



OUTCOME-BASED EDUCATION (OBE) IN A NUTSHELL

FACULTY OF CIVIL ENGINEERING AND BUILT ENVIRONMENT

Outcome-Based Education (OBE)



01

A concept that sets each part of an educational system around targeted goals or outcomes.



02

- Targeted goals or outcomes should be tangible and measurable.
- Translated into a quantity with the purpose to reflect the quality of the educational system.



03

Every student is deemed to have achieved these targeted goals or outcomes by the end of their educational experience in FKAAS.



WHY OBE

1

There is a call for **QUALITY** and **ACCOUNTABILITY** in education!

STAKEHOLDERS

ACCREDITATION
BODIES

INDUSTRIES

2

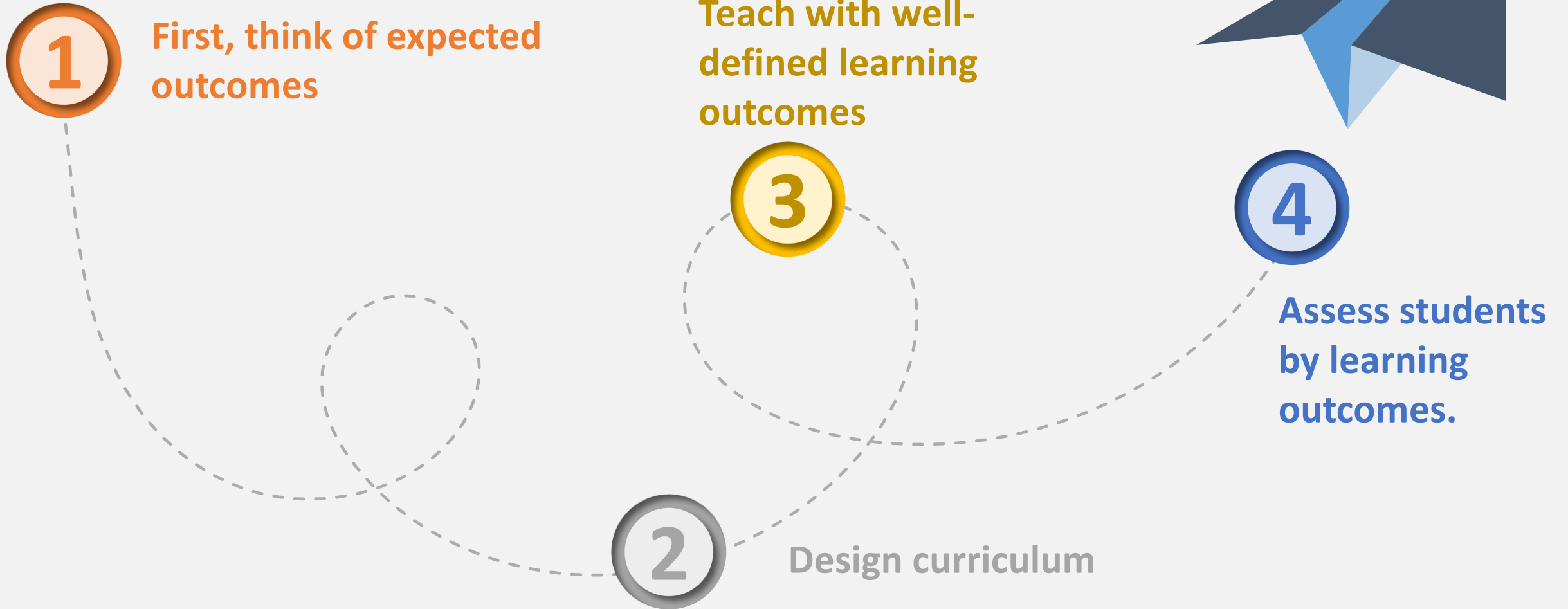
Focus on **how much and how well students have learnt**. Not just on completing the syllabus.

