.**

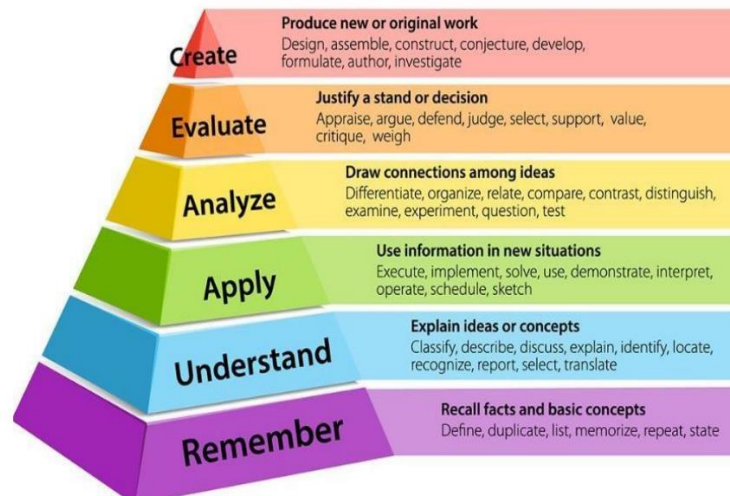
For Masters and PhD by Research:

- i. Formative assessment must include:
 - a. monitoring of research progress periodically (for example, through a progress report, or a proposal defense).
 - b. research presentation/colloquium/seminar/workshop.
- ii. Summative assessment is used to assess all learning outcomes of a programme, and must include:
 - a. completion of prescribed courses;
 - b. thesis or dissertation; and
 - c. viva voce.

QUALIFICATIONS	MODULES		REQUIREMENT
	CONTINUOUS ASSESSMENT (%)	FINAL ASSESSMENT (%)	
Certificate	50 – 70	30 – 50	<ul style="list-style-type: none"> Written Assessment Oral Assessment Practical Assessment
Diploma	50 – 70	30 – 50	<ul style="list-style-type: none"> Written Assessment Oral Assessment Practical Assessment Industrial Attachment /Internship Project
Bachelor's Degree	40 – 70	30 – 60	<ul style="list-style-type: none"> Written Assessment Oral Assessment Practical Assessment Industrial Attachment /Internship Project
Master's Degree by Coursework	-	-	<ul style="list-style-type: none"> Written Assessment Presentation Project Paper

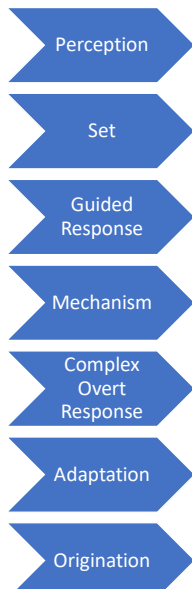
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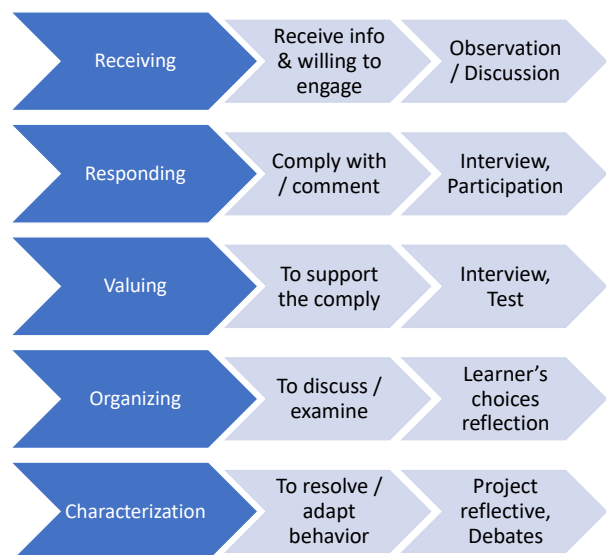


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Psychomotor Domain



Affective Domain



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Construction Sets

Set 4: Selection of Delivery

- Step 4: Selection of Delivery
- Appropriate Delivery
- Expert / Academic Staff
- Independent Learning
- Involve Various Stakeholders
- Select Appropriate Educational Resources



Example of Delivery Methods

Recommended Delivery Methods:

- Lectures/tutorials
- Blended learning
- WBL
- Flipped Learning
- Practical laboratory/classes
- Field/industry visits (business organisations, universities, organisations, government-related corporations, and others)
- Fieldwork
- Apprenticeship
- Industrial training
- Guest lecture series (prominent speakers from the industry and acad)
- Final year project
- Seminar
- Empirical studies
- Case study

Recommended delivery methods:

- Field research
- Problem-based learning
- Supervision of dissertation
- Research seminars/workshop
- Interactive learning

Recommended delivery methods:

- Lectures
- Industrial visits
- Case study
- Supervision of dissertation
- Problem-based learning
- Guest lecture series
- Interactive learning
- Research seminars/workshop

Recommended delivery methodSLIDE 28

- Lecture
- Tutorial
- Practical class
- Laboratory work
- Field visit/Field work
- Role play/Simulation
- Case study
- Blended learning
- Open and Distance Learning (ODL)

