Outcome Based Education

(Assessment and CQI)

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For
UTM Academic Staff
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Expected Outcomes

At the end of this talk, you should be able to…….

1. *Plan and Map* the *Assessment methods* to the Intended Learning Outcomes.

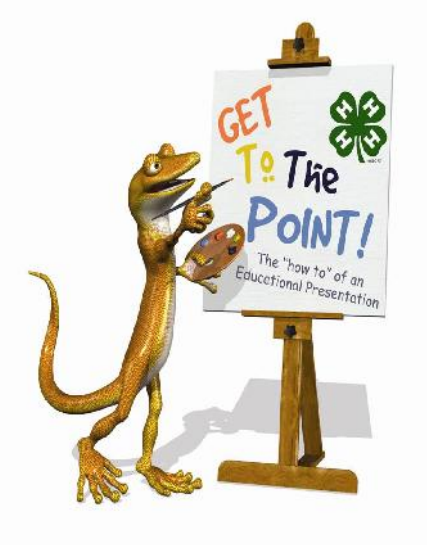
2. *Develop appropriate Assessment methods* that are able to measure the intended learning outcomes of the course.

3. *Analyse* and *Documents Assessment Result* to enable the CQI process to be carried out effectively.

CONTENTS

Part 1 : OBE – Constructive Alignment

Part 2 : Assessment Process



Part 3 : Continuous Quality Improvement

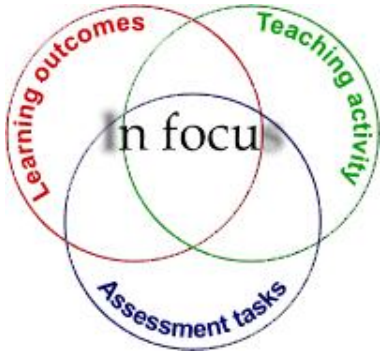
Hands On : Assessment Mapping

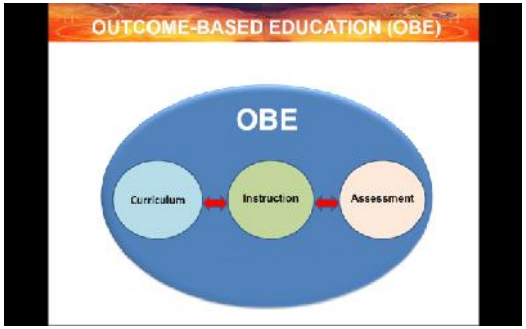
PROGRAMME

TIME	PROGRAMME
08.30 - 09.00	Registration
09.00 - 10.00	***Part 1 :*** OBE Overview – Constructive Alignment
10.00 - 10.30	Tea Break
10.30 - 12. 30	***Part 2 :*** Assessment Process
12.30 - 14.00	Lunch Break
14.00 - 15.00	***Part 3 :*** Continuous Quality Improvements
15.00 - 16.30	***Part 4 :*** Hands on – Assessment Mapping
16.30 - 17.00	Tea Break

Part 1

Outcome Based Education

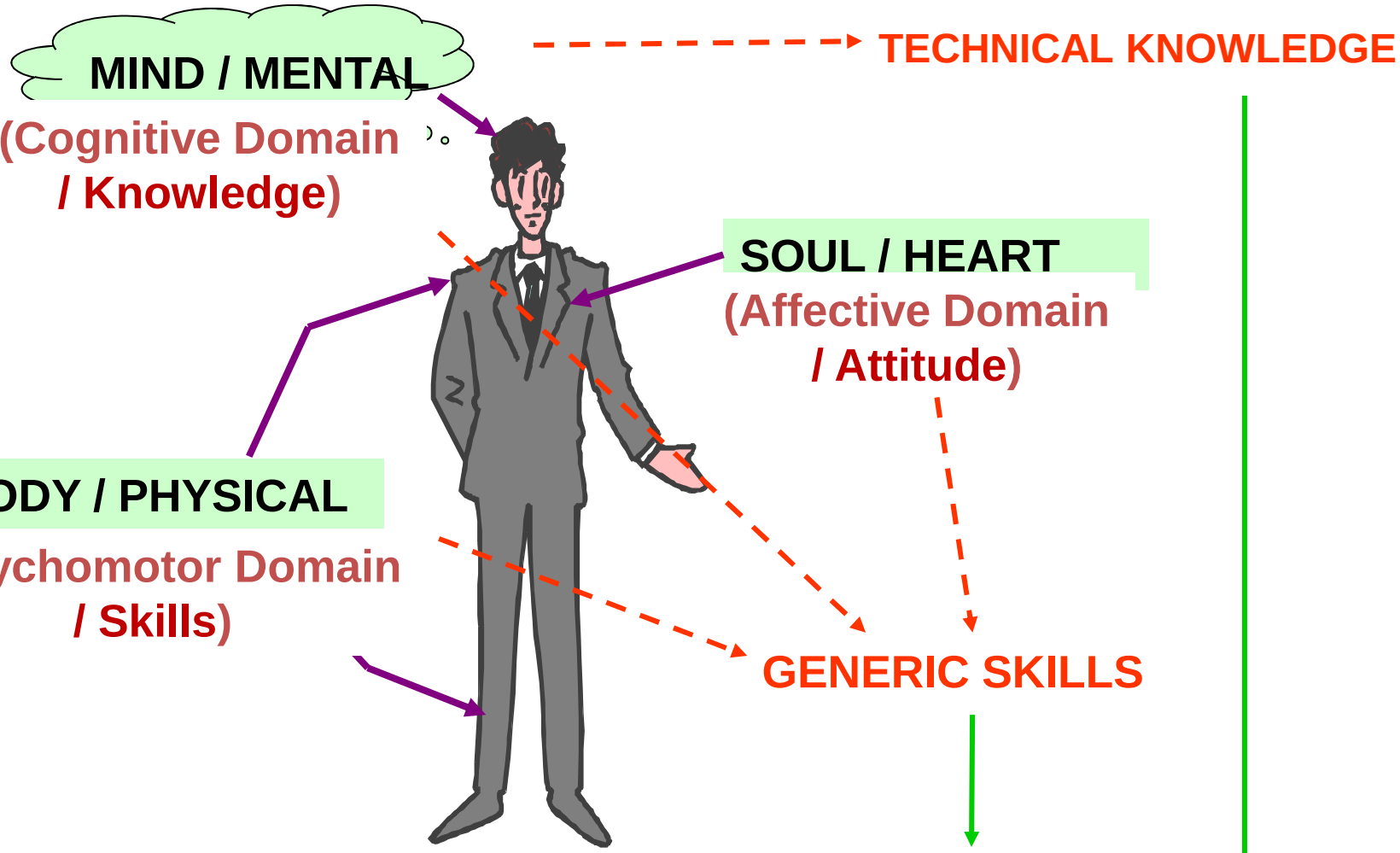




EDUCATION – My Simple Definition

Education is all about making a person a ***Good Human Being***. A good human being is a person who ***do good*** to him/her self, to his/her family, to the society, to the nation and to other human being and other creations.

OBE – *all About Human being*



OBE - Definition

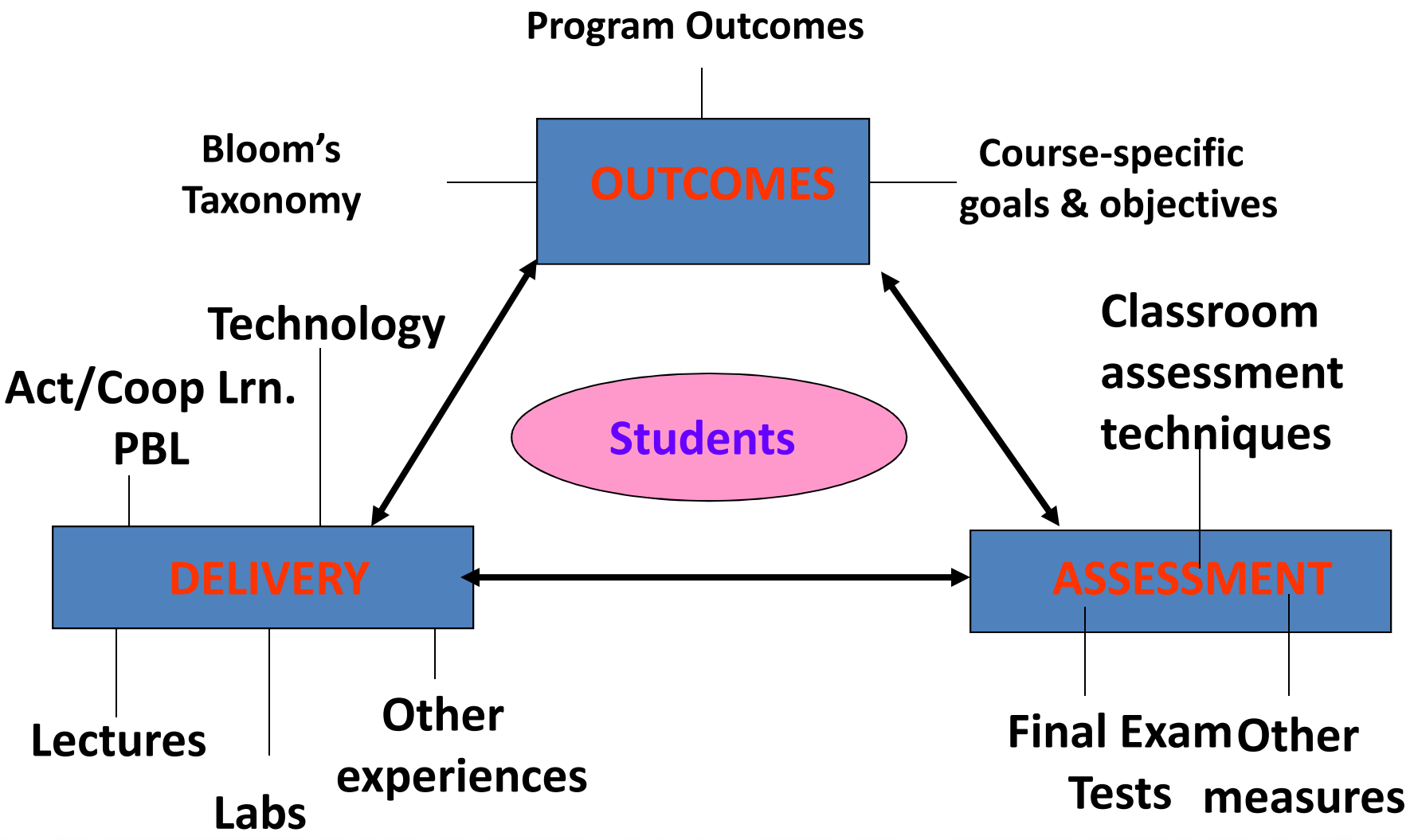
"Outcome-based education means starting with a clear picture of what is important for students to be able to do, then organising the curriculum, *instruction*, and assessment to make sure that this learning ultimately happens." (Spady, 1994)

OBE – *my broad* Definition

OBE : Outcomes Based Education

Education System that focus /emphasis on the development and achievement of student's outcomes

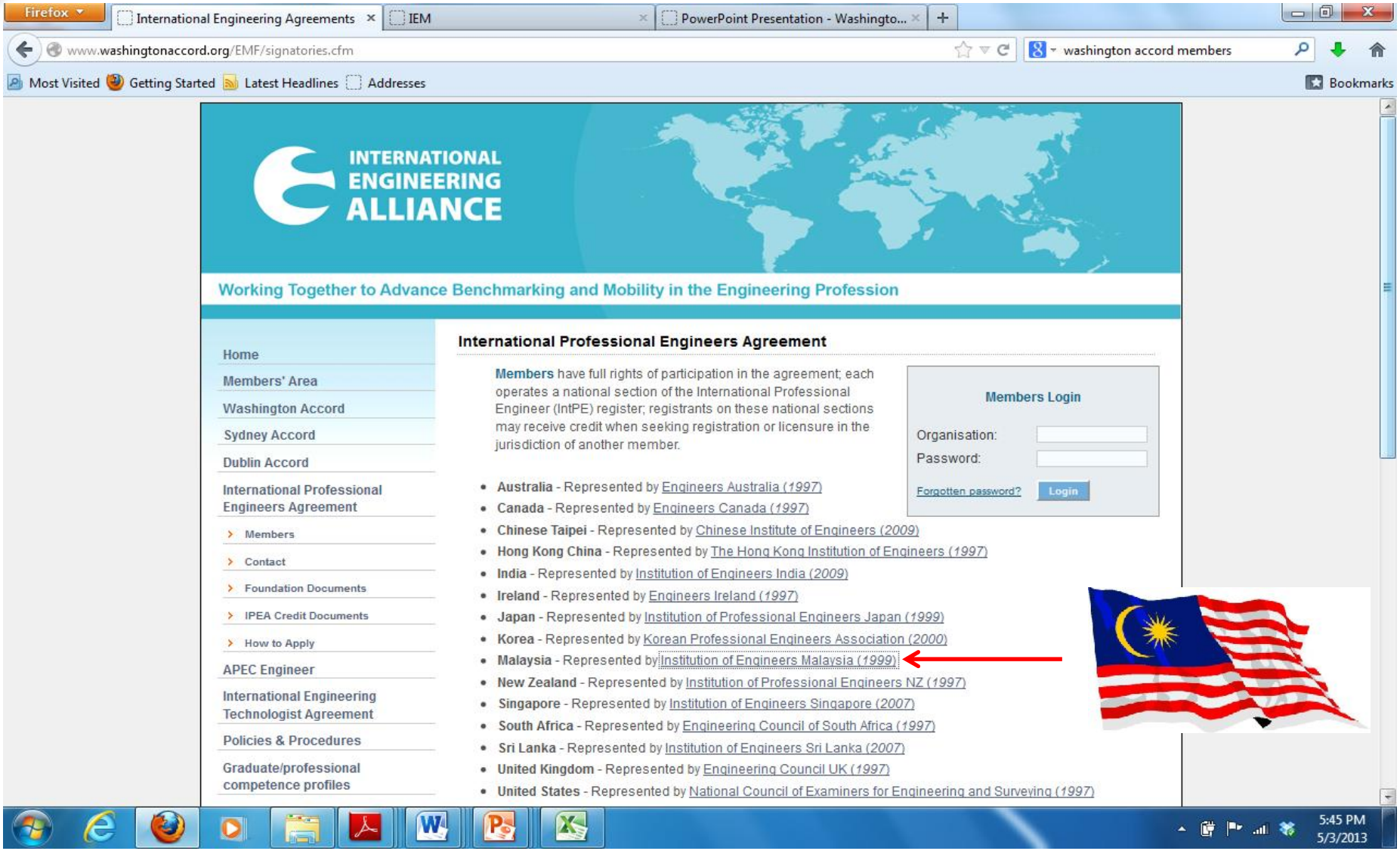
OBE – Constructive Alignment



OBE – is an Education System that;

- Require the Learning Outcomes to be made explicit and visible
- Aligned Assessment to the intended learning outcomes
- Aligned Delivery (Learning Activities & Environments) to the intended learning outcomes
- Provide necessary infrastructures and support system for the above to happen

Why OBE – Washington Accord



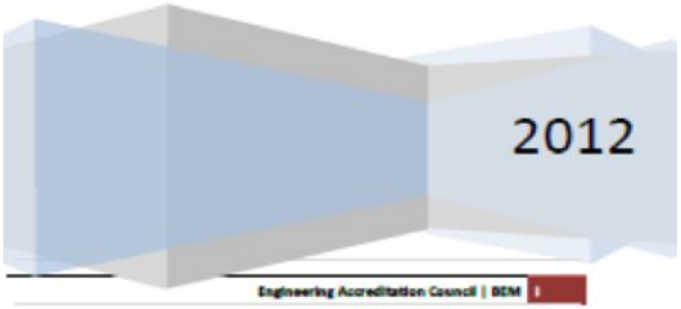
Why OBE – EAC


ENGINEERING PROGRAMME ACCREDITATION MANUAL 2012
Engineering Accreditation Council
Engineering Programme
Accreditation Manual
2012