3

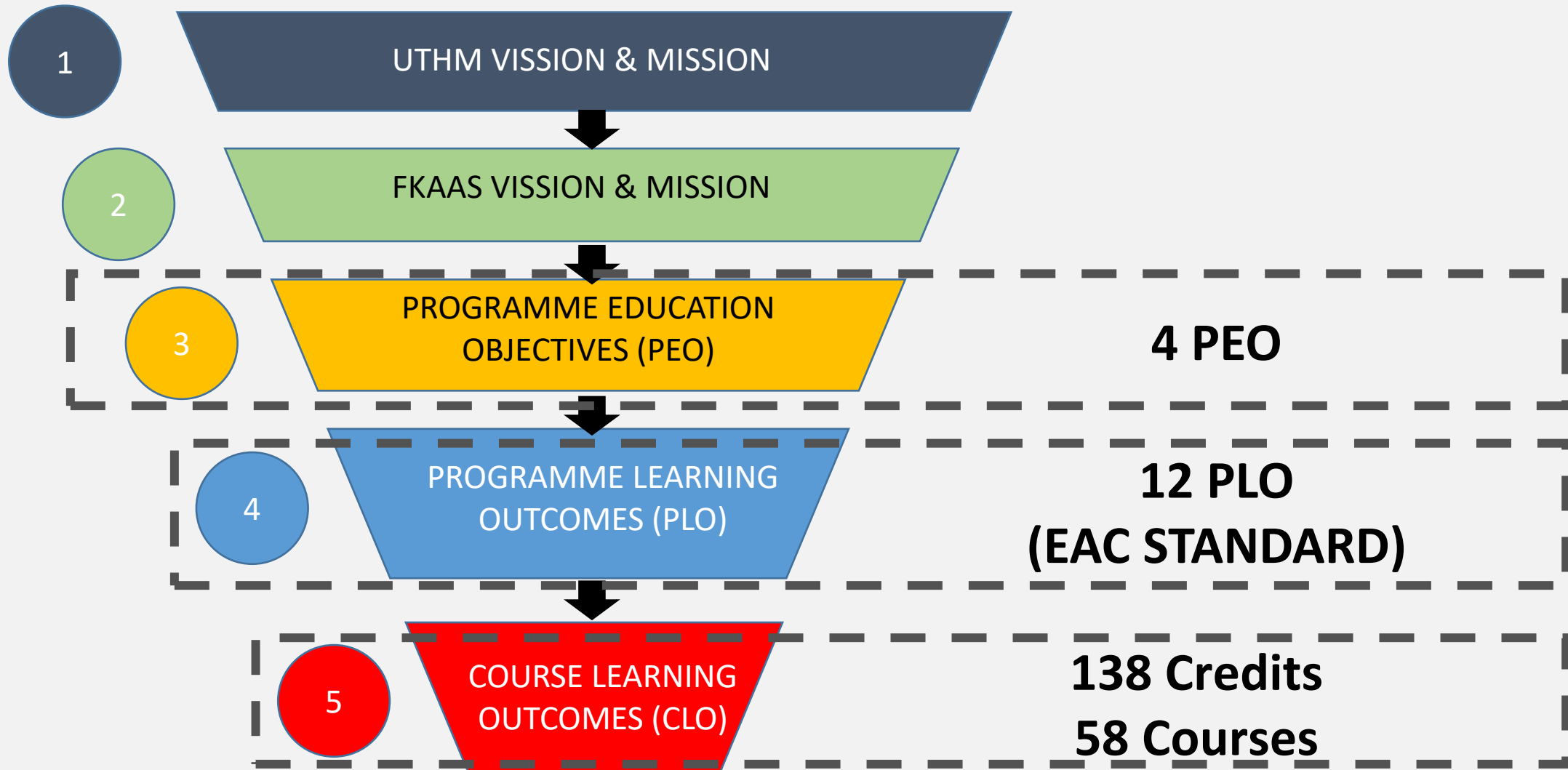
A method of **curriculum design** and teaching that focuses on **what students can do after they are taught**.



STEPS IN OBE....