Recommended delivery methods:

- Lectures
- Industrial visits
- Case study
- Problem-based learning
- Guest lecture series
- Interactive learning

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Example Educational Resources

Educational resources recommended for Business Studies programmes include:

- i. Sufficient qualified experts in various fields.
- ii. Technical support/facilities.
- iii. Internet access.
- iv. Lecture rooms (with sufficient Audio-Visual facilities).
- v. Library/resource centre (including online resources for teaching and research) with up-to-date resources.
- vi. Working space/station (with access to the Internet).
- vii. Computer laboratory (with access to the Internet).
- viii. Sufficient access to relevant software according to the needs of the programmes and students.
- ix. Relevant online data bases, online journals, statistical packages, qualitative analysis software, and citation and referencing software.

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Construction Sets Set 5: Program Performance & Attainment

- Step 5: Program Performance and Attainment
- Marking Scheme
- Grade – Point Based / PASS or FAIL or other type of performance target
- Boundary Sets



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Construction Sets

Set 6: Performance of Student Attributes

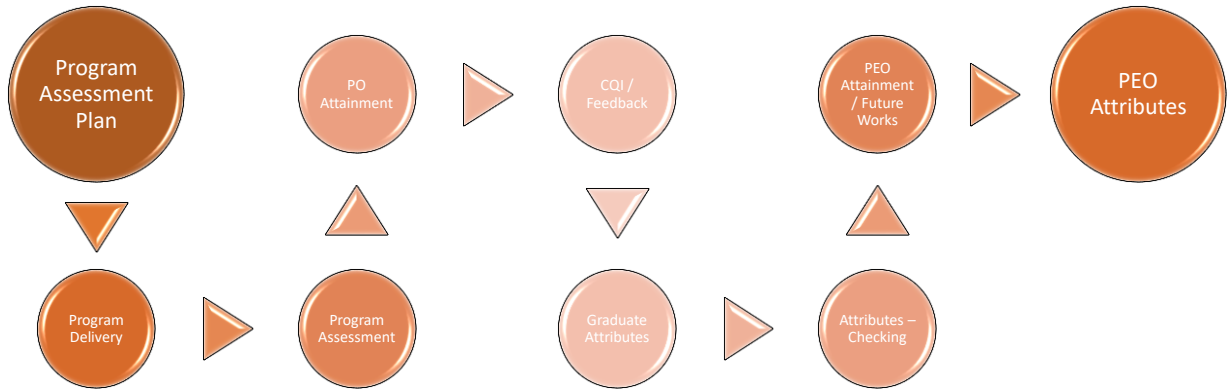
- Step 6: Performance of Student Attributes



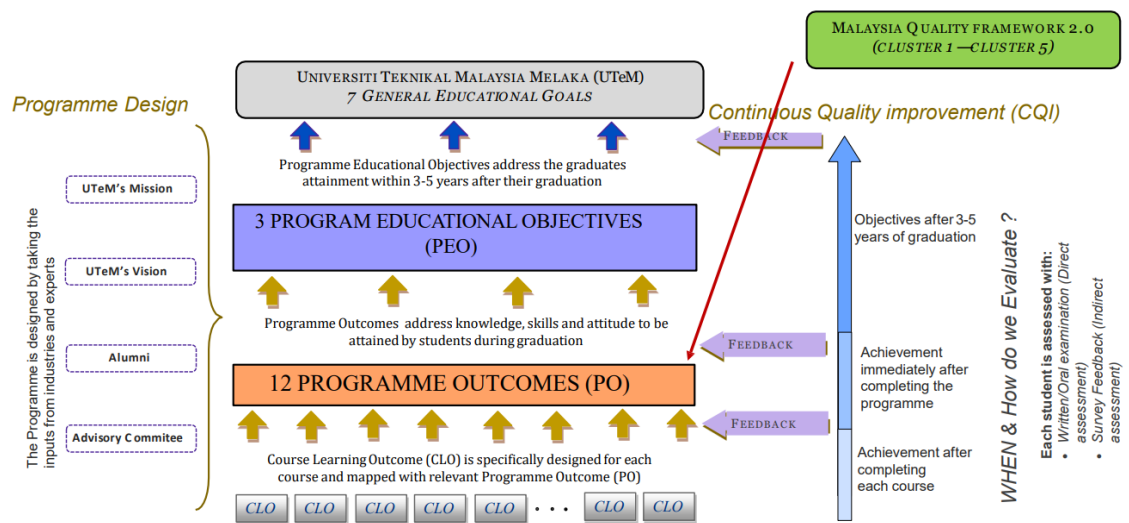
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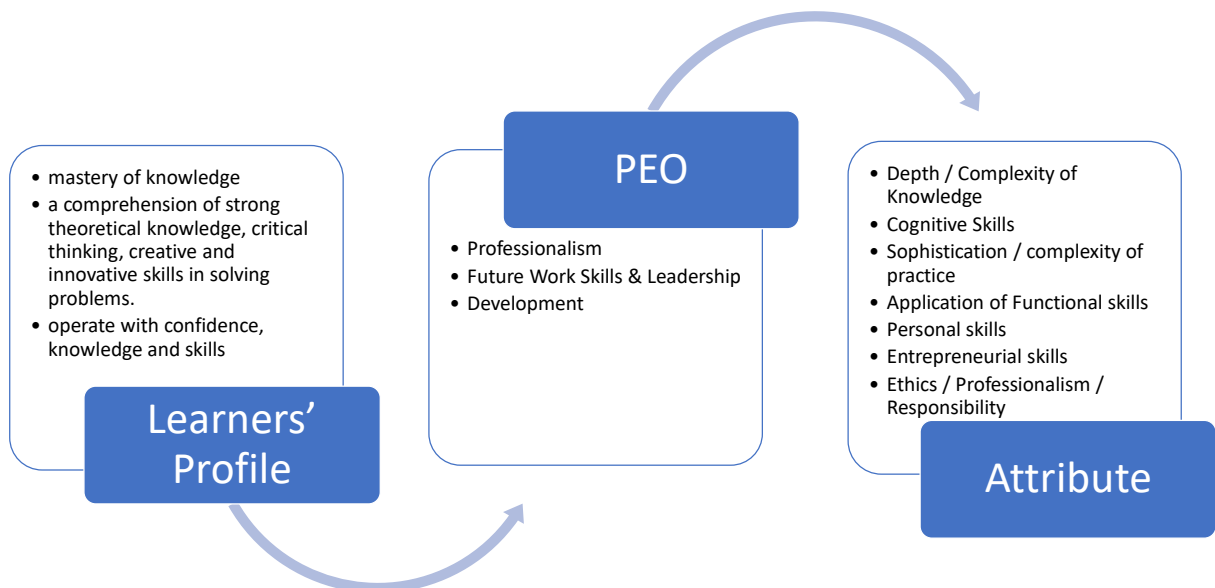