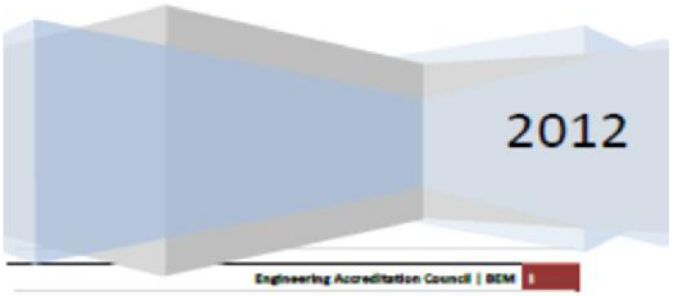

LEMBAGA JURUTERA MALAYSIA
The Institution of Engineers, Malaysia
MQA
Agensi Kelayakan Malaysia
Malaysian Qualifications Agency


ENGINEERING PROGRAMME ACCREDITATION MANUAL 2012
Engineering Accreditation Council

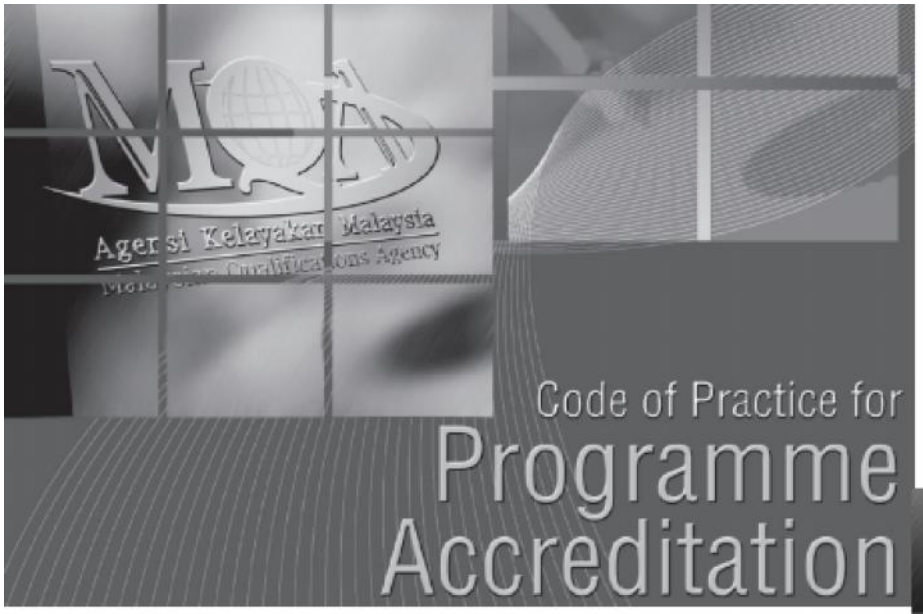

Engineering Programme
Accreditation Manual
2012


2012
Engineering Accreditation Council | BEM


LEMBAGA JURUTERA MALAYSIA
The Institution of Engineers, Malaysia
MQA
Agensi Kelayakan Malaysia
Malaysian Qualifications Agency


2012
Engineering Accreditation Council | BEM

Why OBE – MQA



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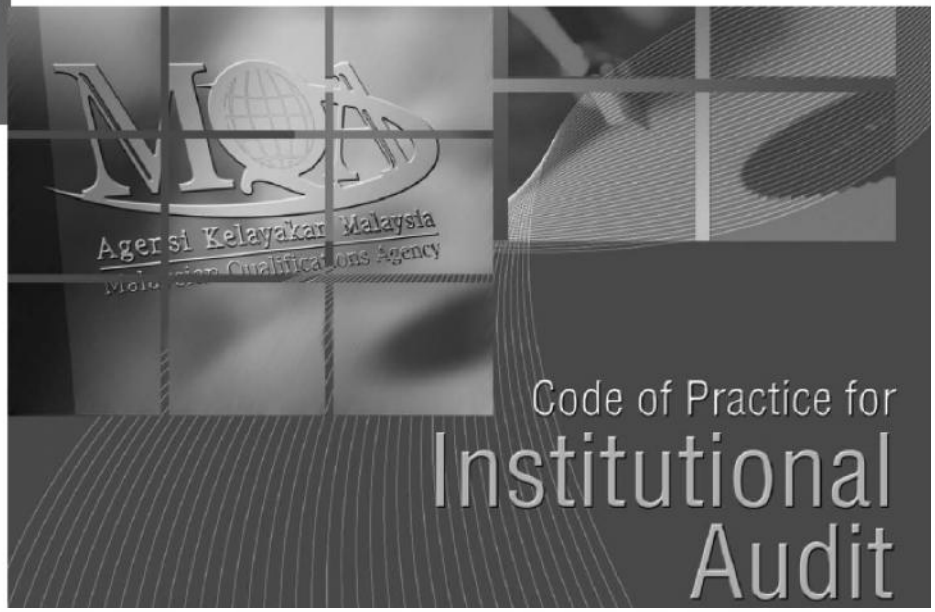

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OBE APPROACH

3 Stages of Backward Design

Identify the Desired Results

↓

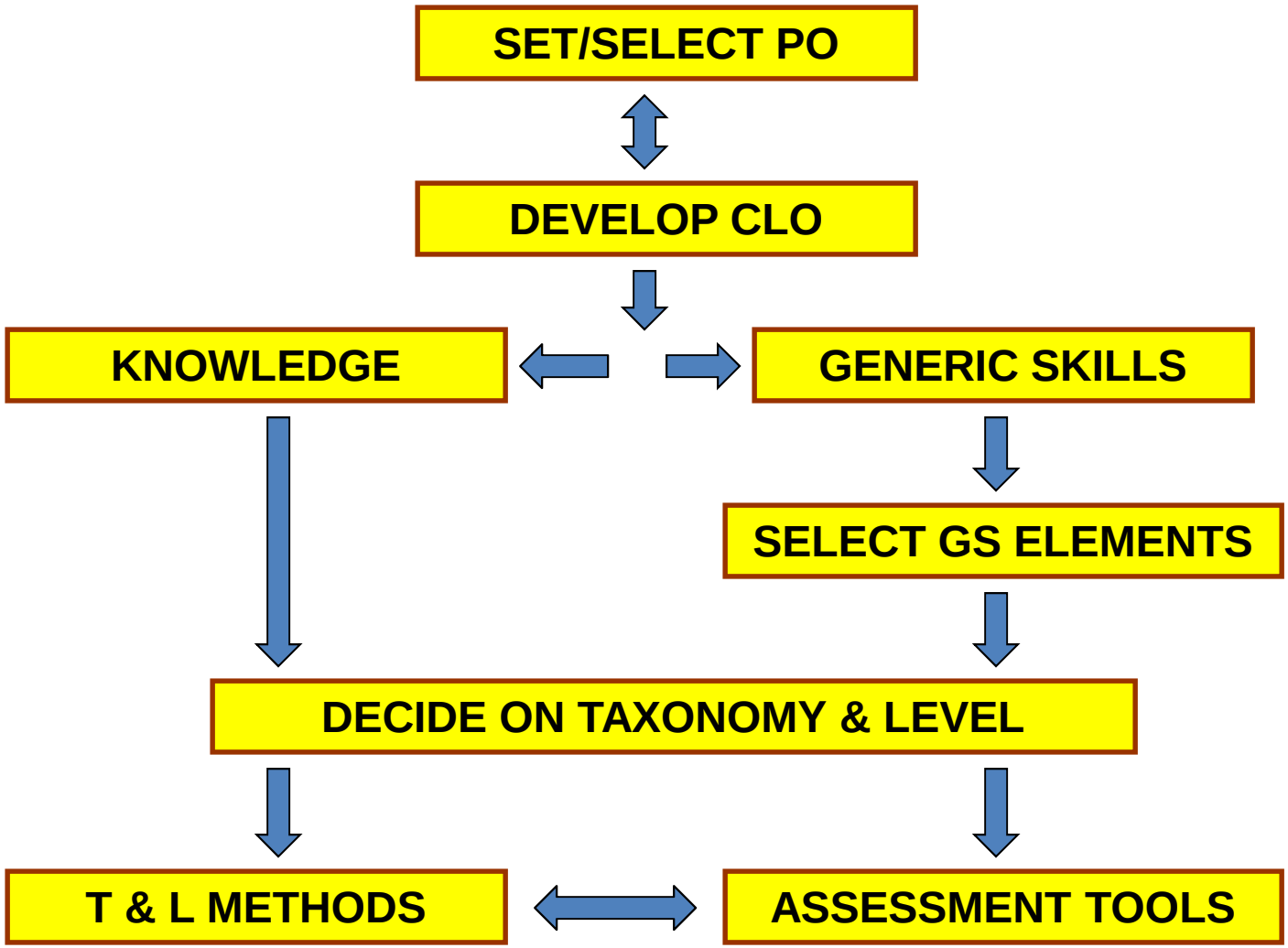
Determine Acceptable Evidence

↓

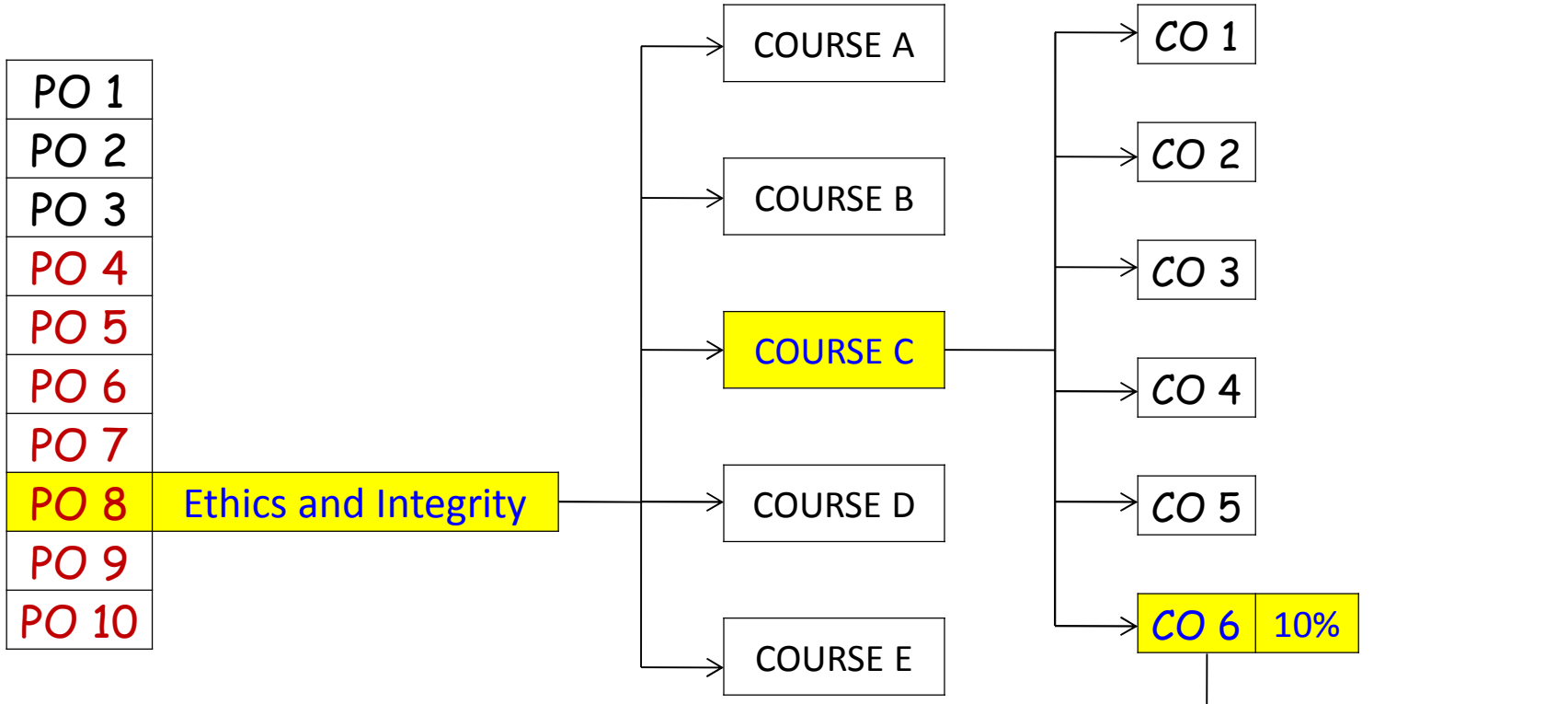
Plan Learning Experiences

Are the desired results, assessments, and learning activities ALIGNED?

OBE - The Approach



Planning & Designing

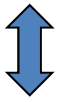


CO STATEMENT : Able to identify and discuss potential *conflict of interest* between financial, environment and social needs within the context of the course / subject learned	EM 1 / ET 3	AFFECTIVE DOMAIN	LEVEL 2 (RESPOND)

Planning & Designing

CO STATEMENT : Able to identify and discuss potential *conflict of interest* between financial, environment and social needs within the context of the course / subject learned	EM 1 / ET 3	AFFECTIVE DOMAIN	LEVEL 2 (RESPOND)

T&L ACTIVITIES : Assignment given to students, working in group of 3-4 members. Reading and Searching for information on related issues & cases from various sources (Internet, New papers etc). Brainstorming and Discussion Session within the group. Preparing Presentation Slide. Rehearsal Session within the group.	**SCHEDULE :** *Week 3* : Briefing on the outcomes and assignment. *Week 4* : Initial Brainstorming within the group. *Week 5 - 8* : Searching for information. *Week 9 -11* : Further Discussion. *Week 12* : Preparing Slides and Rehearsal Session



ASSESSMENT : Based on group Presentation and Q&A Session in Class. Assessed by Lecturer and Students of other groups. Mark will also be given to the group that asked the questions during the Q&A Session. Assessment done using rubric based on appropriate criteria.	**SCHEDULE :** *Week 6 - 11* : Monitoring progress, formative assessment. *Week 13-14* : Presentation and Q&A Session by all groups

Planning & Designing

CLO 1	**Write** a Formal Report that describe relevant process in company according to standard technical report format within the given time	**PO 4**

LEARNING ACTIVITES

During Training;
-Observe & record process, data, tools etc
- Draw Flow Chart & process Diagrams
- Take Pictures / sketches
- Read & Extract Manual
-Discuss with company's Personnel
- Learn report writing
- Prepare report Draft

Generic Skills

CS 1

Psychomotor

Level 4

ASSESSMENT

Based on IT Report
-Contents
- Layout
- Flow of thought
-Clarity
-Completeness
-English
-References
-Acknowledgement
-Submission time

Measured using Template with holistic rubric

Reviewing Learning Outcomes

Based on your course outline;

1. Select **ONE course learning outcome (CO)** that you are comfortable with
2. Explain (in writing) **What Exactly** do you expect your student to be able to do / deliver / demonstrate from the outcome.
3. Does it fall under **Technical Knowledge** or **Generic Skills** ?
4. If it is categorized as GS, which **MoHE GS elements** is being addressed ?
5. Identify Which **Learning Domain** that the outcome is addressing ?
6. At What **Level of Taxonomies** ?
7. **What** to be **measured** and **How** to **measure** the intended learning outcome ?
8. How do you intend to **teach (deliver)** the learning outcome to your students ?
9. Which PO(s) that is being addressed by this CO (**CO-PO Mapping**) ?