THE FLOW OF OBE

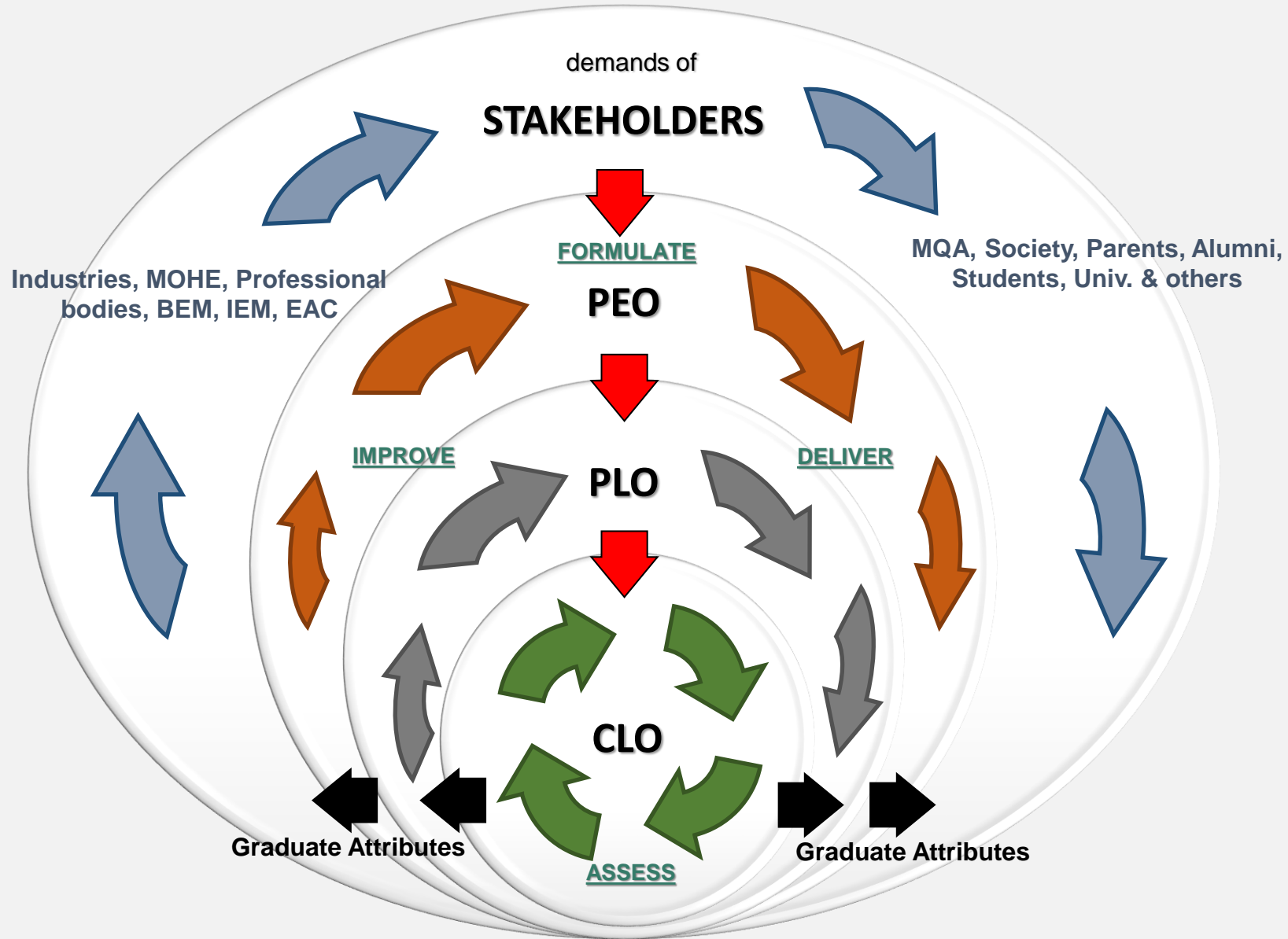


CURRICULUM STRUCTURE

Programme	Intakes	Duration	Matric No.	Credit Transfer
Bachelor of Civil Engineering with Honours	STPM/ Matrikulasi	4 Years	AF 19****	None
	Diploma UTHM (Direct Intake)	3 Years	CF 19**** (September intake) or DF19**** (February Intake)	40 Credits
	Politeknik/ IPTA	3 ½ Years		16 or 17 Credits



THE OBE MODEL



GRADUATE ATTRIBUTES 12 ELEMENTS

KNOWLEDGE

+

SKILL

=

PLO

+

ATTITUDE

OUTCOME BASED EDUCATION (OBE)

A call for quality and accountability in education

Programme Educational Objectives (PEOs)

1

Knowledgeable and technically competent in civil engineering discipline in-line with the industry requirement



2

Effective in communication and demonstrate good leadership quality in an organization



3

Capable to solve civil engineering problems innovatively, creatively and ethically through sustainable approach



4

Able to demonstrate entrepreneurship skills and recognize the need of lifelong learning for successful career advancement



PROGRAMME EDUCATIONAL OBJECTIVES (4 PEO)

To produce civil engineers who are:

Programme Educational Objectives of Bachelor of Civil Engineering with Honours		Related PLO
1	Knowledgeable and technically competent in civil engineering discipline in-line with the industry requirement.	PLO 1, 3, 5
2	Effective in communication and demonstrate good leadership quality in an organization.	PLO 6, 9, 10
3	Capable to solve civil engineering problems innovatively, creatively and ethically through sustainable approach.	PLO 2, 4, 7, 8
4	Able to demonstrate entrepreneurship skills and recognize the need of lifelong learning for successful career advancement.	PLO 11, 12