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Program Assessment Plan

PEO	Indicator	KPI Attainment	Assessment Tools	Attainment Report	Stakeholders Involvement
PLO	Indicator	KPI Attainment	Assessment Tools	Attainment Report	Stakeholders Involvement
Student	Intake	Activities		iPO Report	Stakeholders Involvement
Staff	Qualification	Competency			
Educational Resources	Direct Resources	Online Resources	Support System		
System	OBE System	SMP / SMPS	Documentation	CQI Activities	

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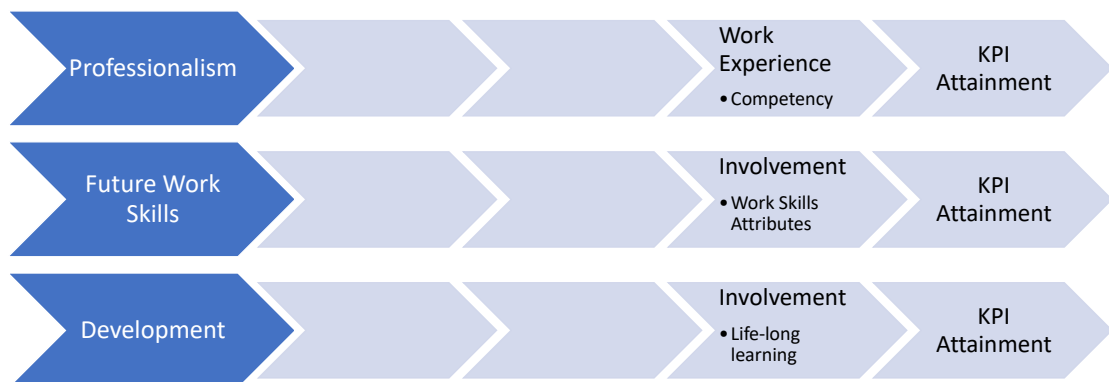
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Achieving PEO Attainment – Constructive Alignment



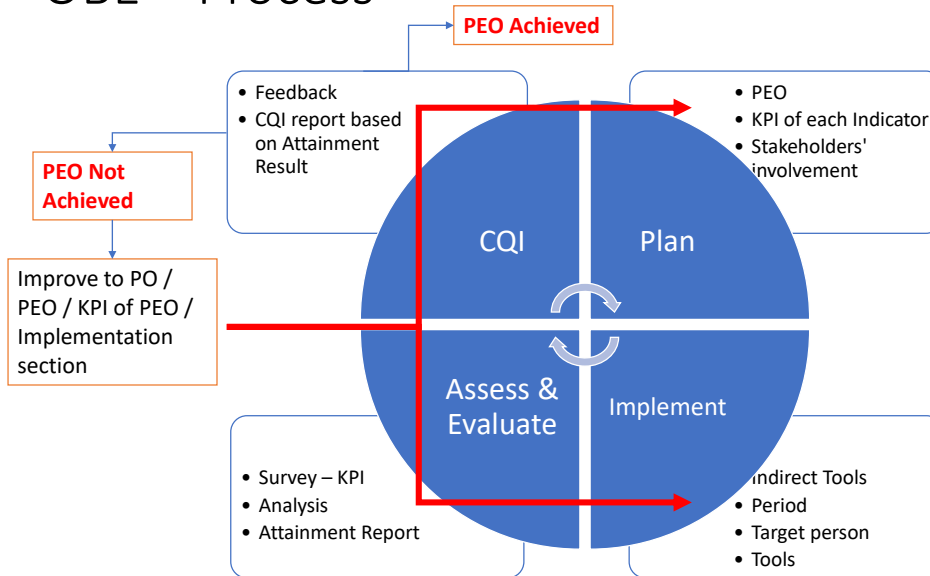
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PEO – Assessment Plan (Fill in)