Does the learning outcome ***deliverable, measurable and achievable***. Do you think you need to rewrite / refine the learning outcomes – gives your comment and suggest improvement if necessary.

Sample

1. Select **ONE course learning outcome (CO)** that you are comfortable with

At the end of this course students should be able to;

Assess the stability of a ship or floating structures correctly **based on IMO requirements**

2. Explain (in writing) **What Exactly** do you expect your student to be able to do / deliver / demonstrate from the outcome.

Given a ship or Floating Structures data and drawing, the student should be able to;

- Read and Extract the necessary information from the data / drawing
- Perform necessary calculation using appropriate formula and calculation procedures to determine stability parameters
- Analyse the parameters based on IMO requirement to determine whether the ship is stable or not
- Write the result in appropriate format

Sample

3. Does it fall under **Technical Knowledge** or **Generic Skills** ?

Technical Knowledge

4. If it is categorized as GS, which **MoHE GS elements** is being addressed ?

Not Relevant

5. Identify Which **Learning Domain** that the outcome is addressing ?
6. At What **Level of Taxonomies** ?

Cognitive domain (Knowledge) at Level 5 - Evaluation

Sample

7. What to be measured and How to measure the intended learning outcome ?

- Ability to read and extract appropriate data
- Ability to calculate correctly
- Ability to use IMO rules and making judgment on the ship stability

(Measure through stability project report based on real ship data/drawing - written report)

8. How do you intend to teach (deliver) the learning outcome to your students ?

- Giving lecture on concept and method of calculation
- Ask student to work out examples and exercises in class
- Show real examples of stability assessment (from stability booklet) and let them study the booklet
- Give mini project on ship stability (in group) based on real ship data
- Facilitate and monitor students work via weekly discussion
- Ask the to present their works

Sample

CLO MAPPING

NO	COURSE LEARNING OUTCOMES	PERFORMANCE CRITERIA	TK / GS	DOMAIN / ELEMENTS	LEVEL	PO	T&L	ASSESSMENT
1	**Assess** the stability of a ship or floating structures correctly **based on IMO requirements**	Read and Extract Calculate Analyse Write	TK	C	5	PO 3	Lecture, show real sample, mini project, presentation	Ability to read and extract appropriate data, calculate correctly, use IMO rules and making judgment on the ship stability
2								
3								
4								
5								

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About

Learning Outcomes

OUTCOMES

Levels of Outcomes	What students able to do
Program Educational Objectives (PEO/PO)	3 to 5 years after graduation
Programme Outcomes (PO/PLO)	Upon graduation
Course Learning Outcomes (CO/CLO)	After completing each course

See Some Example

About
Course Delivery

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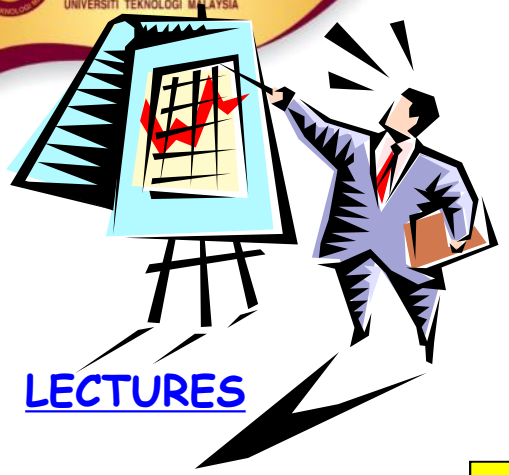
OBE -T & L METHODS



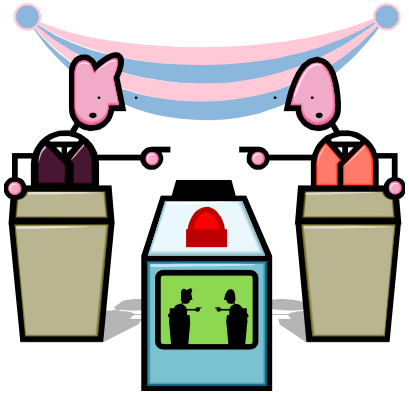
LECTURES

ACTIVE LEARNING

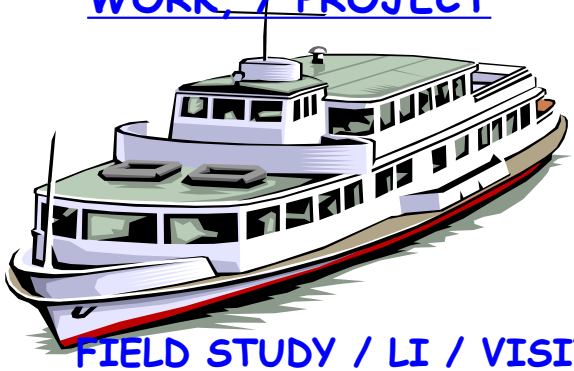
E-LEARNING

PROBLEM BASED / LAB WORK / PROJECT

LIFE LONG LEARNING



COOPERATIVE LEARNING



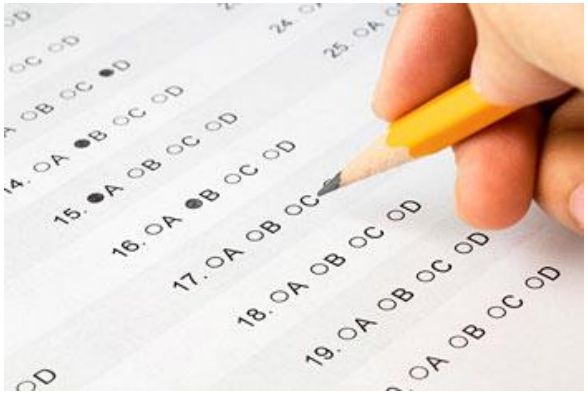
FIELD STUDY / LI / VISITS

About SCL

Problem Based Learning / Case Study / Modular / Inquiry-based learning / Discovery learning / Case-based learning / Project-based learning / Problem-oriented project-based learning / Cooperative learning /Brainstorming / Field-based learning / Constructivist learning / Web-based learning /Computer-based learning / Experiential learning / Peer Instruction / Scenario Based.....

About

Course Assessment



ASSESSEMNT - The Tools

Outcomes	Possible Assessment Tasks
Describe	essay question, exam, oral presentation (peer assessment)
Explain	assignment, essay question exam, oral, letter-to-a-friend
Integrate	project, assignment
Analyse	case study, assignment
Apply	project, case study, experiment
Solve problem	case study, project, experiment
Design, create	project, experiment
Reflect	reflective diary, portfolio, self-assessment
Communicate	a range of oral, writing or listening tasks, e.g. presentation, debate, role play, reporting, assignment, paraphasing, answering questions etc.

Source : Professor John Biggs

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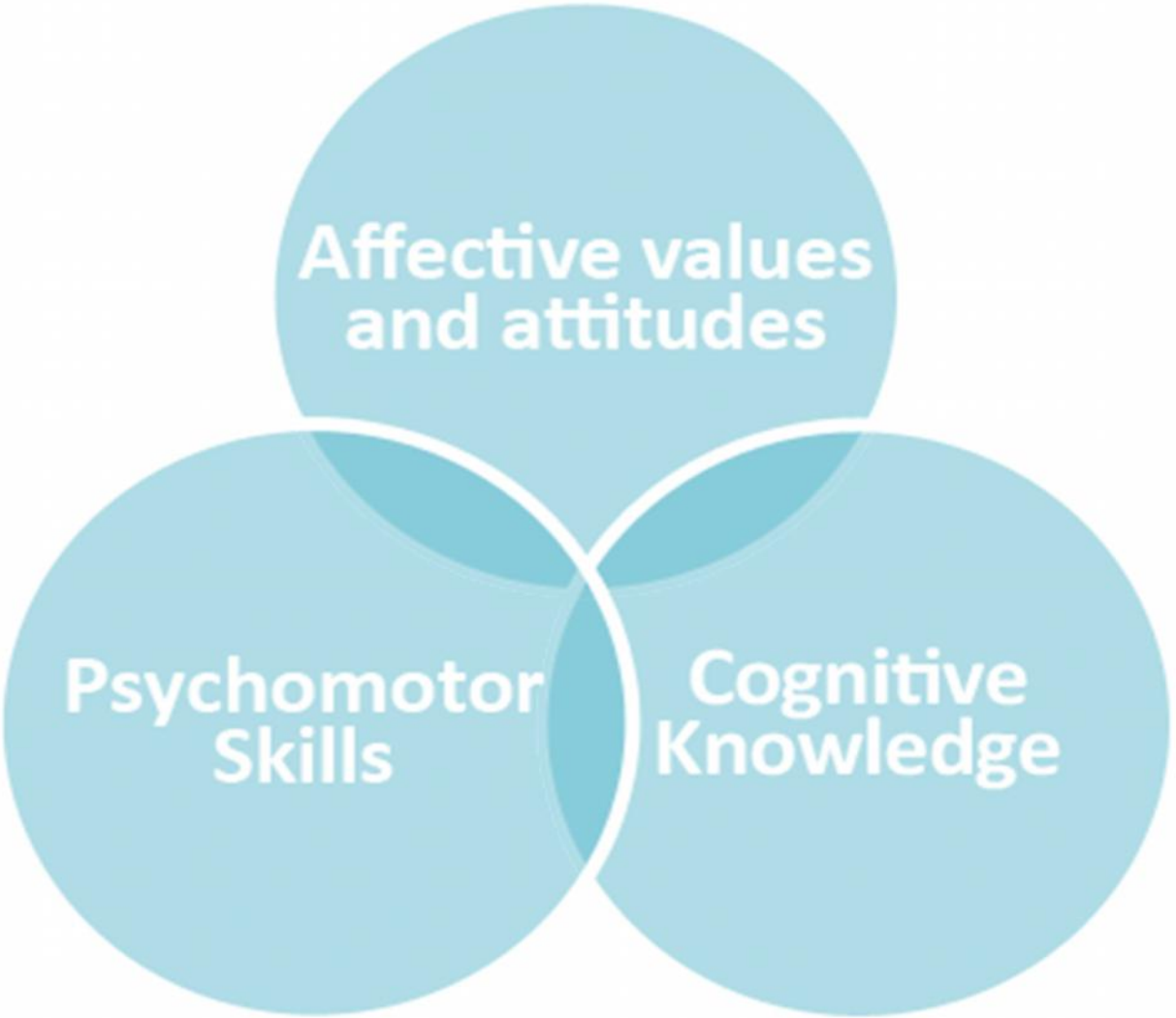
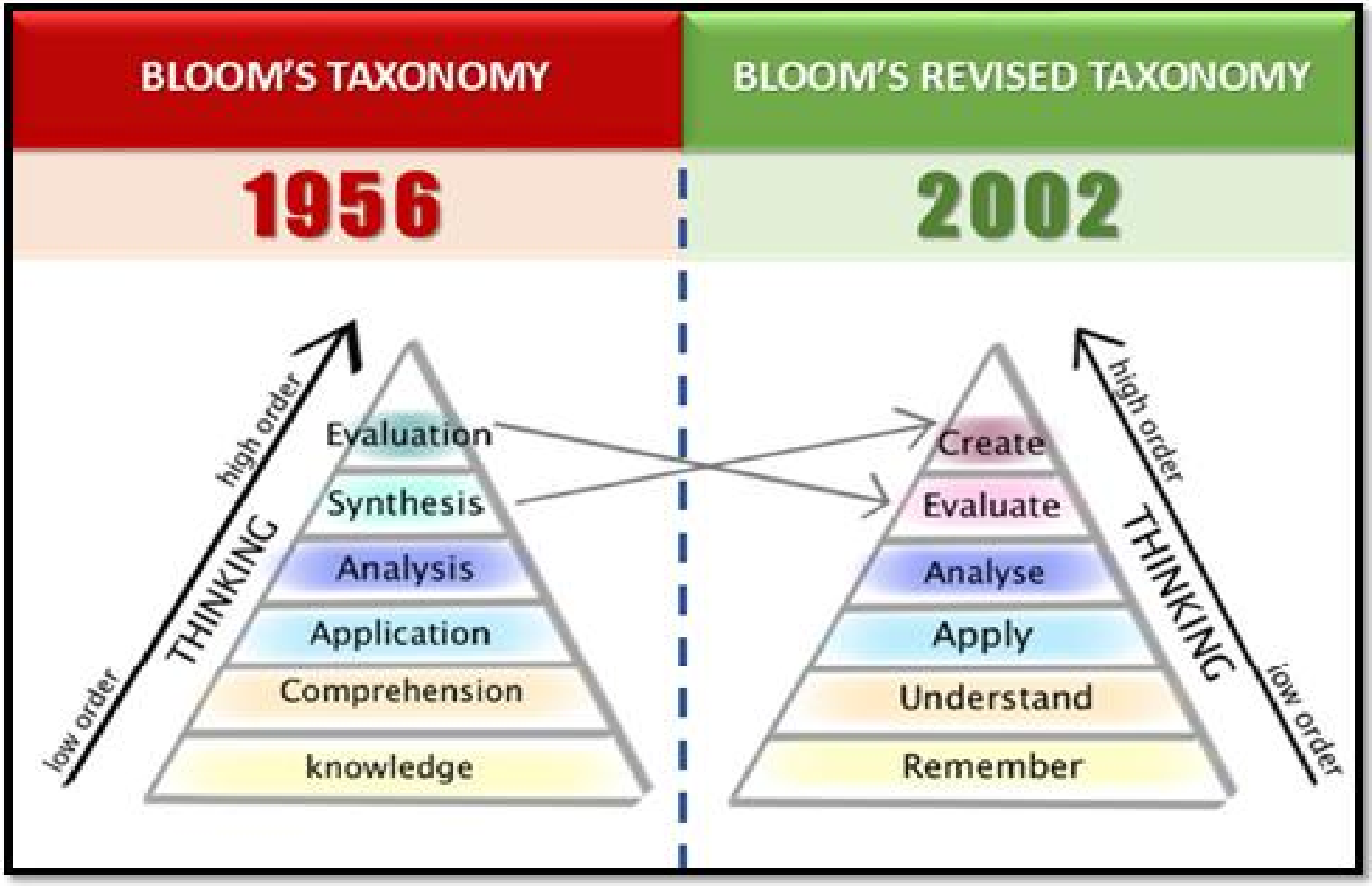
About

Learning Taxonomy

Learning Taxonomy



Cognitive Domain



Affective Domain

Feeling, Emotions, Attitude, Beliefs

First developed by Bloom (1956), revised by Bloom, Krathwhol and Masia (1964)

LEVEL	DESCRIPTION	BEHAVIOUR
1	RECEIVE	AWARENESS
2	RESPOND	REACT
3	VALUE	UNDERSTAND & ACT
4	ORGANIZE	DEVELOP VALUE SYSTEM
5	INTERNALIZE	BEHAVE CONSISTENTLY

Psychomotor Domain

SIMPSON

LEVEL	DESCRIPTION	BEHAVIOUR
1	PERCEPTION	AWARENESS
2	SET	READINESS
3	GUIDED RESPONSE	ATTEMPT
4	MECHANISM	BASIC PROFICIENCY
5	COMPLEX OVERT RESPONSE	EXPERT PROFICIENCY
6	ADAPTATION	ADAPTABLE PROFICIENCY
7	ORIGINATION	CREATIVE PROFICIENCY

OBE – *Paradigm shift*

The success of OBE requires the following paradigm shift;

- *From* Grade Oriented *to* Outcomes Oriented
- *From* Content Based *to* Ability Based
- *From* Lecturer Centred *to* Student Centred

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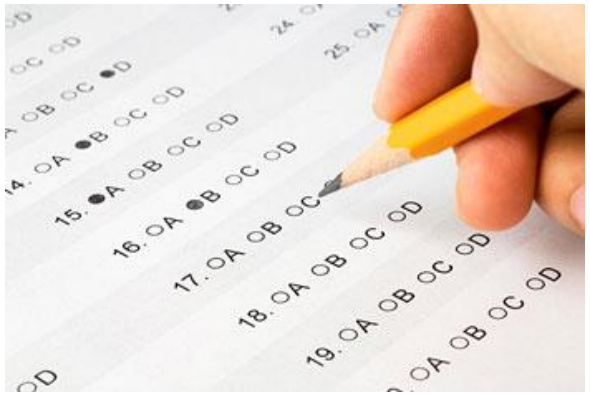
End of Part 1

Part 2

Assessment Process



OBE – The Assessment

Assessment is a process of *measuring* and *collecting* the **data** (mark / score) in a manner that enable us to *analyse* the **achievement** of the intended **learning outcomes** and the **effectiveness** of the **learning activities.**

.....It is similar to conducting experiment or research works

Assessment – Broad Definition

Observing, measuring, recording, analysing of student's performance against certain standard/expectation

For What Purpose ?