PROGRAMME LEARNING OUTCOMES (12 PLO)

**Skills obtained
just after
graduation:**

PEO	Key Idea	Description	Primary domain type
1.	Engineering Knowledge (K)	Apply knowledge of mathematics, natural science, engineering fundamentals and an engineering specialisation as specified in WK1 to WK4 respectively to the solution of complex civil engineering problems.	Cognitive
2.	Problem Analysis (PA)	Identify, formulate, conduct research literature and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences (WK1 to WK4).	Cognitive
3.	Design / Development of Solutions (DDS)	Design solutions for complex engineering problems and design systems, components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations (WK5).	Cognitive
4.	Investigation (INV)	Conduct investigation of complex engineering problems using research-based knowledge (WK8) and research methods including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions.	Cognitive
5.	Modern Tool Usage (MTU)	Create, select and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling, to complex engineering problems, with an understanding of the limitations (WK6).	Psychomotor
6.	The Engineer and Society (ESoc)	Apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice and solutions to complex engineering problems (WK7).	Affective
7.	Sustainability (ESus)	Understand and evaluate the sustainability and impact of professional engineering work in the solutions of complex engineering problems in societal and environmental contexts (WK7).	Affective
8.	Ethics (ET)	Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice (WK7).	Affective
9	Individual and Team Work (TW)	Function effectively as an individual, and as a member or leader in diverse teams and in multi-disciplinary settings.	Affective
10.	Communication Skills (CS)	Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.	Psychomotor
11.	Project Management and Finance (PMF)	Demonstrate knowledge and understanding of engineering management principles and economic decision-making and apply these to one's own work, as a member and leader in a team, to manage projects in multidisciplinary environments.	Psychomotor
12.	Life Long Learning (LLL)	Recognise the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.	Affective

COURSE LEARNING OUTCOMES (CLO)

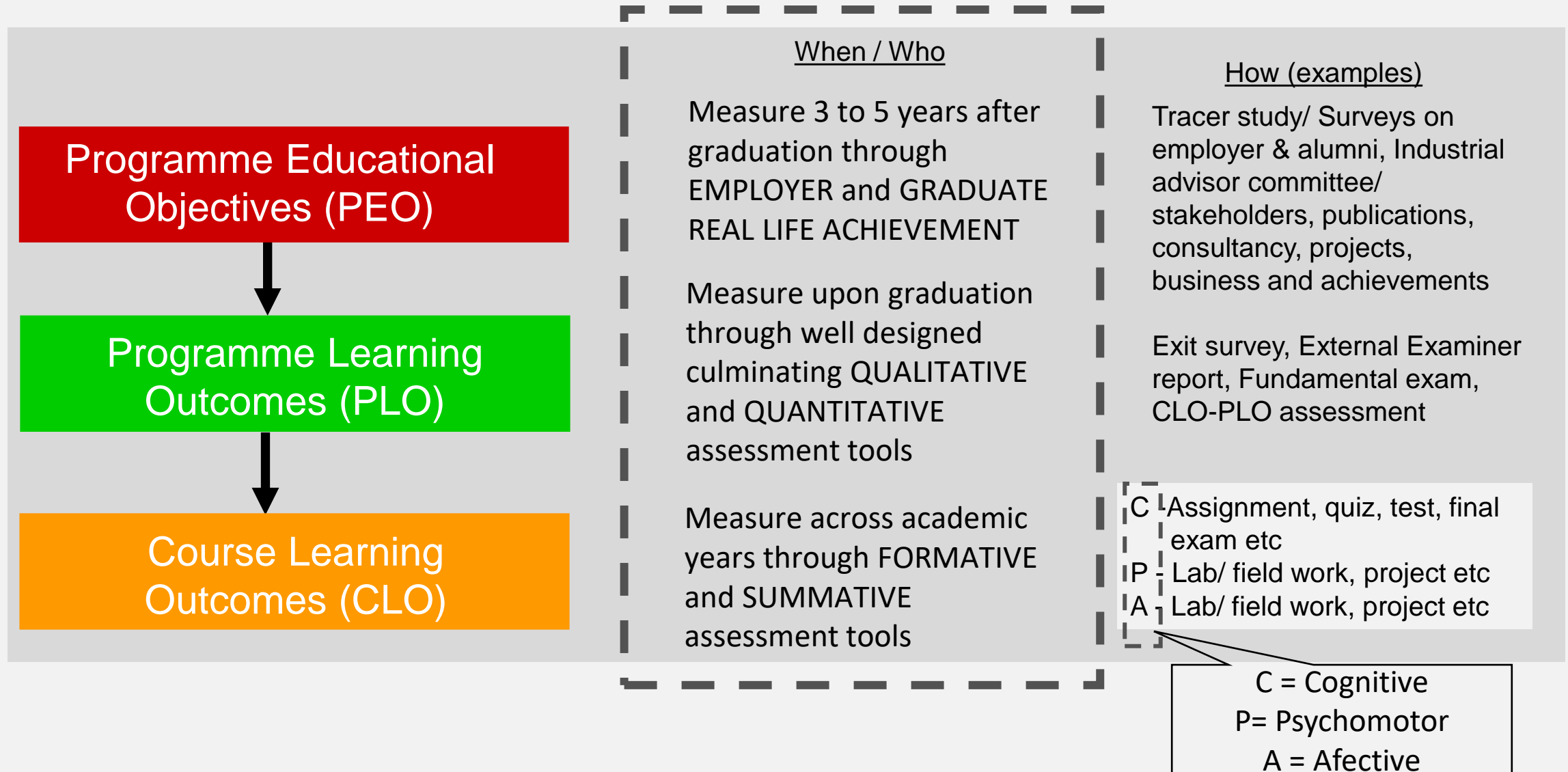
Skills obtained
after completing
the course:

LECTURE PLAN							
Name and Code of Course		FOUNDATION ENGINEERING / BFC 43103					
Synopsis		Foundation is an important element of sub-structure that transfers loads from superstructure to the ground or subsoil. A proper design of foundations will ensure the stability of the superstructure such as buildings and geotechnical structures such as retaining walls and excavations. This course introduces students to the procedures and methods of data collection for foundation design purposes, types and design of foundations as well as improvement methods to the weak soils. Scopes of study includes theory of bearing capacity and design of shallow and deep foundation, types and design of retaining structures, soil investigation procedures and soil improvement.					
Name(s) of academic staff		Dr Alvin John Lim Meng Siang					
Semester and Year offered		Year 4, Semester 1					
Credit Value		3					
Pre-requisite (if any)		BFC 33802 GEOTECHNIC II					
Course Learning Outcome(s)		CLO 1: Design shallow and deep foundations as well as various types of retaining structures (C5). CLO 2: Organize appropriate site investigation methods and instruments according to information collected in the phases of feasibility study , reconnaissance and preliminary investigation of a site (P4). CLO 3: Prepare the design of foundation buildings and selected geotechnical structures which also involve ground improvement method (A4).					
Mapping of the course/module to the Programme Learning Outcomes							
Course LOs / Program LOs		Programme Learning Outcomes (PLO)				Teaching Methods	Assessment
		PLO 2	PLO 5	PLO 10			
1. Design shallow and deep foundations as well as various types of retaining structures.				√		Lecture/ Group Discussion	Test/ Assignment/ Project/ Final Examination
2. Organize appropriate site investigation methods and instruments according to information collected in the phases of feasibility study , reconnaissance and preliminary investigation of a site.		√				Group Discussion	Project

HOW TO MEASURE AN EFFECTIVE OBE IMPLEMENTATION



THE MODEL ASSESSMENTS



PROGRAMME OUTCOMES ASSESSMENT OF PLO

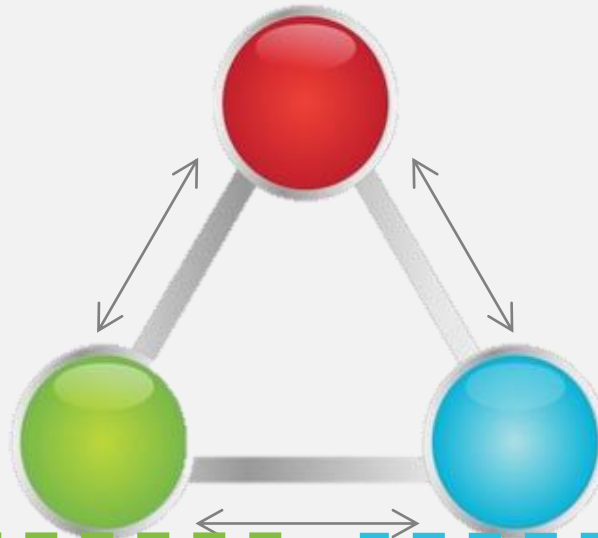
**Overall pass with
average $\geq 55\%$**

A special EXAM under IDP where the questions are strategically design to relate to EACH PLO.