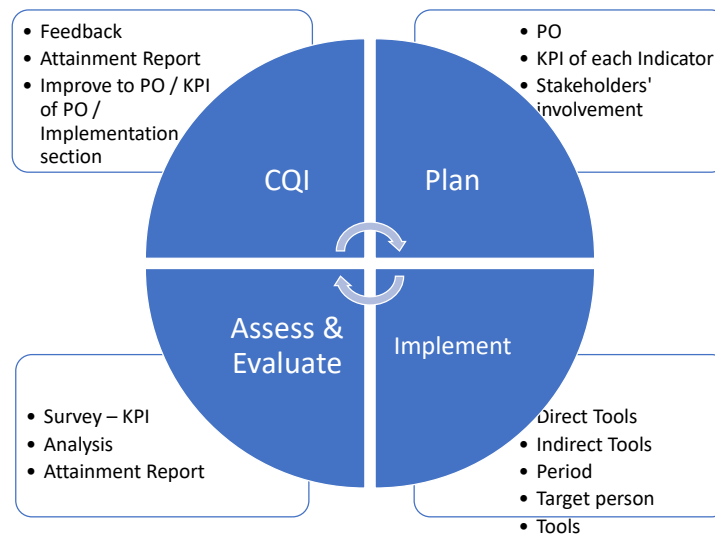
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OBE – Process



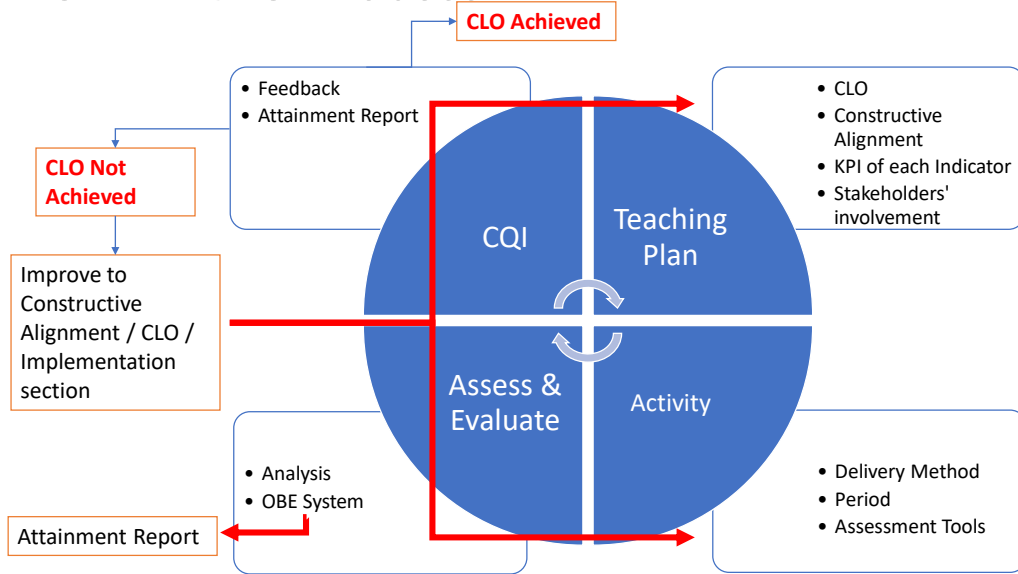
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OBE – Process



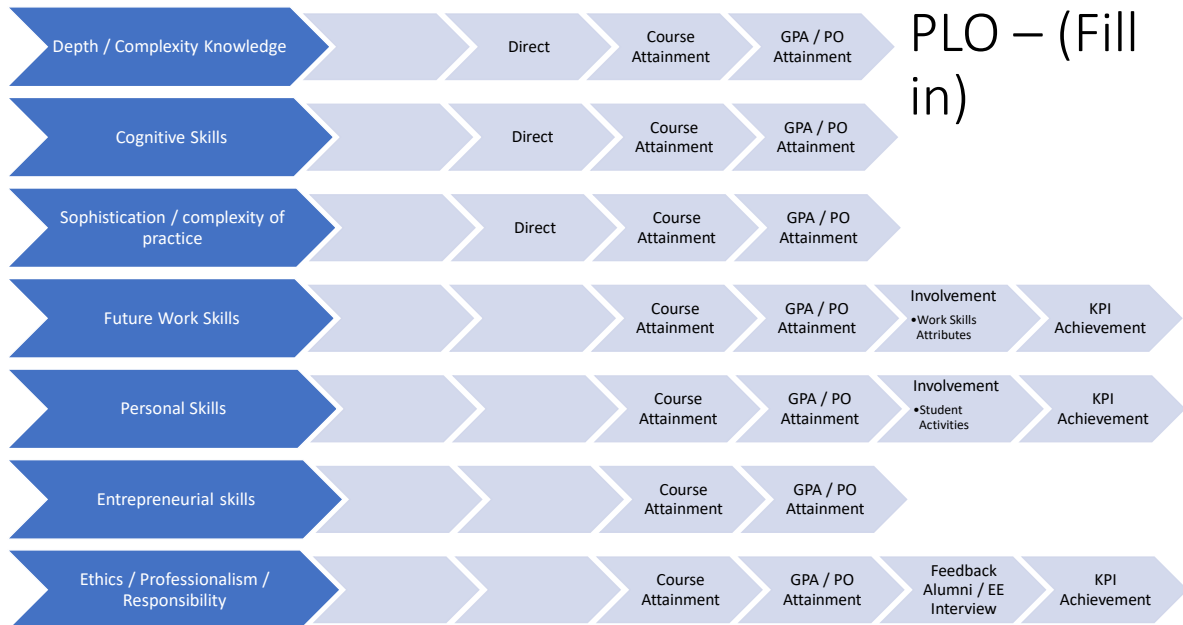
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OBE – CLO Process