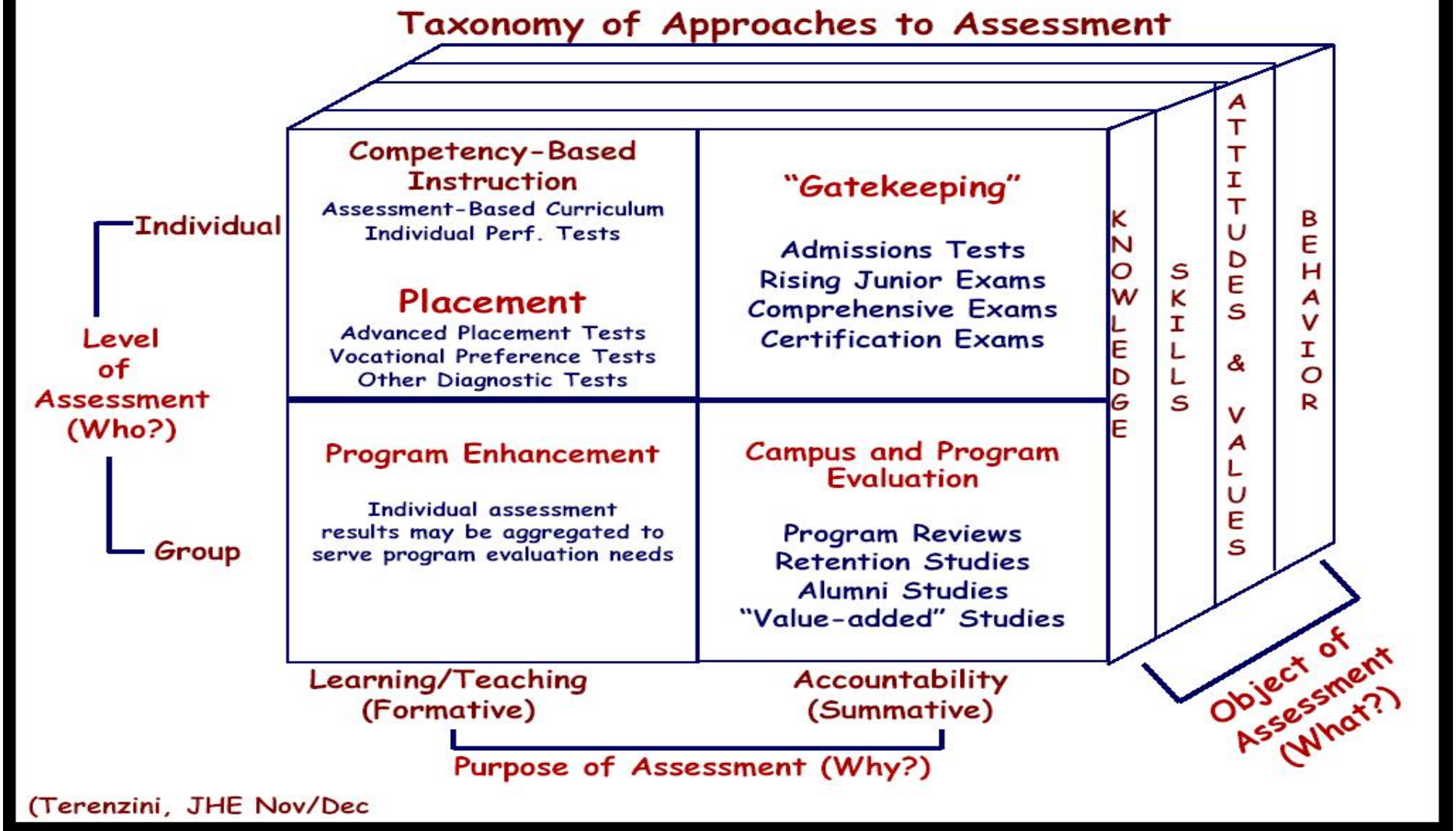
1. GRADING……

2. IMPROVEMENT

Assessment – Term & Definition

Terms	Definition	Common terms for same concept
Objectives	Statements that describe the expected accomplishments of graduates during the first few years after graduation.	Goals, outcomes
Outcomes	Statements that describe what students are expected to know and able to do by the time of graduation.	Objectives, standards.
Performance Criteria	Specific, measurable statements identifying the performance(s) required to meet the outcome; confirmable through evidence.	Standards, indicators, rubrics, specifications, metrics, outcomes
Assessment	Processes that identify, collect, use and prepare data that can be used to evaluate achievement.	Evaluation
Evaluation	Process of reviewing the results of data collection and analysis and making a determination of the value of findings and action to be taken.	Assessment

ASSESSEMENT – Taxonomy of Approaches



ASSESSEMENT – Types

- Formative Assessment: "The collection of data and the feedback of the results on an ongoing basis" (G. Rogers & J. Sando, 1996) – *For Continuous Improvement to students learning and T&L activities*

- Summative Assessment: "Designed to produce information that can be used to make decisions about the overall success of the project or process." (G. Rogers & J. Sando, 1996) – *For grading purposes*

ASSESSEMENT - Types

- Direct measures provide for the direct examination or observation of student knowledge or skills against measurable learning outcomes – *From Assignments, tests, final exam, reports, presentation, etc, where the COs and POs can be measured directly.*

- Indirect measures of student learning ascertain the perceived extent or value of learning experiences – *From course end survey, exit survey, stake holder survey, interview etc.*

ASSESSEMENT – Types

- **A**ssessment ***O***f **L**earning (A***o***L)
- **A**ssessment ***F***or **L**earning (A***f***L)
- **A**ssessment ***A***s **L**earning (A***a***L)

Assessment Stages

Planning Assessment

↓

Formulating Assessment

↓

Grading, Feedback and Recording

↓

Using Assessment to Improve Learning

Assessment Process - Steps

STEP 1 : Planning the Assessment

STEP 2 : Developing / Using Appropriate Assessment Tools

STEP 3 : Collecting Detail Data

STEP 4 : Calculating the Result of Achievement

STEP 5 : Analysing the Result

STEP 6 : Propose Improvements

STEP 7 : Documentation

Assessment Process - Planning

STEP 1 : Planning the Assessment

In *Previous Academic System*, Planning of assessment was mainly based on Syllabus, Topics, Level of Difficulty, mark distribution etc.

(Or…….No planning at all – Recycle)

Under OBE, Planning of assessment should be based on Outcomes (CLO and PO) and the distribution of mark to be based on CLO-PO Mapping.

Assessment Process - Planning

Example of CLO-PO Mapping

SMK 2722 - SHIP PRODUCTION TECHNOLOGY - SEM II 2007-08 - ANALYSIS ON PO IMPLEMENTATION

		Acquire Knowledge	Apply Knowledge	Design & Evaluate	Critical Thinking	Lead and Manage	Tech Report Writing	Communication	Team Working	Entrepreneurship	Life Long Learning	Professional Ethics
CLO NO	**CLO DESCRIPTION**	***PO 1***	***PO 2***	***PO 3***	***PO 4***	***PO 5***	***PO 6***	***PO 7***	***PO 8***	***PO 9***	***PO 10***	***PO 11***
1	Write down clearly the importance and development of shipbuilding industry in Malaysia	a										
2	Draw the production flow Chart of a ship and explain in writing individual process involved	a										
3	Determine the factors for selecting location, Draw typical layout, and list down facilities of a modern Shipyard	a	c	c	c							
4	State down clearly the important aspects of ship production systems and apply the concept in a selected case study	a	a		c							
5	Write down clearly the importance and application of computers and automation in shipbuilding industry	a										
6	Discuss the importance and tasks involved in ship survey, repair and conversion	a										
7	Seek and summarized additional information form various sources on certain topic given in the assignment										1	
8	Work in group effectively during class discussion and in solving some of the assignment given					2		1	2			
9	Present clearly using the available presentation tool within the specific time the short Assignment given in the class							1	2			
	TOTAL	**6a**	**1a, 1c**	**1c**	**2c**	**2**	**0**	**1**	**2**	**0**	**1**	**0**

Assessment Process - Planning

Sem / Sesi *(Sem / Session)* : **II 208-09**	**Kod Kursus** *(Course Code)* : **SMK 2722**
Nama Kursus *(Course Name)* : **SHIP PRODUCTION TECHNOLOGY**	
Nama Pensyarah / Penyelaras *(Lecturer(s) / Coordinator Name)* : **YAHYA BIN SAMIAN**	
% Pep Akhir Dari Keseluruhan Penilaian *(% of Final Exam From Total Assessment)* : **60**	**Masa** *(Time)* : **3 Hrs**
Arahan Peperiksaan *(Examination Instruction)* : **Choose 3 questions from question 1-4 and answer question 5**	

NO SOALAN *(Question No)*	CLO	PROGRAMME OUTCOMES				JUMLAH % *(% Total)*	MASA - Min *(Time - Min)*	ULASAN PENYEMAK/PANEL *(Moderator's/Panel Comments)*
		PO 1	*PO 2*	*PO 3*	*PO 4*			
Question 1						25	45	
a, b & c	1	10						
d			10					
e				5				
Question 2						25	45	
a & b	2	10						
c & d			10					
e	3			5				
Question 3						25	45	
a, b & c	3	10						
d	4		10					
e				5				
Question 4						25	45	
a & b	5	10						
c & d			10					
e				5				
Question 5						25	45	
a, b, c & d	6	15						
e					10			
JUMLAH PERATUS *(Total Percentage)*		**45**	**30**	**15**	**10**	**100**	**180**	**NAMA PENYEMAK** *(Moderator's Name)*

Programme Outcomes : **PO 1** - Acquire & Understand Knowledge, **PO 2** - Apply Knowledge, **PO 3** - Design & Evaluate, **PO 4** - Critical Thinking & Creativity

Assessment Process - Planning

SEM / SESI *(Sem / Session)* : **II 2008-09**	**KOD KURSUS** *(Course Code)* : **SMK 2722**
NAMA KURSUS *(Course Name)* : **SHIP PRODUCTION TECHNOLOGY**	**KAEDAH P & P** *(T & L Method)* : ***Lecture, AL, CL, PBL, Video***
NAMA PENSYARAH / PENYELARAS *(Lecturer / Coordinator Name)* : **YAHYA BIN SAMIAN**	
% PEP. AKHIR *(% of Final Exam)* : **60**	**% KERJA KURSUS** *(% of Course Works)* : **40**

KERJA KURSUS *(Course Works)*	**CLO**	**% MARKAH** (% Marks)	**AGIHAN MARKAH SETIAP PO** *(Mark Distribution for each PO)*										
			PENGETAHUAN TEKNIKAL *(Technical Knowledge)*				**KEMAHIRAN GENERIK** *(Generic Skills)*						
		PO	***PO 1***	***PO 2***	***PO 3***	***PO 4***	***PO 5***	***PO 6***	***PO 7***	***PO 8***	***PO 9***	***PO 10***	***PO 11***
Class Ex - SPT	5,7	2				2							
Class Ex - CPA	5	2		1.2			0.8						
Quiz - PF	2	3	3										
Class Ex - SYL	3	2								2			
Class Ex - SYL	6	2	2										
Quiz - SYL	7	2		2									
Ref - LM	8	2							2				
Quiz - OBE	5	3							3				
Class Ex - CPA	6	2		0.8			1.2						
FE - Eng	9	2						2					
Test 1	1,2,3	15							4.5			10.5	
Atten	8	3											3
JUMLAH KERJA KURSUS *(Total course Works)*	1-9	40	5	4	0	2	2	2	9.5	2	0	10.5	3
PEP AKHIR *(Final Exam)*	1-6	60	27	18	9	6							
JUMLAH MARKAH *(Total Marks)*		100	32	22	9	8	2	2	9.5	2	0	10.5	3

PO (Programme Outcomes) : **PO 1** - Acquire & Understand Knowledge, **PO 2** - Apply Knowledge, **PO 3** - Design & Evaluate, **PO 4** - Critical Thinking & Creativity
PO 5 - Lead & Manage, **PO 6** - Writting, **PO 7** - Communication , **PO 8** - Team Working, **PO 9** - Entrepreneurship, **PO 10** - Life Long Learning, **PO 11** - Professional E

Assessment Process – Planning (Simpler Version)

				CLO DISTRIBUTION				PO DISTRIBUTION					
				CLO 1 Description	CLO 2 Description	CLO 3 Description	TOTAL	PO 1 Description	PO 2 Description	PO 3 Description	PO 4 Description	TOTAL	
NO	**ASSESSMENT ITEMS**	**Full Mark**	**%**	**CLO 1**	**CLO 2**	**CLO 3**		**PO 1**	**PO 2**	**PO 3**	**PO 4**		
1	Quiz 1	10	5	100			***100***	80	20			***100***	**5**
2	Test 1 - Question 1	5	5	100			***100***	50	50			***100***	**20**
3	Test 1 - Question 2	15	15		100		***100***		40	60		***100***	
4	Assignment Report 1 - Content	50	10			100	***100***	10	40	50		***100***	**20**
5	Assignment Report 1 - Layout & Organization	20	4			100	***100***				100	***100***	
6	Assignment Report 1 - Writing Skills	30	6			100	***100***				100	***100***	
7	Test 2 (a)	25	7.5	50	50		***100***		20	80		***100***	**15**
8	Test 2 (b)	25	7.5		100		***100***			100		***100***	
9	Final Exam - Section A - Q1-Q6	50	20	40	60		***100***	100				***100***	**40**
10	Final Exam - Section B - Q1	20	8	100			***100***		100			***100***	
11	Final Exam - Section B - Q2	20	8		100		***100***		100			***100***	
12	Final Exam - Section C	10	4			100	***100***			100		***100***	
	TOTAL		**100**	29.75	46.25	24	**100**	27.5	31	31.5	10	**100**	100
				CLO CONTRIBUTION				**PO CONTRIBUTION**					

Assessment Process – Planning (Much Simpler Version)

NO	ASSESSMENT ITEMS	%	FULL MARK	CLO 1	CLO 2	CLO 3	CLO 4	CLO 5
				PO 1	PO 2	PO 4	PO 7	PO 11
1	ASSESSMENT 1	5	10	Ě				
2	ASSESSMENT 2	10	100		Ě			
3	ASSESSMENT 3	15	50					Ě
4	ASSESSMENT 4	20	100				Ě	
5	ASSESSMENT 5	25	25			Ě		
6	ASSESSMENT 6	25	40		Ě			
TOTAL		***100***		***5***	***35***	***25***	***20***	***15***

Ě : Represent 100 % mapping

Provided : 1 CLO mapped to 1 PO and 1 Assessment Item Mapped to 1 CLO

Assessment Process - Developing

STEP 2 : Developing / Using Appropriate Tools, Form, Rubrics etc

Developing the assessment elements (Final exam, test, quizes etc) and assessment form/templates/rubrics based on the PO / Bloom's Taxonomy