1. CLO-PLO Assessment (Compulsory pass)

(a continuous direct measurement in every semester)

KPI: Achievement in each course with $\geq 50\%$ of students attain $\geq 55\%$ marks



2. Fundamental Civil Engineering Examination (FCEE)

(A one-off direct measurement)

KPI: Achievement in each PLO $\geq 55\%$

3. Exit Survey

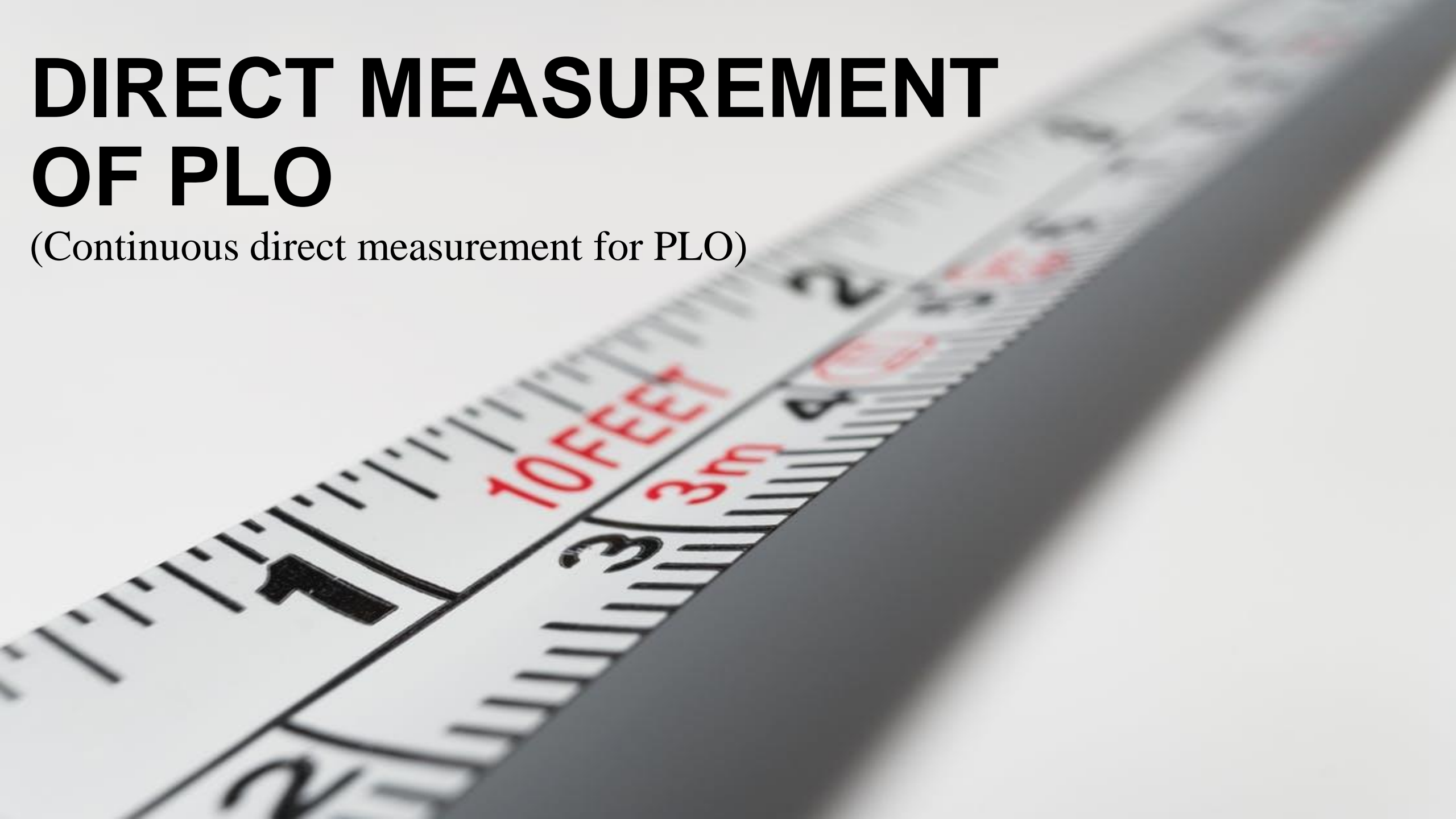
(An indirect measurement)

KPI: 80% of respondents agree to rating ≥ 4 (good and excellent)

A survey done (Google Form) before convocation for students to self evaluate on their attainment of PLO

DIRECT MEASUREMENT OF PLO

(Continuous direct measurement for PLO)