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PLO – (Fill in)



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Course Attainment – Constructive Alignment



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Example of Constructive Alignment 1 (Fill In)

MQF LOD	Learning Domain	Assessment Samples	Delivery Method	Assessment Tools
Knowledge & Understanding		Explain the theory & Principles of XXX		
		Describe the concepts of XXX		
Cognitive Skills		Evaluate the features / systems		
Practical Skill		Measure characteristics of XX		
		Demonstrate certain skills with appropriate method		
		Perform certain skills in solving problems		

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Example of Constructive Alignment 2 (Fill in)

MQF LOD	Learning Domain	Assessment Samples	Delivery Method	Assessment Tools
Digital Skills		Evaluate the results based on data lab result gathered by using appropriate computer tools		
Numeracy Skills		Interpret the statistical results based on data lab result gathered		
Personal Skills		To perform and integrate solution autonomously		
Entrepreneurial Skills		Propose solutions involving calculating the risk of impact		
Ethics & Professionalism		Propose solutions by professional / ethical manner		
		Adhere to ethical writing		

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Setting Constructive Alignment

	Attribute	Learning Domain	Assessment Tools	Delivery Methods	Mark %	CLO KPI Attainment	PLO
Course 1	Knowledge	Cognitive, C5			50	> 65%	> 65%
	Practical	Psychomotor, P4			30	> 65%	> 65%
	Personal Skills	Affective, A3			20	> 65%	> 65%
Course 2	Knowledge	Cognitive, C5			40	> 65%	> 65%
	Cognitive	Cognitive, C5			40	> 65%	> 65%
	Practical	Psychomotor, P3			20	> 65%	> 65%
Course 3	Cognitive	Cognitive, C5			80	> 65%	> 65%
	Cognitive	Cognitive, C5					
	Entrepreneurial	Affective, A3			20	> 65%	> 65%

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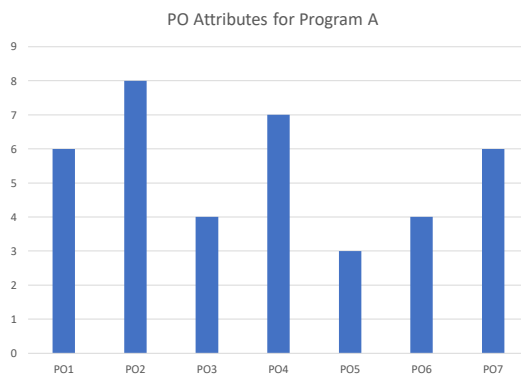
Table 1: Grading System and Point

GRADE (ACHIEVEMENT)	RELATIONS BETWEEN MARKS PERCENTAGE AND GRADE POINT	
	MARKS PERCENTAGES	GRADE POINT
A (Excellent)	80 – 100	4.0
A- (Excellent)	75 – 79	3.7
B+ (Honours)	70 – 74	3.3
B (Honours)	65 – 69	3.0
B- (Pass)	60 – 64	2.7
C+ (Pass)	55 – 59	2.3
C (Pass)	50 – 54	2.0
C- (Conditional Pass)	47 – 49	1.7
D+ (Conditional Pass)	44 – 46	1.3
D (Conditional Pass)	40 – 43	1.0
E (Fail)	0 – 39	0.0

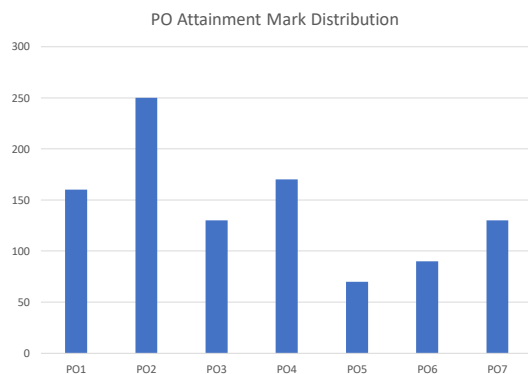
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Attainment Report – Analytics