Assessment Process - Developing

SUBJECT CODE : SMK 2722 / SZL 2722 / SML 3712

SUBJECT NAME : SHIP PRODUCTION TECHNOLOGY

COURSE : 2 / 3 SMK / SZL

TIME : 2 1/2 Hours

DATE : April 2008

FINAL EXAM

INSTRUCTION :

1. *Choose Five (5) questions from Section A* — BL 1, PO 1
2. *Choose Four (4) questions from Section B* — BL 2, PO 1
3. *Choose One (1) questions from Section C* — BL 3&4, PO 2
4. *Answer all questions in section D* — BL 6, PO 3

Assessment Process - Developing

SECTION A [25 MARKS] : *Choose five (5) questions from this Section*

1. List five reasons why Malaysia need its own Shipbuilding Industry

[5 Marks]

2. Draw a typical Flow Chart of a shipbuilding process for steel ship

FINAL EXAM

[5 Marks]

3. State clearly the definition of Welding and list down welding types that are normally used in ship construction.

[5 Marks]

BLOOM'S TAXONOMY 1 - PO 1

Assessment Process - Developing

SECTION D [15 MARKS] : *Answer all questions in this section*

FINAL EXAM

1. You (and your team members) have been appointed as consultant to a government agency (MIGHT) to carry out a study on the latest information and status on computer application in Malaysia Shipbuilding Industry. In accepting the job, you need to prepare a short proposal indicating that you are capable to deliver the job successfully. The proposal should at least include the following;

BLOOM'S TAXONOMY 6 - PO 3

Assessment - Crafting FE

(SMK 3343)

QUESTION 3

3 (a) Using simple lay man language and in not more than one page, explain your understanding about Damaged Stability. *(Clue; what, why, how, ……).*

8 marks

(b) *Mavi Marmara II* (the same ship as in Question 1), having LBP 126m, Breadth 24m, Depth 11.0 m and displacement 15000 tonnes, KB and KG is 3.9 m and 7.35 m above keel respectively.
During one of her humanitarian voyage, while the ship is floating at draft 6.45m, one of the forward compartments at port side was damaged by the external forces. Based on the GA drawing the damaged compartment has the following particulars; Average waterplane size, length 11m x width 10m, centroid at 27m forward of amidships, 2.5m from Centre line on port side. The compartment can be approximately assumed having a cuboid shape with the centre of volume at 0.5 draft and permeability for volume and area 0.65. Determine whether the ship is still survive at this damaged codition.

12 marks

(c) If you are one of the activist on board the ship during the incident, what will be your advice to the ship's captain?.

5 marks

Which Bloom's Level ?

(SMK 3343)

3 (a) Using simple lay man language and in not more than one page, explain your understanding about Damaged Stability. *(Clue; what, why, how, ...)*.

8 marks

The Answering Process

1. Reading and understanding the question
2. Deciding the time required to answer this question based on mark
3. Recalling (from memory) important fact about damaged stability
4. Planning the answer based on what, why, how, who and when (mind mapping)
5. Writing the answer based on the mind map within the given time

Memorizing the facts and Explaining in writing – BL 2

Which Bloom's Level ?

(b) *Mavi Marmara II* (the same ship as in Question 1), having LBP 126m, Breadth 24m, Depth 11.0 m and displacement 15000 tonnes, KB and KG is 3.9 m and 7.35 m above keel respectively.

During one of her humanitarian voyage, while the ship is floating at draft 6.45m, one of the forward compartments at port side was damaged by the external forces. Based on the GA drawing the damaged compartment has the following particulars; Average waterplane size, length 11m x width 10m, centroid at 27m forward of amidships, 2.5m from Centre line on port side. The compartment can be approximately assumed having a cuboid shape with the centre of volume at 0.5 draft and permeability for volume and area 0.65. Determine whether the ship is still survive at this damaged codition.

12 marks

The Answering Process

1. Reading and understanding the question
2. Identifying the problem to be solved (Parameters to be calculated)
3. Highlighting all the information / data given – relate them to the problem posed

Which Bloom's Level ?

The Answering Process

4. Planning the calculation procedure, step by step
5. For each step, recalling the appropriate formula / theory / concept to be used
6. Performing the calculation, using the appropriate formula and making full used of the data given
7. Checking the accuracy of the calculation
8. Writing the final answer in appropriate format (one unique answer)
9. Writing the conclusion (Survive or not) based on the result

Memorizing , understanding, and applying the knowledge to solve the problem – BL 3

Which Bloom's Level ?

(c) If you are one of the activist on board the ship during the incident, what will be your advice to the ship's captain?.

5 marks

The Answering Process

1. Reading and understanding the question
2. Analyse the status (survival) of the ship based on result calculated in (b)
3. Think of all possible options (alternatives) to deal with the situation
4. Evaluate and select the most appropriate option to be adopted
5. Write the argument behind the selection. Provide some calculation / fact to assist the argument
6. Conclude the suggestion (advice) as required

NO UNIQUE SOLUTION

Analyse, Evaluate and Propose – BL 6

My Advice

The categorization of Bloom's Taxonomy Level shall not be decided merely by the "***action verb***" used in the question,

rather

It should be based on the "***process***" that the student is expected to go through in answering the question.

Assessment Process - Developing

SMK 4542 : SHIP DESIGN III : REPORT ASSESSMENT FORM

PROJECT NO :			**SEM :**			
PROJECT TITLE :			**SESSION :**			
GROUP NO :			**EXAMINER :**			
NO	**ASSESSMENT CRITERIA**	**PO**	**%**	**SCORE** *(1 - 10)*	**MARK**	**COMMENT**
A : REPORT ORGANIZATION			***10***			
1	All deliverable contents included	PO 6	3			
2	Professional report layout and organizaton	PO 6	4			
3	Contents are sequenced appropriately	PO 6	3			
B : TECHNICAL CONTENT			***75***			
1	Executive summary is clearly written	PO 6	5			
2	Introduction is relevant to report content	PO 6	7			
3	Aims / Objectives of report written clearly and precisely	PO 6	5			
4	Theoritical Background / Basic Concept Incuded	PO 2	5			
5	Calculation Procedure written clearly step by step	PO 2	10			
6	Example of calculation is given and relavent	PO 2	5		REPORT	
7	Calculation done completely and accurately	PO 2	8			
8	Result presented in professional format	PO 2	5			
9	Discussion of result is relevant and valid	PO 2	5			
10	Suggetion for improvemnt is discussed	PO 4	5			
11	Conclusion of report written clearly	PO 6	5			
12	Reference included and cited in the report	PO 10	5			
13	All relevant details are shown in Appendixes	PO 2	5			
C : LANGUAGE			***15***			
1	Smooth flow of thought and easy to understand	PO 6	5			
2	Proper use of terms and symbols	PO 6	5			
2	Proper used of words and grammer	PO 6	5			
TOTAL			**100**			

OVERALL COMMENT :	**FINAL MARK**	**SIGNATURE**

Assessment Process - Developing

EXAMPLE OF ASSESSMENT RUBRIC

NO	SCALE	0 - 3	4 - 5	6 - 7	8 - 10
	CRITERIA	FAIL	PASS	GOOD	EXCELLENT
1	***CONTENTS***	Not relevant, Outdated, not appropriate to the audience	Only part of the content relevant, some information were outdated, not fully addressing audience need	Most content were relevant, up to date but may not fully addressing audience specific need	All contents were relevant, up to date, specific to audience need
2	***SLIDES***	No or poorly prepared slides, text and pictures can not be understood, wrongly sequenced, no animation at all	Slides prepared half hazardly, some font, text and background colour were not appropriate, minimun diagram/pictures, some slides not properly sequence, no animation or additional features	Most font, text size, and background colour are appropriate, relevant diagrams /pictures included, approriately sequence, partly animated but no additional features	Appropriate Font, size and text and background colour, Relevant and clear diagram/picture, properly sequence, Animated appropriately, has some additional features
3	***SPELLING & GRAMMAR***	Frequently used poor or wrong sentence, term and caption, too many spelling and grammar mistakes	Some of the sentence, term and caption were not appropriate, several spelling and grammar mistakes	Sentence, term and caption mostly appropriate, minimum spelling and grammar mistakes	Use appropriate sentence, term and caption, correct spelling and perfect grammar
4	***REFFERENCES / SOURCES***	No or very little references and outdated and not properly cited and formatted	Not enough references, some are out dated, citation not consistent, not properly formatted	Adequate references, some may not up to date, correctly cited and formatted	More than adequate references, up to date, properly cited, correct format
5	***DELIVERY***	Cant hear properly, no eye contact at all, restless audience, late and poor time management	Loud but may not be very clear, some eye contact, low audience attention, time not properly managed	Loud and clear, some eye contact, retain part of audience attention, good time management.	Loud and clear presentation, good eye contact, able to fully retain audience attention, good time management.
6	***APPEARENCES***	Dressed poorly, ill mannered, little or no greeting, late	Dressed casually, fairly mannered, greeting and last minute appearance	Dressed appropriate to occasion with same level to audience, good mannered, greeting and punctual	Dressed appropriate to occasion and one level above audience, well mannered, adequate greeting, punctual.
7	***QUESTION & ANSWER***	Not answering the question or wrongly answer, don't understand the question at all, raised unnecessary argument, rude	Listen but not fully understood the question, answer partly correct, no rude argument	Listen to and understood the question, answer correctly but longer than necessary, polite	Listen tentatively, understood the question correctly, answer correctly and precisely, express argument politely

PRESENTATION

Assessment Process – Collecting Data

STEP 3 : Collecting Detail Data

Assessment Mark / Score data to be collected in detail and grouped according to PO in order to support the calculation of PO attainment

Assessment Process – Collecting Data

NAMA (Dengan Huruf Besar)	
NO. KP.	870717105837
KOD & NAMA MATA PELAJARAN	SHIP PRODUCTION TECHNOLOGY (SMK 2722)
KUMPULAN KULIAH/SEKSYEN	01
NAMA PENSYARAH	HJ YAHYA B SAMIAN
TARIKH PEPERIKSAAN	27/04/08
TEMPAT PEPERIKSAAN	MSI

ARAHAN KEPADA CALON

1. **Isikan** butir-butir di atas dengan terang dan mudah dibaca.
2. Tuliskan jawapan di **kedua-dua mukasurat buku** kertas jawapan.
3. Mulakan sesuatu jawapan bagi setiap soalan di muka yang baru.
4. Tuliskan **nombor kad pengenalan dan nombor soalan** di sebelah atas setiap **muka kertas jawapan.**
5. Semua jawapan termasuk kerja-kerja percubaan mesti dibuat di kertas jawapan.
6. **Bulatkan** nombor-nombor soalan yang dijawab di dalam ruangan yang disediakan di petak sebelah kanan.
7. **Mustahak:** Ikatkan semua buku kertas jawapan dan kertas tambahan mengikut susunan nombor soalan yang anda jawap.
8. Dilarang **membawa keluar** buku kertas jawapan dan kertas tambahan yang telah digunakan atau yang belum digunakan, dari Bilik Peperiksaan.

Soalan	UNTUK KEGUNAAN PEMERIKSA SAHAJA Markah
1	A-21
2	
3	B-20
4	
5	C-14
6	
7	D-2
8	
9	
10	
11	
12	
JUMLAH	57

No. Kad Pengenalan .....
No. Soalan .....
Muka surat .....
Jangan tulis apa apa di kedua-dua belah garisan

SECTION A

Question 1.

- Malaysia need own shipbuilding Industry because:

1) to ~~reduce~~ reduce the dependency to the ~~for~~ foreign ship
2) to ~~supp~~ provide local transportation.
3) To provide job opportunity
4) As military reason - strategy
5) Source of foreign exchange

Question 3

- Welding is one of type in joinning ~~method~~

- The type of welding normally used:

i) Shield Metal Arc (SMA)
ii) Gas tungstun Arc (GTA)
iii) Gas Metal Arc (GMA)
iv) Plasma Welding (PAW)
v) Submerged Arc Welding (SAW)

Assessment Process – Collecting Data

QUESTION 1 [25 MARKS]

a) State the general definition of Technology and gives example how this definition applied in shipbuilding Industry

Techno is mean software like managing, planning and scheduling. logy means hardware like tools and machines. In shipbuilding industry, we need proper managing, planning and other soft skills. Besides, tools like cutting tools and machines also important in shipbuilding industry.

[3 Marks]

b) List down four (4) of the Nature of Shipbuilding Industry.

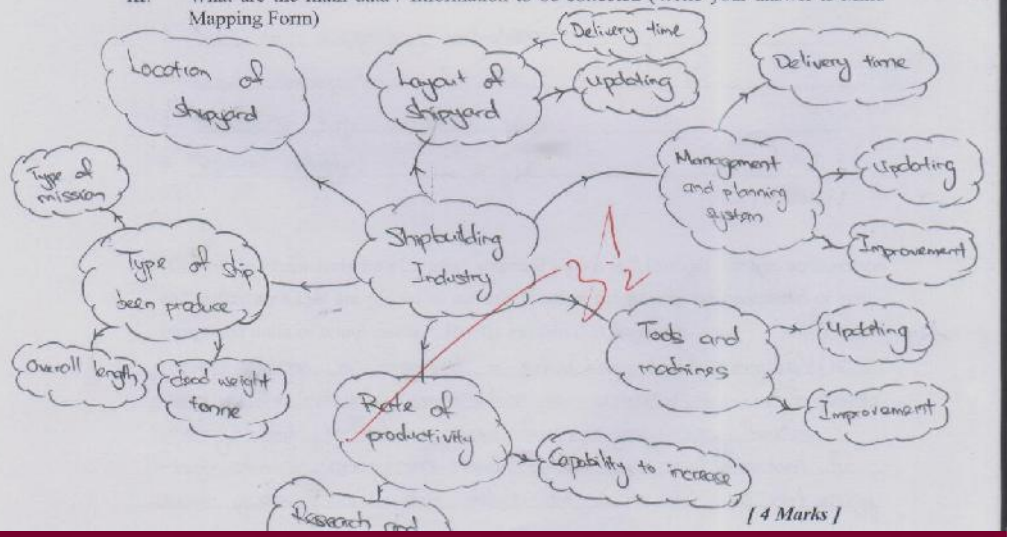
i. One off or tailor made
ii. Heavy industry
iii. Large investment but low profit
iv. Need a lot of supporting industries

[2 Marks]

c) One of the importance of shipbuilding industry is " *to reduce nation's dependency on foreign ships that is owned and operated by foreign nations. This is inline with the independence status of each country* ". Briefly explain this statement.

As an independent country, we should have our own shipbuilding industry to provide marine transportation and also sea defence. Besides, we can reduce the operation cost if we have our own ship or the ship is operated by our country. Other than that, marine transportation can operated continuously during war if we own or operate owned ship. Lastly, it can be one way to increase income of our country.

iii. What are the main data / Information to be collected (Write your answer is Mind Mapping Form)



[4 Marks]

Assessment Process – Collecting Data

UNIVERSITI TEKNOLOGI MALAYSIA
FACULTY OF MECHANICAL ENGINEERING
FINAL EXAMINATION
SEMESTER II, SESSION 2008/2009

COURSE CODE : SMK 2722/SZL 3702
COURSE NAME : SHIP PRODUCTION TECHNOLOGY
PROGRAMME : SMK/SZL
DURATION : 3 HOURS
DATE : APRIL/MAY, 2009

INSTRUCTION TO CANDIDATES:

1. CHOOSE 3 QUESTIONS FROM QUESTION 1 TO 4 AND ANSWER QUESTION 5.
2. ALL ANSWER MUST BE WRITTEN IN THE BLANK SPACE GIVEN IN THE EXAMINATION PAPER.