HOW TO ASSESS CLO – PLO

CLO – PLO MAPPING

Course and Programme Learning Outcomes Matrix (CLO-PLO) Bachelor of Civil Engineering with Honours (BFF)																
No.	Course Code	Course	Credits	Learning Outcomes												
				Engineering Knowledge	Practical/ Tech. Skills/ Modern Tool Usage	Communication Skills	Critical Thinking and Problem Solving / Investigation	Individual and Team Work	Life Long Learning	Entrepreneurship Skills	Ethics and Professionalism Values	Leadership Skills/ Project Management & Finance	Design / Development of Solutions	Problem Analysis	Environment and Sustainability	The Engineer and Society
				K	PS	CS	CTPS	TW	LL	ES	ET	LS	DDS	PA	ESus	ESoc
				C	P	P	C	A	A	P	A	P	C	C	A	A
				PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10	PLO11	PLO12	PLO13
UNIVERSITY COMPULSARY COURSES																
1	UHB 10100	English for Higher Education	0	3			3		3							
2	UHB 20102	Essential Academic English	2	3			3		3							
3	UHB 30102	English for Technical Purposes	2	3	3			3								
4	UHB 40102	English for Occupational Purposes	2	3			3	3								
5	UQ* 1xx02	Foreign Language	2	2		3			3							
6	UWB 11002	**Malay Language	2	2				2			3					
7	UQU 10202	Hubungan Etnik		2				2			3					
8	UQU 10103	Kenegaraan dan Pembangunan Mutakhir Malaysia	3	2							3	3				
9	UQU 10303	** Malaysian Studies and Culture		2							3	3				
10	UQI 10102 / UQI 10202 / UQI 10902	Pengajian Islam / Pengajian Moral / ** Islam in Malaysia	2	2	2						3					
11	UQ* 1xx01	Co-Curriculum I	1		3			4	3							
12	UQ* 1xx01	Co-Curriculum II	1		3			4	3							
13	UWB 20302	Tamadun Islam dan Tamadun Asia	2	2		2					3					
Total			19													
FACULTY GENERAL ENGINEERING COURSES																
14	BFC 13903	Civil Engineering Mathematics I	3	3	3				2							
15	BFC 14003	Civil Engineering Mathematics II	3	3	3				2							
16	BFC 24103	Civil Engineering Mathematics III	3	3	3				2							
17	BFC 24203	Civil Engineering Mathematics IV	3	4	4				3							

Each CLO for a course is mapped to PLO, Each having a taxonomy domain of C, P and A.

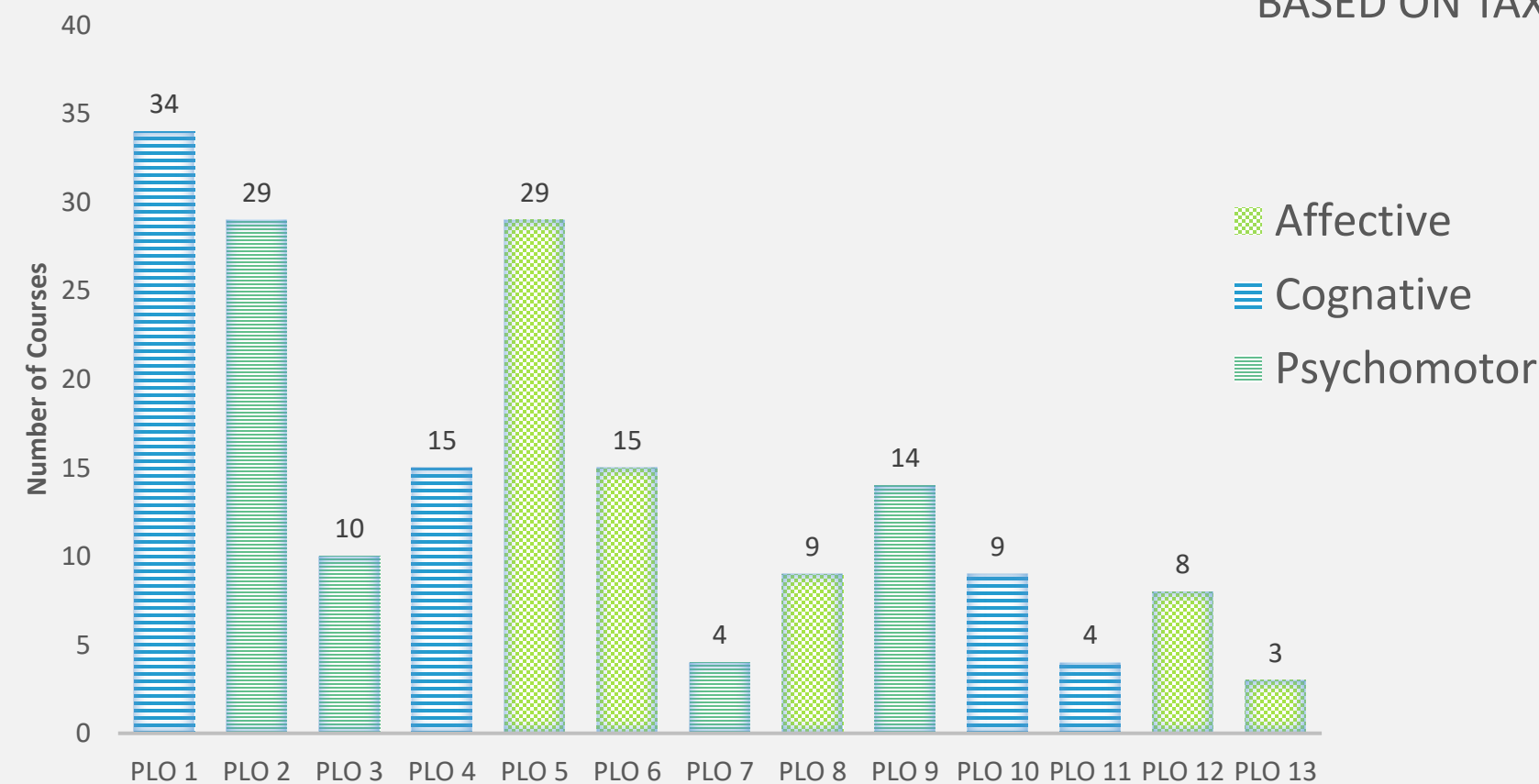
Course and Programme Level
Bachelor of Civil Engineering with Honours (BCEH)