No of CLO contribute to PO



Total of CLO Marks contribute to PO



Attainment Report – Analytics

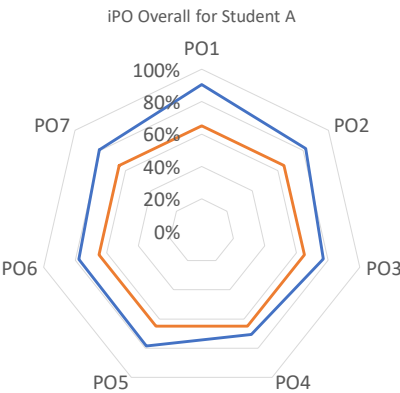
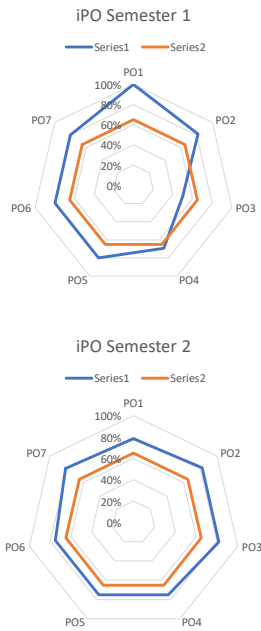
Full Mark

Semester 1					Semester 2					Total
Course 1	Course 2	Course 3	Course 4	Course 5	Course 6	Course 7	Course 8	Course 9	Course 10	
PO1		30	30	30	40			20	10	160
PO2		30	40	40	30	40	40	20	10	250
PO3		20			30	40	40			130
PO4	25	25	20	30	30			20	20	170
PO5	25	25							20	70
PO6	25	25						20	20	90
PO7	25	25					20	20	20	130
	100	100	100	100	100	100	100	100	100	1000

Achievement of Student A

Semester 1					Semester 2					Total	Total
Course 1	Course 2	Course 3	Course 4	Course 5	Course 6	Course 7	Course 8	Course 9	Course 10		
PO1		30	30	30	30			15	10	145	160
PO2		30	30	30	30	30	30	15	10	205	250
PO3		10				20	30	40		100	130
PO4	20	20	10	20	20			15	15	120	170
PO5	20	20							15	55	70
PO6	20	20						15	15	70	90
PO7	20	20					20	10	20	105	130
	80	80	80	80	80	80	80	80	80	800	1000

Attainment Report – Analytics



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CLO – PLO Attainment

Semester 1				Result	Feedback		CQI Activity		
Course 1	PO Mapping	Average Mark	KPI	Attainment	Lectures' Comment	Students' Feedback	Department Feedback	Suggestion	Endorsement
CLO1	PO4	60	65	Not Achieved					
CLO2	PO5	70	65	Achieved					
CLO3	PO6	80	65	Achieved					
CLO4	PO7	60	65	Not Achievent					

CLO	Achievement Level (from previous semester)	Suggested CQI (based on student performance/course contents/delivery methods/assessment methods) (from previous semester)	Evidence (to be implemented in current semester)
1	46 %	Pendedahan kepada IEM/BEM menggunakan pensyarah pelawat.	Surat jemputan pensyarah pelawat dan pengesahan kehadiran ke sesi kuliah minggu ke-3
2	89 %	KPI met. Delivery and assessment to remain status quo.	NA
3	69 %	Lecture notes for topic related to CO3 to be improved, especially on topic Environment & Sustainability).	New or additional lectures notes on topic Environment & Sustainability

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Attainment Report – Analytics

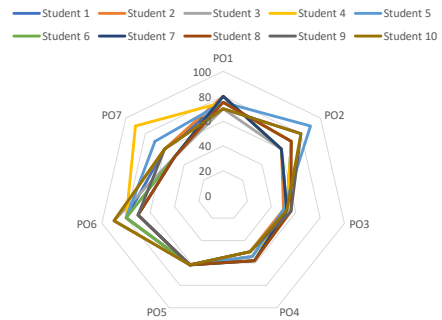
Semester 1					Semester 2						
Course 1	Course 2	Course 3	Course 4	Course 5	Course 6	Course 7	Course 8	Course 9	Course 10	Mean	KPI
PO1		80	70	70	80			70	80	75	65
PO2		60	80	80	60	80	60	80	60	70	65
PO3		50			50	60	50			53	65
PO4	60	50	60	50	50			50	60	54	65
PO5	70	50							65	62	65
PO6	80	80						80	80	80	65
PO7	60	60				60	60	60	60	60	65

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Attainment Report – Analytics