Circle the attempted questions	To be filled by the examiner
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

Assessment Process – Collecting Data

UNIVERSITI TEKNOLOGI MALAYSIA

FAKULTI KEJURUTERAAN MEKANIKAL

SHIP DESIGN 2

LINES PLAN REPORT

GROUP 5

GROUP MEMBERS

[redacted]

LECTURER : TN HAJI YAHYA BIN SAMIAN

FACULTY OF MECHANICAL ENGINEERING
UNIVERSITY TECHNOLOGY OF MALAYSIA

DEPARTMENT OF MARINE TECHNOLOGY

SHIP DESIGN II

SML 5532

PROJECT III: GENERAL ARRANGEMENT of YACHT DESIGN

GROUP 4

GROUP MEMBERS:

[redacted]

Tn. Hj. Yahya Bin Samian

Assessment Process – Collecting Data

SMK 4542 : SHIP DESIGN III : REPORT ASSESSMENT FORM

PROJECT NO : 3			SEM : I			
PROJECT TITLE : STABILITY CAL & ASSESSMENT			SESSION : 2008/09			
GROUP NO :			EXAMINER : Dr Yahya Samian.			
NO	**ASSESSMENT CRITERIA**	**PO**	**%**	**SCORE (1 - 10)**	**MARK**	**COMMENT**
A : REPORT ORGANIZATION			***10***			
1	All deliverable contents included	PO 6	3	9.0		
2	Professional report layout and organizaton	PO 6	4	8.5		
3	Contents are sequenced appropriately	PO 6	3	9.0		
B : TECHNICAL CONTENT			***75***			
1	Executive summary is clearly written	PO 6	5	0		No executive summary.
2	Introduction is relevant to report content	PO 6	7	8		
3	Aims / Objectives of report written clearly and precisely	PO 6	5	7.0		
4	Theoritical Background / Basic Concept Incuded	PO 2	5	6.0		No suggestion
5	Calculation Procedure written clearly step by step	PO 2	10	9.0		
6	Example of calculation is given and relavent	PO 2	5	8.0		
7	Calculation done completely and accurately	PO 2	8	9.0		
8	Result presented in professional format	PO 2	5	9.0		
9	Discussion of result is relevant and valid	PO 2	5	8.0		See Inside For Improvement of Report
10	Suggetion for improvemnt is discussed	PO 4	5	0.0		
11	Conclusion of report written clearly	PO 6	5	8.5		
12	Reference included and cited in the report	PO 10	5	7.0		
13	All relevant details are shown in Appendixes	PO 2	5	8.5		
C : LANGUAGE			***15***			
1	Smooth flow of thought and easy to understand	PO 6	5	8.5		
2	Proper use of terms and symbols	PO 6	5	8.5		
2	Proper used of words and grammer	PO 6	5	8.5		
TOTAL			**100**			
OVERALL COMMENT :				**FINAL MARK**		**SIGNATURE**
Good Report				73.9/100		

Assessment Process – Collecting Data

SMK 4722 : CAD/CAM - CLASS PRESENTATION ASSESSMENT

					GROUP	1		
NO	**SCALE**	0 - 3	4 - 5	6 - 7	8 - 10	**SCORE**	**WEIGHT**	**MARK**
	CRITERIA	FAIL	PASS	GOOD	EXCELLENT			
1	***CONTENTS***	Not relevant, Outdated, not appropriate to the audience	Only part of the content relevant, some information were outdated, not fully addressing audience need	Most content were relevant, up to date but may not fully addressing audience specific need	All contents were relevant, up to date, specific to audience need	**6**	30	180
2	***SLIDES***	No or poorly prepared slides, text and pictures can not be understood, wrongly sequenced, no animation at all	Slides prepared half hazardly, some font, text and background colour were not appropriate, minimun diagram/pictures, some slides not properly sequence, no animation or additional features	Most font, text size, and background colour are appropriate, relevant diagrams /pictures included, approriately sequence, partly animated but no additional features	Appropriate Font, size and text and background colour, Relevant and clear diagram/picture, properly sequence, Animated appropriately, has some additional features	**6**	20	120
3	***SPELLING & GRAMMAR***	Frequently used poor or wrong sentence, term and caption, too many spelling and grammar mistakes	Some of the sentence, term and caption were not appropriate, several spelling and grammar mistakes	Sentence, term and caption mostly appropriate, minimum spelling and grammar mistakes	Use appropriate sentence, term and caption, correct spelling and perfect grammar	**8**	10	80
4	***REFFERENCES / SOURCES***	No or very little references and outdated and not properly cited and formatted	Not enough references, some are out dated, cited but not consistent, not properly formatted	Adequate references, some may not up to date, correctly cited and formatted	More than adequate references, up to date, properly cited, correct format	**0**	10	0
5	***DELIVERY***	Cant hear properly, no eye contact at all, restless audience, late and poor time management	Loud but may not be very clear, some eye contact, low audience attention, time not properly managed	Loud and clear, some eye contact, retain part of audience attention, good time management.	Loud and clear presentation, good eye contact, able to fully retain audience attention, good time management.	**6.5**	15	97.5
6	***APPEARENCES***	Dressed poorly, ill mannered, little or no greeting, late	Dressed casually, fairly mannered, greeting and last minute appearance	Dressed appropriate to occasion with same level to audience, good mannered, greeting and punctual	Dressed appropriate to occasion and one level above audience, well mannered, adequate greeting, punctual.	**7.5**	5	37.5
7	***QUESTION & ANSWER***	Not answering the question or wrongly answer, don't understand the question at all, raised unnecessary argument, rude	Listen but not fully understood the question, answer partly correct, no rude argument	Listen to and understood the question, answer correctly but longer than necessary, polite	Listen tentatively, understood the question correctly, answer correctly and precisely, express argument politely	**6**	10	60
							57.5	575

Assessment Process – Collecting Data

SMK 3343 - NAVAL ARCH II - SEM I 2010-11 -MARKS FOR DAMAGED STABILITY & LAUNCHING CAL (YAHYA SAMIAN)

	Assessment	Class Exercise	Class Exercise	Class Exercise	Class Exercise (Reflection)	Group Assignment (7)			Quiz (Bonjean)	Peer Marking
	Date	27-Sep	30-Sep	14-Oct	18-Oct	Week 12			25-Oct	25-Oct
	PO	PO 10 (1)	PO 2	PO 2	PO 1	PO 2	PO 8	PO 2	PO 2	PO 11
	CLO	3	3	3	?	3	3	3	3	5
	FULL MARK	4	10	6	10	18	5	18	13	1
	PERCENTAGES	5	5	5	4	0	5	15	10	5
NO	NAMA	SCORE								
1		2.5	7	0	6	16.6	4.0	5.4	9	1
2		2	0	3	5	8.5	3.7	3.1	7	0.7
3		1	5	2.5	4	15.8	4.6	9.1	5	1
4		1	0	4	7	0.0	1.1	0.0	8	1
5		1.5	7.5	3.75	8	13.5	4.6	10.0	6	1
6		3	4	4	8	16.6	4.6	15.1	0	0
7		3	6.5	3.75	7	9.5	2.8	9.6	7	1
8		2	6	6.5	9	9.0	2.1	5.6	10	1
9		2.5	0	5	7	0.0	0.0	0.0	8	1
10		1.5	7	4	6	4.0	1.8	2.0	7	1
11		4	7.5	8	9	16.0	4.2	18.5	11	1
12		2.5	4.5	8	8	16.6	4.3	13.0	8	1
13		1.5	7.5	4.25	5	16.4	4.0	11.5	5	1
14		0	0	4	1	15.7	4.6	11.6	0	0
15		2	5.5	6	7	10.0	3.6	6.6	10	1

Assessment Process – Collecting Data

SMK 3343 - NA II - SEM I 2010-11 - FINAL EXAM MARK (Q3)

	Assessment	FINAL EXAM (Q3)			
	Date	11/28/2010			
	PO	PO 1	PO 2	PO 4	
	CLO	3	3	3	
	FULL MARK	8	12	5	25
	PERCENTAGES	3.2	4.8	2	10
NO	NAMA	3(a)	3(b)	3(c)	Total (25)
1		0	1.5	0	**1.5**
2		4	2	0	**6**
3		3	4.5	0	**7.5**
4		3	6.5	1	**10.5**
5		2	6.5	2	**10.5**
6		2	8.5	0.5	**11**
7		1.5	9.75	1.5	**12.75**
8		2	5	1	**8**
9		2.5	2	0	**4.5**
10		2.5	3.5	0	**6**
11		7	11.5	4	**22.5**
12		3	7	0	**10**
13		5	6	1	**12**
14		4	6.5	0	**10.5**
15		6	5.5	2.5	**14**

Assessment Process – Calculating

STEP 4 : Calculating the Result of Achievement

In previous academic system, only the total mark and grade matters. Under OBE, the PO achievement of each individual students need to be calculated.

Hence, detail calculation has to be carried out in order to determine on how much the student achieved his/her PO. It is a tedious work

Assessment Process – Calculating

SMK 2722 : SHIP PRODUCTION TECHNOLOGY - SEM II 2007-08

NO	NAME	FINAL EXAM				TOTAL 100%	TOTAL 40%
		Sec A	Sec B	Sec C	Sec D		
PO Assessed		PO 1	PO 1	PO 2	PO 3		
FULL MARK		25	40	20	15	100	40
PERCENTAGE TO TOTAL MARK		10	16	8	6	40	
1	[redacted]	21	14	12	1	48	19.2
2		24	30	17	5	76	30.4
3		17	18	5	0	40	16
4		18	15	13	8	54	21.6
5		10	15	13	5	43	17.2
6		14	17	14	8	53	21.2
7		20	21	9	6	56	22.4
8		15	17	7	6	45	18
9		15	11	7	8	41	16.4
10		13	24	11.5	8	56.5	22.6
11		9	15	12	4	40	16
12		15	20	13	7	55	22
13		16	23	9	6	54	21.6
14		23	22	12	10	67	26.8
15		22	20	4	5	51	20.4
16		19	26.5	16	9	70.5	28.2
17		11	18	12	6	47	18.8
18		7	15	13	6	41	16.4
19		21	20	14	2	57	22.8
20		13	22	16	0	51	20.4
21		23	18	11	7	59	23.6
22		19	22	15.5	2	58.5	23.4
23		14	32	16	9	71	28.4
24		9	19	11	7	46	18.4
25		23	14	16	8	61	24.4
26		21	17	13	6	57	22.8
27		20	25	11	10	66	26.4
28		16	19	13	4	52	20.8
29		22	8	14	3	47	18.8

Assessment Process – Calculating

(Preparing Assessment Data)

Assessment Item	Quiz 1		Test 1 - Question 1		Test 1 - Question 2		Assignment Report 1 - Content			Assignment Report 1 - Layout & Organization	Assignment Report 1 - Writing Skills	Test 2 (a)		Test 2 (b)	Final Exam - Section A - Q1-Q6		Final Exam - Section B - Q1	Final Exam - Section B - Q2	Final Exam - Section C		
CLO Assessed	1		1		2		3			3	3	1	2	2	1	2	1	2	3		
PO Assessed	1	2	1	2	2	3	1	2	3	4	4	2	3	3	1		2	2	3		
FULL MARK FOR EACH ITEM	10		5		15		50			20	30	25		25	50		20	20	10		
% OF FULL MARK FOR CLO	100		100		100		100			100	100	50	50	100	40	60	100	100	100		
% OF FULL MARK FOR PO	80	20	50	50	40	60	10	40	50	100	100	20	80	100	100		100	100	100		
PERCENTAGES FOR EACH ITEM	5		5		15		10			4	6	7.5		7.5	20		8	8	4	100	
NO	**NAME**	**SCORE**																		**TOTAL**	***GRADE***
1	STUDENT 1	10		5		15		50			20	30	25		25	50		20	20	10	**100**	***A+***
2	STUDENT 2	8		4		12		40			16	24	20		20	40		16	16	8	**80**	***A***
3	STUDENT 3	5		2.5		7.5		25			10	15	12.5		12.5	25		10	10	5	**50**	***C***
4	STUDENT 4	2		1		3		10			4	6	5		5	10		4	4	2	**20**	***E***
5	STUDENT 5	1		0.5		1.5		5			2	3	2.5		2.5	5		2	2	1	**10**	***E***
6	STUDENT 6	10		2		12		34			12	23	21		13	24		12	15	10	**67.4**	***B***
7	STUDENT 7	8		5		8		50			8	20	12		25	34		20	20	10	**77.3**	***A-***

Assessment Process – Calculating

(Preparing Assessment Data – Simpler Version)

ASSESSMENT ITEMS		ASSESSMENT 1	ASSESSMENT 2	ASSESSMENT 3	ASSESSMENT 4	ASSESSMENT 5	ASSESSMENT 6	
CLO		CLO 1	CLO 2	CLO 5	CLO 4	CLO 3	CLO 2	
PO		PO 1	PO 2	PO 11	PO 7	PO 4	PO 2	
FULL MARK		10	100	50	100	25	40	
PERCENTAGES (%)		***5***	***10***	***15***	***20***	***25***	***25***	***100***
NO	**STUDENT NAME**	**SCORE**						**TOTAL**
1	STUDENT 1	10	100	50	100	25	40	100
2	STUDENT 2	8	80	40	80	20	32	80
3	STUDENT 3	5	50	25	50	12.5	20	50
4	STUDENT 4	3	30	15	30	7.5	12	30
5	STUDENT 5	2	20	10	20	5	8	20
6	STUDENT 6	1	10	5	10	2.5	4	10
7	STUDENT 7	9	90	45	90	22.5	36	90
8	STUDENT 8	7	70	35	70	17.5	28	70
9	STUDENT 9	6	60	30	60	15	24	60
10	STUDENT 10	4	40	20	40	10	16	40

Assessment Process – Analysing

STEP 5 : Analysing the Result

The results / findings are numbers. Analysing is to give meaning (interpretation) to the numbers .

Assessment Process – Analysing

SMK 2722 - SHIP PRODUCTION TECHNOLOGY - SEM II 2007-08

OVERALL PO ANALYSIS

	Acquire Knowledge	Apply Knowledge	Design & Evaluate	Critical Thinking & Explore Marine Technology Knowledge	Ability to Lead and Manage	Technical Report Writing	Communication	Team Working	Entrepreneurship	Life Long Learning	Professional Ethics
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11
PO - MAPPING	a	a	c	c	2		1	2		1	
PO - MARK DISTRIBUTION	34	34	6	5.5	0	2	5	2	0	5	6.5
PO - SUDENT ACHIEVEMENT	58.5	76.3	38.5	68.5	0.0	46.4	73.0	68.4	0.0	62.2	90.7

PO IMPELMENTATION

Comment 1 : All POs that need to addressed and assessed had been addressed accordingly with appropriate degree of emphasis (%).

Comment 2 : In addition, Technical Report Writing (PO 6) Professional Ethics (PO 11) assessment were also included

Assessment Process – Analysing

SMK 2722 - SHIP PRODUCTION TECHNOLOGY - SEM II 2007-08

OVERALL PO ANALYSIS

	Acquire Knowledge	Apply Knowledge	Design & Evaluate	Critical Thinking & Explore Marine Technology Knowledge	Ability to Lead and Manage	Technical Report Writing	Communication	Team Working	Entrepreneurship	Life Long Learning	Professional Ethics
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11
PO - MAPPING	a	a	c	c	2		1	2		1	
PO - MARK DISTRIBUTION	34	34	6	5.5	0	2	5	2	0	5	6.5
PO - SUDENT ACHIEVEMENT	58.5	76.3	38.5	68.5	0.0	46.4	73.0	68.4	0.0	62.2	90.7

STUDENTS ACHIEVEMENT

Comment 1 : On Technical Knowledge, students are quite good at applying (performing calculation - PO 2) but low at Understanding (ability to explain - PO 1). Students ability to create or propose something new from knowledge learned is very low.

Comment 2 : On Generic Skill - Relatively good achievement except for Technical Report Writing.

Assessment Process – Analysing

Grade Distribution	A+	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E	HS	HL	HG	TD
% (Nos)	0.0	12.3	15.1	21.9	28.8	9.6	6.9	1.4	2.7	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0

Overall Mean :

Class Average : 68.7%

Describe to what extend the course outcomes are achieved by the students(Please state the performance criteria, explain the results obtain and make comparison)

CLO	KPI	A	PASS	FAIL	COMMENT
CLO 1	Excellent : 100 % Pass with minimum 20 % A, Good : More than 80 % Pass, Bad : More than 20 % fail	1.4	97.3	2.7	Good
CLO 2		0	96	4	Good
CLO 3		0	94.5	5.5	Good
CLO 4		1.4	96	4	Good
CLO 5		Nil	Nil	Nil	Not Assessed
CLO 6		Nil	Nil	Nil	Not Assessed
CLO 7		84	94.5	5.5	Good
CLO 8		15	96	4	Good
CLO 9		40	97	3	Good

*See **Annex A** for detai calculation*

CLO 5 & 6 was not assessed due to time constraint - CLO to be revised in Future

Assessment Process – Analysing (CLO)

Able to propose and evaluate design work related to ship structures, material take off and stability	76.7%		Achieved KPI
Able to suggest improvement to the design work that has been carried out	34.2%		Poor Performance. Student need to be exposed more on critically thinking in making suggestion to improve their design works
Able to distribute the design task, manage and monitor the design project effectively	70.3%		Achieved KPI
Able to work in team effectively	90.6%		Excellent Team working performance
Able to indentify the amout of manhours and design fee related to the design project	75.2%		Achieved KPI
Able to seek and use effectively additional knowledge or information from other sources	61.7%		Below KPI - Still lack of effort in seeking additional information from other source other than the lecturer's note

Assessment Process – Analysing (CLO)

Please indicate how well you believe these course outcomes were effective on the scale of 5 = accomplished well to 1= accomplished poorly and 0 = not accomplished.		
1	The course outcomes are clearly understood by the students	5
2	The teaching methods in this course help the students to achieve the course outcomes.	5
3	The learning resources in this course help them to achieve the course outcomes.	5
4	The assessment tasks in this course evaluate the student.s achievement of the course outcomes	5
5	Feedback by the students on my work in the students helps me to improve my teaching methods	3
6	The workload in this course is appropriate to the achievement of the course outcomes	4
7	Overall, I am satisfied with the running of the course.	4

Students Feedback Please describe students. feedbacks from either the e.PPP or other means.	Nothing much from students comment in ePPP. Some samples 1. Awesome lecturer! 2. nice try.. try do the best 3. Projek yang diberikan oleh pensyarah yang sedikit sebanyak memberi pendedahan kepada industri sebenar amat menarik. 4. terima kasih kerana sudi mengajar saya.

Assessment Process – Analysing (PO)

PO2	74.106%	Achieved KPI with average class score above 65 %. Except one student, the rest of the class has achieved the expected level of their ability to perform the design calculation and assessment thereof.
PO3	76.685%	Achieved KPI with average class score above 65 %. All students had achieved the expected level of design work requirements with several achieved excellent level.
PO4	33.754%	Poor performance. Students (final year) has still lack ability to critically think on how to suggest or propose improvement to the design works done. Unable to think outside the subject matter.
PO5	70.301%	Achieved KPI, indicating students are able to plan, managed, monitored and delivered the design work within the time frame.
PO6	80.711%	Good performance in technical report writing.
PO7	0%	
PO8	90.612%	Excellent performance in Team working during the design project implementation
PO9	75.155%	Good performance on entrepreneurship based on the ability of the student to determine the cost of the design project based on manhours estimation.
PO10	61.654%	Below KPI on life long learning. In general students still rely mainly on the lecturer's note.

Assessment Process – Improvements

STEP 6 : Propose Improvements

The Analysis made on the results / findings, provides the necessary information on what and how actions need to be taken in order to improve students achievement.

Assessment Process – Improvements

SMK 2722 - SHIP PRODUCTION TECHNOLOGY - SEM II 2007-08

OVERALL PO ANALYSIS

	Acquire Knowledge	Apply Knowledge	Design & Evaluate	Critical Thinking & Explore Marine Technology Knowledge	Ability to Lead and Manage	Technical Report Writing	Communication	Team Working	Entrepreneurship	Life Long Learning	Professional Ethics
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11
PO - MAPPING	a	a	c	c	2		1	2		1	
PO - MARK DISTRIBUTION	34	34	6	5.5	0	2	5	2	0	5	6.5
PO - SUDENT ACHIEVEMENT	58.5	76.3	38.5	68.5	0.0	46.4	73.0	68.4	0.0	62.2	90.7

SUGGESTION FOR IMPROVEMENT

1 : Include PO 6 and PO 11 in the PO Mapping

2 : Give more emphasis (more exercise) on understanding and explaining ability (PO 1)

3 : Utilize alternative Teaching Method (PBL) to improve PO 3.

4 : More (exercises and examples) on good Technical Report Writing (PO 6)

Assessment Process – Improvement

(Reflection)

Describe to what extend the course has contributed towards the achievement of the programme outcomes (Please state the performance criteria or achievement level and make appropriate remarks)	In general students are able to perform and deliver the design work according to the standard requirements. They are able to plan and manage the project well and delivered within time stipulated. Good in report writing and excellent in Team working. However they are still very poor in critically thinking and still lacking in their ability to seek additional knowledge / information from other sources other than the lecture's note - something that are quite worrying for final year students
Reflections Please include the analysis of data, areas of improvement and action plan to be taken at course or programme level.	The students, in general are quite good in performing and delivering the design job if they are coached properly. They can work in team effectively if you give the opportunity. The only worrying me is their lack of ability in Critical thinking and life long learning. These two skills are essential to make them a better employee / person in future. I need to create ways of enhancing these abilities in future.

Assessment Process – Improvements

Table 3: PO attainment for all courses taken in **Semester 2, Session 08/09** for the SMK programme

			Technical				Generic Skill						
No	Course	Course Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
1			87.0	86.0									
2			83.9	73.2									
3			66.7	68.7				74.1					
4			74.7	78.7									
5			54.7	60.0	100.0	22.9							
6			71.0	65.0	68.0			71.0		77.0			
7			60.0	66.5	46.8	46.7	79.7	69.2	53.7	51.2		39.6	81.3
8			74.9	75.9	68.0	61.3	87.3	66.6	75.3	76.0			87.3
9			66.6	78.2	27.8	27.7							
10			66.0	73.0	10.0		95.0		95.0				
11			76.0	59.8	83.8								84.0
12			53.8	50.2	43.2	50.7							
13			71.2	59.4	49.4								90.0
14			56.7	65.3	72.9	63.9							
15				72.7	70.8	71.9	74.2	72.9	69.3	71.8		73.7	
16			65.9	64.3	64.6	68.5	69.4	67.6	58.1			60.7	67.6
17											71.5		
18			79.0	40.1									
19			63.5	63.5	65.2	67.8	68.8	64.9	60.4			64.3	69.3
20				72.0	72.0	72.0		72.0					72.0
		Average (%)	68.9	67.0	60.2	55.3	79.1	69.8	68.6	69.0	71.5	59.6	78.8

Assessment Process – Improvements

Table 5 : CQI Actions

NO	RESULTS / FINDING	CQI ACTION
1	POs Achieved or Above KPI	To be maintained, enhanced and continuously monitored. More involvemnt from other courses.
2	PO 3 and PO 4 below KPI	Provide more tarining / examples / questions that relevant to PO 3 & 4 assessment. More exposure in early year of study. More courses addressed and assessed these POs
3	POs below KPI at course level	Identify courses that frequently achieved PO below KPI and determine the main factors. Course owner to undergo training on various T&L techniques to improve delivery and assessment of low Pos. Encourage team teaching and mentor-mentee concept to improve POs achievement
4	Higher no of samples for analysis	Involvement from many more courses including service courses. More systematic procedure in retrieving, documenting and storing the PO data. Development of on line web based system to facilitate the PO analysis process.

Assessment Process – Documentation

STEP 7 : Documentation

All evidences relating to assessment process, methods, tools, templates, rubrics, results, analysis and suggestion for improvements need to be documented systematically for accreditation purposes.

Assessment details at course level to be kept in COURSE FILE

At programme level, overall findings and CQI actions to be documented in a PO REPORT.

Assessment Process – Documentation

Example of Course File Contents

COURSE PORTFOLIO - PROPOSED

Purpose : To provide a complete, systematic, consistent and integrated document related to the contents, teaching and learning methods and assessment methods of a course offered in a particular programme.
Justification : To be used as part of accreditation documents. Continuous improvement process. Reference / guidelines for new lecturer.
Preparation : Lecturer who teach the course (If more than one lecturers involved, a coordinator need to be appointed)
Storage : All information should be kept in one file and the fail should be kept in the Head of Department office.
Monitoring : Head of Department / Head of Panel
Confidentiality : Materials compiled in the portfolio must be treated as confidential documents to the outside parties.

NO	CONTENTS	DETAILS	PURPOSE / JUSTIFICATION
1	COVER PAGE	Showing course name and code, Programme title, Department / Field, Faculty / University and Year	Indicating a complete and integrated information of a course
2	TABLE OF CONTENTS	Table of contents	Provide easy way for checking. Every content should be separated by a separator page.
3	CURRICULUM	Table of Curriculum that is used for the programme. The course should be highlighted.	Showing the overall courses offered in the curriculum
4	SYLLABUS (L1)	Syllabus (L1) used in the program curriculum.	Detail and clear information related to course learning outcomes, course contents, and assessment methods.
5	CLO – PLO MAPPING	Mapping of CLO to PLO	Showing how course learning outcomes are connected / contributing to Programme Learning Outcomes.

Assessment Process – Documentation

6	LECTURER / INSTRUCTOR	Name(s) and Brief CV of the lecturer (s) teaching the course (May be more than one). CV focus on Academic Qualification, Teaching Experience and T&L research / Contribution. Latest Photo may be included.	Provide evidence on Lecturer's qualification, experience and contribution in Teaching.
7	TEACHING STRATEGY (L2)	Weekly / by Topic / One Session Teaching Strategy	Provide detail information regarding T & L activities and Implementation of Generic Skills.
8	TEACHING MODULE / NOTES / TEXT BOOKS / ADDITIONAL REFERENCES	Lecture Notes, Module, Text Book / Reference Books (For Books, only the Title Page are required)	Provide evidence on the appropriateness of the note and books to the syllabus of the course.
9	COURSE WORKS	Questions and answers / marking Scheme for Tests, Assignments, Projects, Quizzes, Tutorials etc.	Showing the content of course works and method of assessment is in line with the CLO. Also indicating that the assessment is done systematically and fairly.
10	FINAL EXAM	Final Examination Questions, Answer & Marking Scheme, and selected students answer scripts.	Provide evidence on the quality of examination questions that is in line with CLO and the assessment was done fairly and consistently.
11	ASSESSMENT FORM FOR FINAL EXAM AND COURSE WORKS	Assessment / Checking Form on the examination questions and course works– bloom's level and its percentages. Used by Head of Panel and moderator.	Evidence showing that all examination questions and course had undergone checking and assessment process as to ensure that all assessment for each course is inline with the course CLO.
12	ANALYSIS AND FEED BACK SURVEY	Exit survey, feedback, self assessment and reflection on the T & L process of the course.	Showing that a system of feedback is being implemented.
13	CONTINUOUS IMPROVEMENT	Effort and Suggestion for continuous improvement for the course.	Showing that a continuous improvement system is in place.
14	ADDITIONAL INFORMATION	Any information (documentation, paper etc) related to T & L of the course.	Indicating addition effort, references that help the improvement of T & L process.