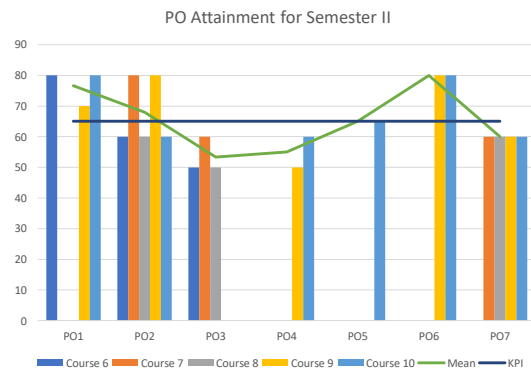
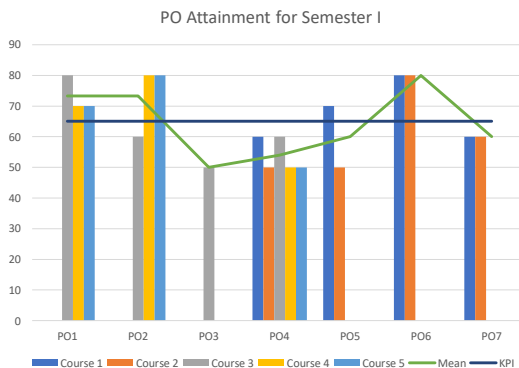
	PO1	PO2	PO3	PO4	PO5	PO6	PO7
Student 1	75	70	53	54	62	80	60
Student 2	80	60	50	50	62	90	60
Student 3	70	60	53	50	62	90	50
Student 4	75	70	53	54	62	80	90
Student 5	75	90	50	54	62	80	70
Student 6	80	60	53	58	62	80	50
Student 7	80	60	53	58	62	70	50
Student 8	75	70	56	58	62	70	50
Student 9	70	80	56	50	62	70	60
Student 10	70	80	53	50	62	90	60