Assessment Process – Documentation

Report

on

Sample of PO Report

Student
Programme Learning Outcomes (PO) Attainment

Bachelor of Engineering
(Mechanical – Marine Technology) Programme
- SMK -

Faculty of Mechanical Engineering
Universiti Teknologi Malaysia
Skudai

June 2009

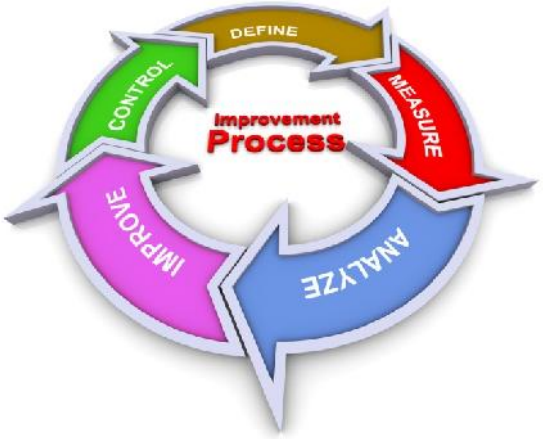
UTM
UNIVERSITI TEKNOLOGI MALAYSIA

End of Part 2

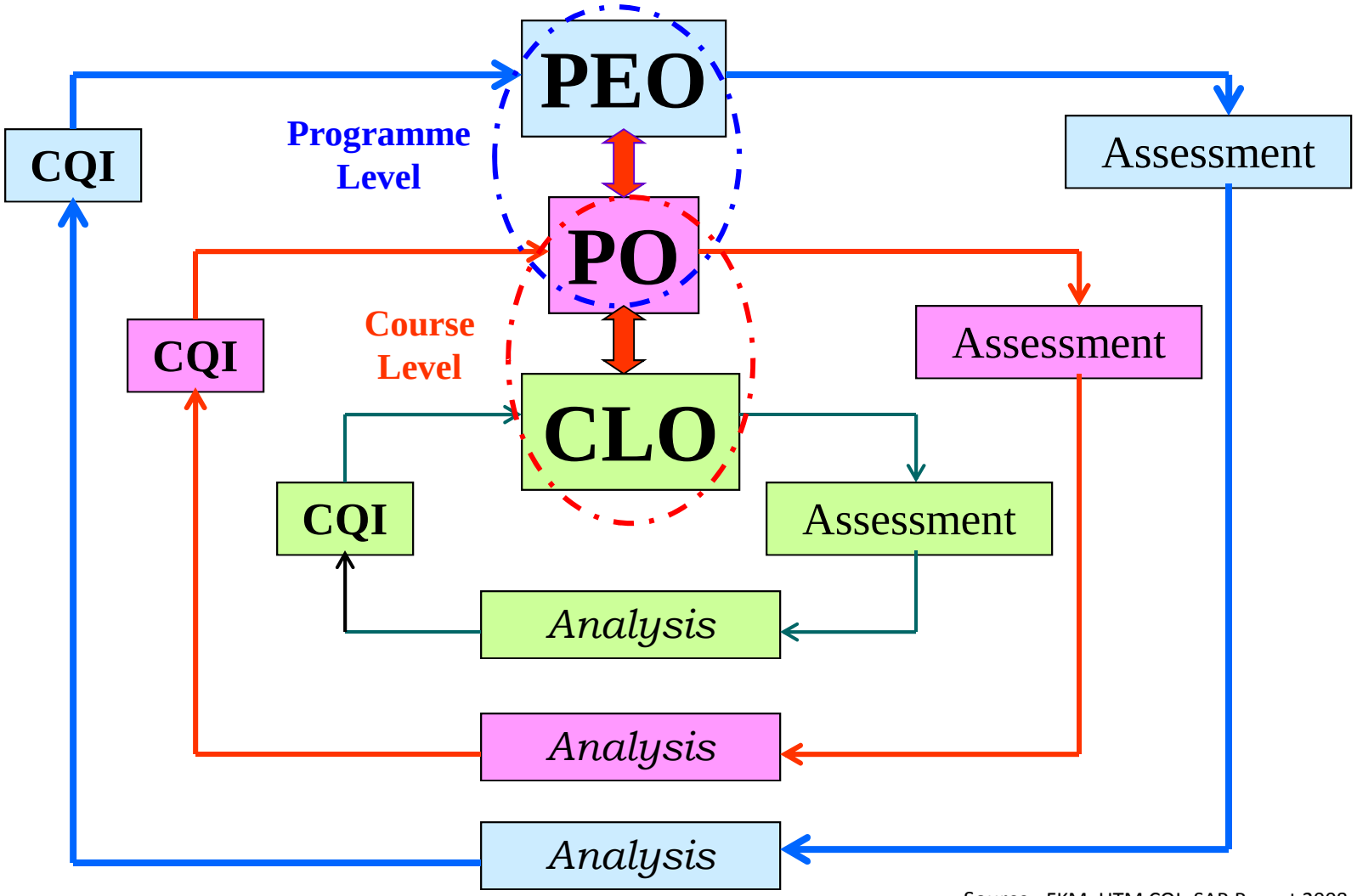
UTM
UNIVERSITI TEKNOLOGI MALAYSIA

Part 3

Cont. Quality Improvement

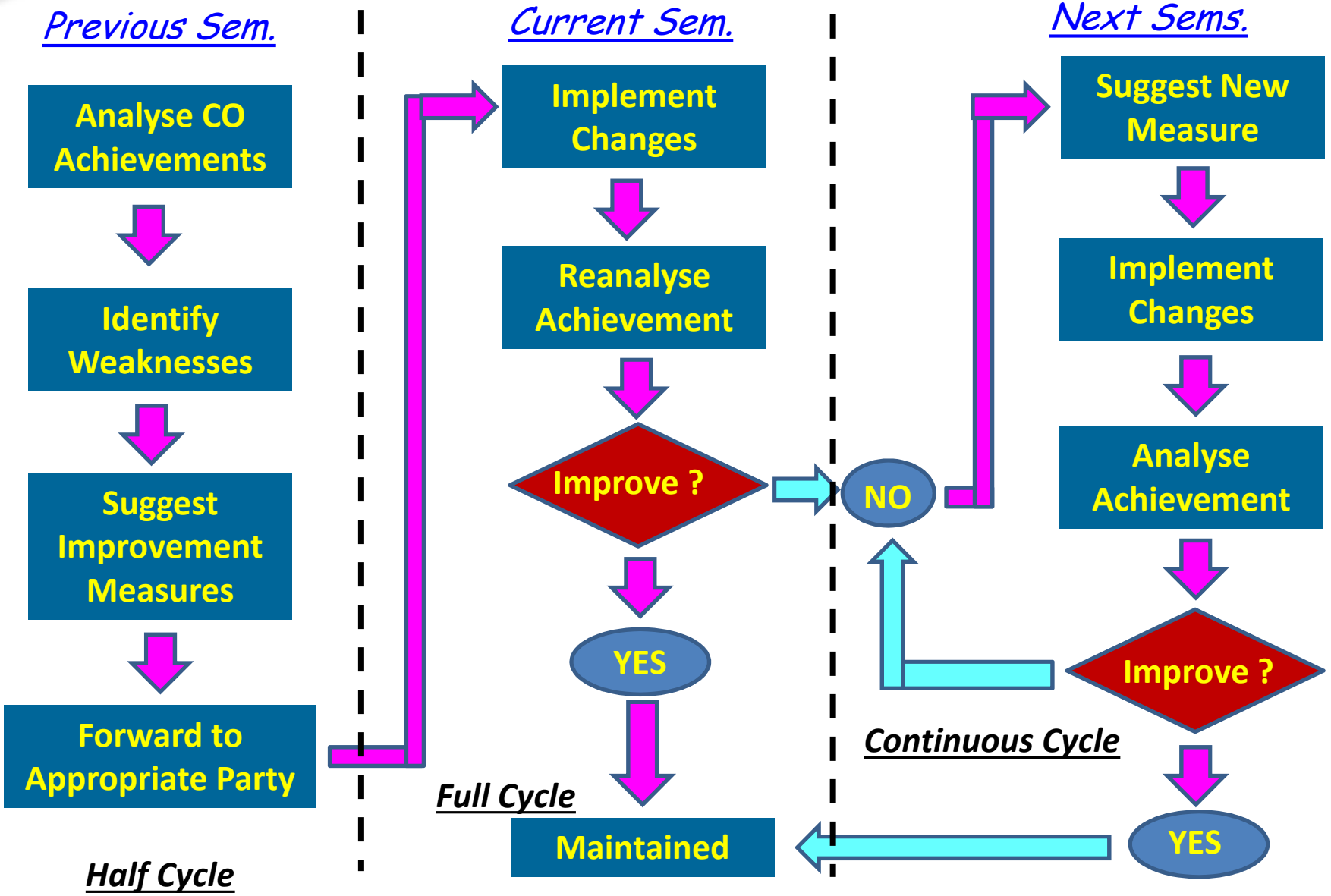


OBE - The CQI (Model)



Source : FKM, UTM CQI -SAR Report 2008

CQI CYCLES


Previous Sem.
Current Sem.
Next Sems.
Analyse CO Achievements
Identify Weaknesses
Suggest Improvement Measures
Forward to Appropriate Party
Implement Changes
Reanalyse Achievement
Improve ?
YES
NO
Suggest New Measure
Implement Changes
Analyse Achievement
Improve ?
YES
Maintained
Half Cycle
Full Cycle
Continuous Cycle

CQI REPORTING TEMPLATE

PREVIOUS SEMESTER / SESSION

SEM / SESSION :				
COURSE CODE :	COURSE NAME:		COURSE OWNER:	
ISSUE / COMMENTS ON STUDENT ACHIEVEMENT	SUGGESTION FOR CQI	SUGGESTED BY	ACTION TO BE TAKEN BY	ENDORSED BY
		NAME: (Course Owner)	NAME: (Course Owner)	NAME: (HoD / TDA)
		SIGNATURE	SIGNATURE	SIGNATURE
		DATE	DATE	DATE

CURRENT SEMESTER / SESSION

SEM / SESSION :					
COURSE CODE :	COURSE NAME :		COURSE OWNER :		
CQI ACTION TAKEN	STUDENT ACHIEVEMENT / IMPROVEMENT RESULT	SUGGESTION FOR FURTHER CQI MEASURE	SUGGESTED BY	ACTION TO BE TAKEN BY	ENDORSED BY
			NAME: (Course Owner)	NAME: (Course Owner)	NAME: (HoD / TDA)
			SIGNATURE	SIGNATURE	SIGNATURE
			DATE	DATE	DATE

CQI REPORTING TEMPLATE

CURRENT SEMESTER / SESSION

SEM / SESSION :					
COURSE CODE :	**COURSE NAME :**		**COURSE OWNER :**		
CQI ACTION TAKEN	**STUDENT ACHIEVEMENT / IMPROVEMENT RESULT**	**SUGGESTION FOR FURTHER CQI MEASURE**	**SUGGESTED BY**	**ACTION TO BE TAKEN BY**	**ENDORSED BY**
			NAME: (Course Owner)	**NAME:** (Course Owner)	**NAME:** (HoD / TDA)
			SIGNATURE	**SIGNATURE**	**SIGNATURE**
			DATE	**DATE**	**DATE**

NEXT SEMESTER / SESSION

SEM / SESSION :					
COURSE CODE :	**COURSE NAME :**		**COURSE OWNER :**		
CQI ACTION TAKEN	**STUDENT ACHIEVEMENT / IMPROVEMENT RESULT**	**SUGGESTION FOR FURTHER CQI MEASURE**	**SUGGESTED BY**	**ACTION TO BE TAKEN BY**	**ENDORSED BY**
			NAME: (Course Owner)	**NAME:** (Course Owner)	**NAME:** (HoD / TDA)
			SIGNATURE	**SIGNATURE**	**SIGNATURE**
			DATE	**DATE**	**DATE**

CQI REPORTING SAMPLE

PREVIOUS SEMESTER / SESSION (Half Cycle)

SEM / SESSION : II 2011-2012				
COURSE CODE : SMK 4542	**COURSE NAME: SHIP DESIGN III**		**COURSE OWNER: YAHYA SAMIAN**	
ISSUE / COMMENTS / REFLECTION ON STUDENT ACHIEVEMENT	**SUGGESTION FOR CQI**	**SUGGESTED BY**	**ACTION TO BE TAKEN BY**	**ENDORSED BY**
The students, in general are quite good in performing and delivering the design job if they are coached properly. They can work in team effectively if you give the opportunity. The only worrying me is their *lack of ability in Critical thinking (PO 4) and life long learning (PO 10)* . These two skills are essential to make them a better employee / person in future. I need to create ways of enhancing these abilities in future.	(1) For *Critical Thinking* : Need to use **PBL approach** in class and coach them to think critically giving small critical thinking exercises in class. (2) For *Life Long Learning* : Coach the students to refer to **various literature resources** to solve their design tasks and acknowledge the sources appropriately	**NAME:** YAHYA SAMIAN **SIGNATURE** **DATE**	**NAME:** YAHYA SAMIAN **SIGNATURE** **DATE**	**NAME:** KJAAS **SIGNATURE** **DATE**

CQI REPORTING SAMPLE

CURRENT SEMESTER / SESSION (Full Cycle)

SEM / SESSION :					
COURSE CODE :	**COURSE NAME :**		**COURSE OWNER :**		
CQI ACTION TAKEN	**STUDENT ACHIEVEMENT / IMPROVEMENT RESULT**	**SUGGESTION FOR FURTHER CQI MEASURE**	**SUGGESTED BY**	**ACTION TO BE TAKEN BY**	**ENDORSED BY**
(1) Using PBL approach in Design Project to Improve Critical Thinking - Only for the third Design Task	Some improvement on critical thinking (based on selection of design methods and analysis discussed in report)	Need more exposure on critical thinking project / assignments. Need variety of Assessment method	**NAME:** Yahya Samian	**NAME:** Yahya Samian	**NAME:** KJAAS
(2) Using various literature resources to solve design problems (Not merely from class note) to enhance Life Long Learning Ability	Great improvement, Student were able to outsource beyond my expectation on materials that directly assist their design task.	To be maintained in future	**SIGNATURE**	**SIGNATURE**	**SIGNATURE**
			DATE	**DATE**	**DATE**

CQI REPORTING SAMPLE

NEXT SEMESTER / SESSION (Continuous Cycle)

SEM / SESSION :					
COURSE CODE :	**COURSE NAME :**		**COURSE OWNER :**		
CQI ACTION TAKEN	**STUDENT ACHIEVEMENT / IMPROVEMENT RESULT**	**SUGGESTION FOR FURTHER CQI MEASURE**	**SUGGESTED BY**	**ACTION TO BE TAKEN BY**	**ENDORSED BY**
Need more exposure on critical thinking project / assignments. Need variety of Assessment method - Using Poster Presentation Approach	Majority of students show good improvement	To be maintained wherever possible in future (Poster Presentation need rigorous planning)	**NAME:** Yahya Samian	**NAME: Yahya Samian**	**NAME:** KJAAS
			SIGNATURE	**SIGNATURE**	**SIGNATURE**
			DATE	**DATE**	**DATE**

CQI ACTIONS

CASE	CAUSE OF POOR PERFORMANCE	SUGGESTION FOR IMPROVEMENTS	PERSON RESPONSIBLE	POSSIBLE CQI ACTION TO BE CARRIED OUT	MONITORING
1	Inappropriate or misalignment of T&L delivery or Assessment	Improve T & L or Assessment Methods	Same Lecturer	Self Reflection and Improvement	Self Monitoring
2	Students Poor Achievements (on certain learning outcomes / skills)	Students need to improve	Lecturers Teaching the same Bath at the following semester	Suggest improvement (Via HoD) action to be taken by the incomming lecturers	TD(A), HoD, Head of Panel, PA
3	Lack of understading of previous (or Pre-requisite) Courses	Improvement of T&L Delivery or Assessment Methods	Lecturers teaching the pre-requisite courses	Forward suggestion (Via HoD) to the lecturer teaching pre-requsites courses	TD(A), HoD, Head of Panel, PA
4	Poor Students Intake	Improve intake / Additional Measures	Faculty, University	Inform Faculty Management	Faculty
5	Poor Infrastructures (Facilities, Time Table, etc)	Improvements by Faculty ? University	Faculty, University	Inform Faculty Management	Faculty

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End of Part 3

Concluding Remarks

CONCLUDING REMARKS

- Assessment must be aligned to the intended learning outcomes
- Assessment need to be planned, craft, measured and analysed based on the intended learning outcomes
- Result of Assessment is an essential part of CQI process
- Documentation / Evidences is essential in OBE

Say what you do, do what you say……

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Hands on

Assessment Mapping

Mapping Final Exam Questions

Based on your incoming or previous Exam Questions;

For each question

1. Write what exactly do you want the student **to able to do** when answering the question (your expectation)
2. Identify **the learning domain and its Taxonomy Level** that the question is assessing
3. Determine which ***CO* and *PO*** that is(are) being assessed by the question

Repeat the above steps for all other questions

4. Prepare **Mapping** of Questions – Taxonomy – POCO

Does your ***Assessment*** appropriately **ALIGN** to the ***Intended Learning outcomes*** and ***level of Taxonomy***???

ASSESSMENT MAPPING (FINAL EXAM)

NO	FINAL EXAM QUESTIONS	%	PERFORMANCE CRITERIA	DOMAIN	LEVEL	CO	PO
1							
2							
3							
4							
5							
6							

Mapping Overall Assessment

Based on your overall Assessment (CW and FE);

For each Assessment Item

1. Determine the **Full Mark** and **Percentage** of the assessment to the total (100 %).
2. Identify **which CLO and PO** that the assessment is addressing and **the percentage** of it contribution. The total percentage MUST be 100

Repeat the above steps for all other assessment items

3. Calculate the **total Mark for each CLO and PO**

Does your ***Assessment*** appropriately **ALIGN** to the ***Intended Learning outcomes Distribution*** ?

Assessment Mapping (OVERALL)

See Sample

				CLO DISTRIBUTION				PO DISTRIBUTION					
				CLO 1 Description	CLO 2 Description	CLO 3 Description	TOTAL	PO 1 Description	PO 2 Description	PO 3 Description	PO 4 Description	TOTAL	
NO	**ASSESSMENT ITEMS**	**Full Mark**	**%**	**CLO 1**	**CLO 2**	**CLO 3**		**PO 1**	**PO 2**	**PO 3**	**PO 4**		
1							***100***					***100***	
2							***100***					***100***	
3							***100***					***100***	
4							***100***					***100***	
5							***100***					***100***	
6							***100***					***100***	
7							***100***					***100***	
8							***100***					***100***	
9							***100***					***100***	
10							***100***					***100***	
11							***100***					***100***	
12							***100***					***100***	
	TOTAL		**100**				100					100	
				CLO CONTRIBUTION				**PO CONTRIBUTION**					

Assessment Process – Planning (OVERALL)

NO	ASSESSMENT ITEMS	%	FULL MARK	CLO 1	CLO 2	CLO 3	CLO 4	CLO 5
				PO 1	PO 2	PO 4	PO 7	PO 11
1								
2								
3								
4								
5								
6								
TOTAL		*100*						

Ě : Represent 100 % mapping

Provided : 1 CLO mapped to 1 PO and 1 Assessment Item Mapped to 1 CLO