Mark Distribution for 10 students of Cohort 1



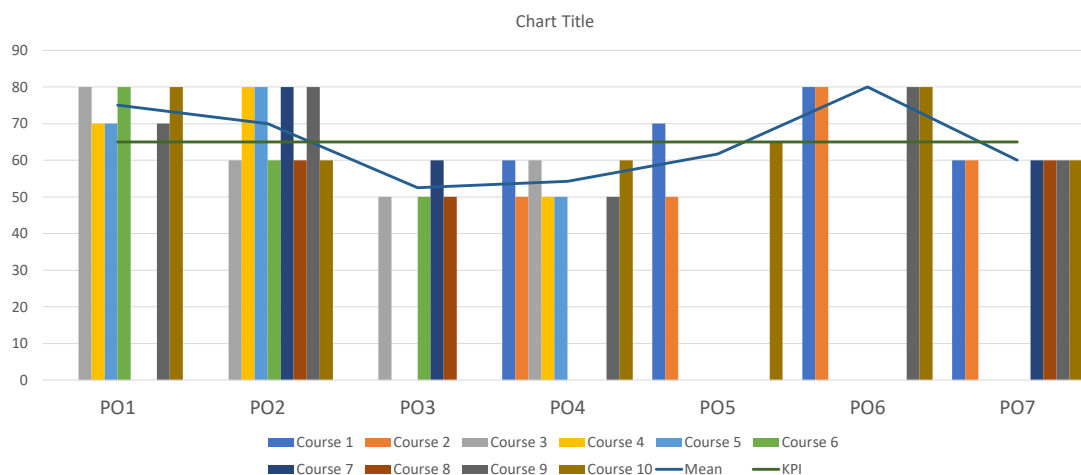
SLIDE 54

Attainment Report – Analytics



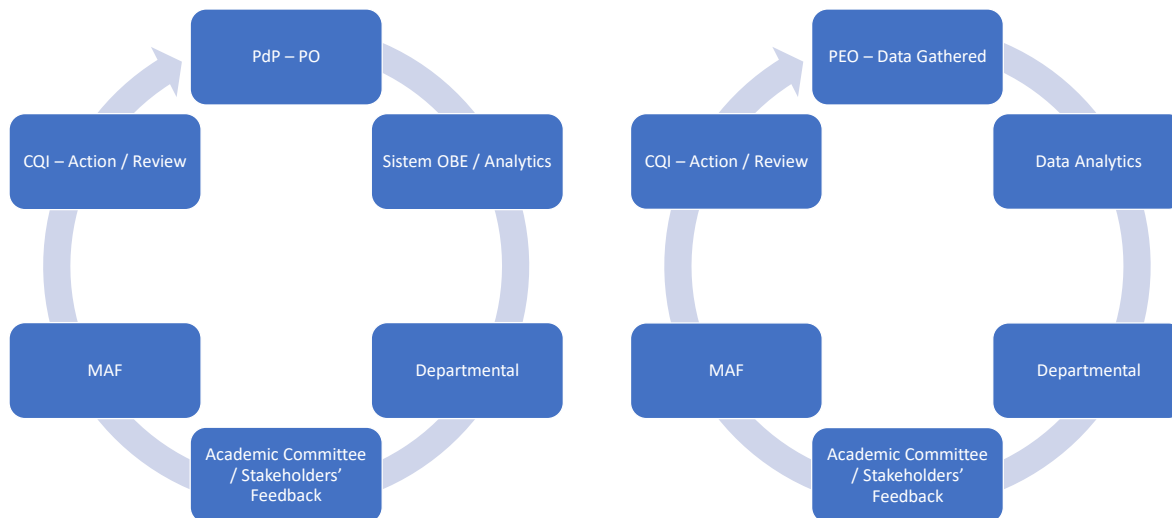
SLIDE 55

Attainment Report – Analytics



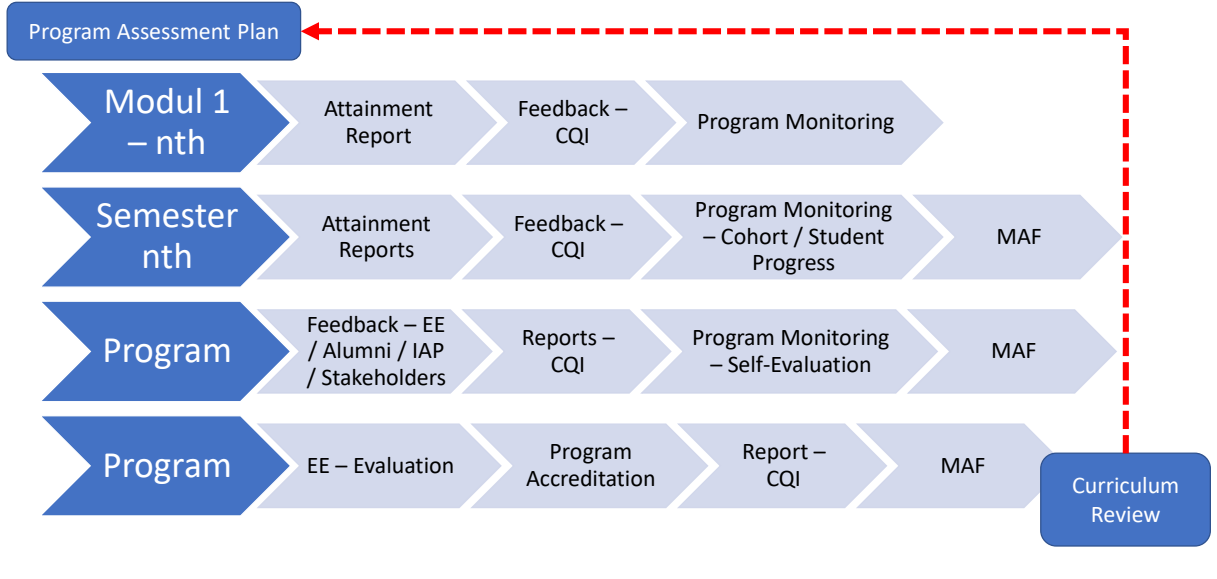
SLIDE 56

CQI cycle



SLIDE 57

OBE – Structural Plan (with Periodic Review)

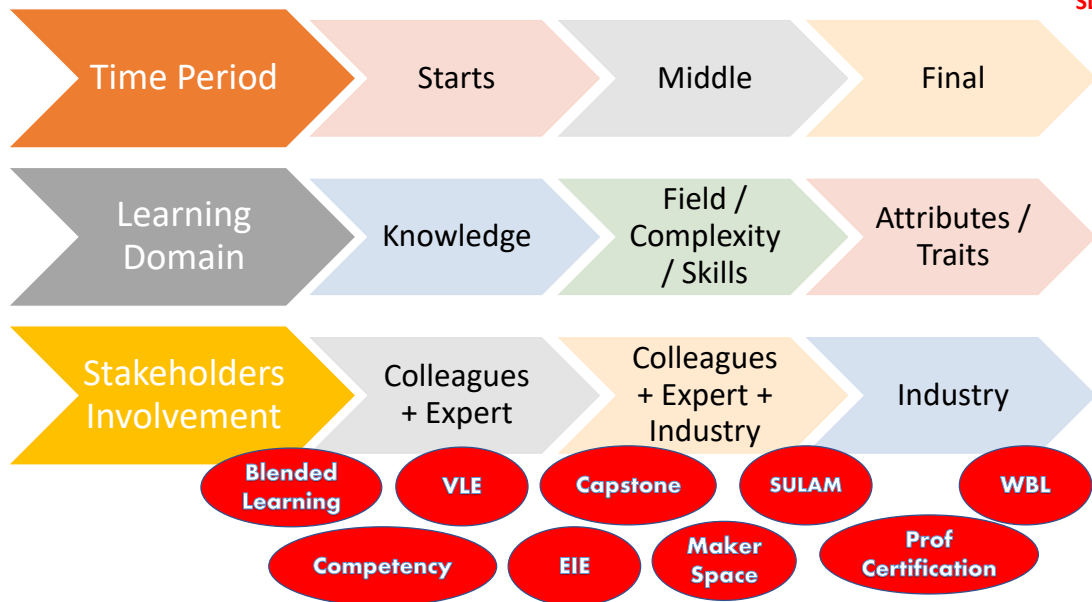


SLIDE 58

Outcome-based



SLIDE 59



SLIDE 60



SLIDE 61

Characteristics of Successful Engineers



Careers • Succeeding at Work

Personality Traits and Qualities of a Engineer Leader

An Engineering Skill Set Checklist

20 Traits Successful Senior Executives Share

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FIVE DEFINING TRAITS

of Mechanical Engineering Technologists

7 Qualities of a Great Software Engineer



SLIDE 62