No.	Course Code	Course	Credits	Learning Outcomes												
				Engineering Knowledge	Practical/ Tech. Skills/ Modern Tool Usage	Communication Skills	Critical Thinking and Problem Solving / Investigation	Individual and Team Work	Life Long Learning	Entrepreneurship Skills	Ethics and Professionalism Values	Leadership Skills/ Project Management & Finance	Design / Development of Solutions	Problem Analysis	Environment and Sustainability	The Engineer and Society
				K	PS	CS	CTPS	TW	LL	ES	ET	LS	DDS	PA	ESus	ESoc
				C	P	P	C	A	A	P	A	P	C	C	A	A
				PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10	PLO11	PLO12	PLO13
FACULTY CORE ENGINEERING COURSES																
Structural and Materials Engineering Cluster (KKSB)																
23	BFC 10103	Static dan Dynamic	3		2			3						3		
24	BFC 10502	Civil Engineering Materials	2	2							2				2	
25	BFC 20601	Materials and Fluids Laboratory	1		4		2	2								
26	BFC 20903	Mechanics of Materials	3		4		4	3								
27	BFC 21403	Structural Analysis	3			3		3						4		
28	BFC 34702	Structural Design	2					4			4	5				
29	BFC 34803	Reinforced Concrete Design	3					4			4	5				
30	BFC 43003	Structural Steel Design	3					4			4	5				
31	BFC 43201	Civil Engineering Software Application	1		4		4	4								

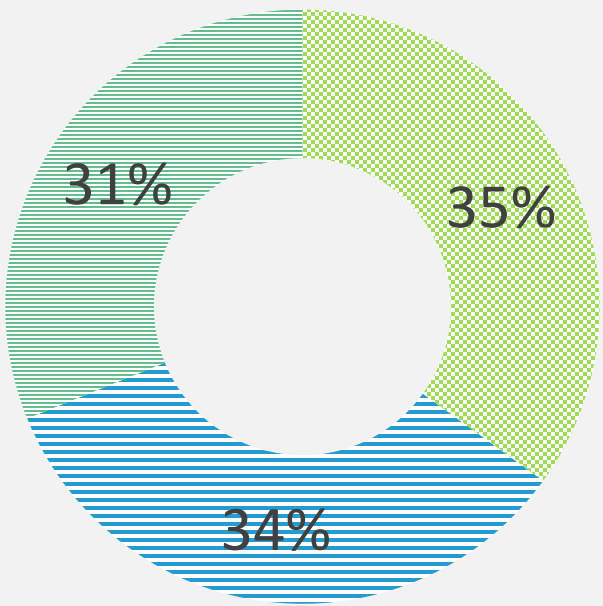
Taxonomy level

PLO ANALYSIS FOR YEAR 2019 WITH 13 PLO'S

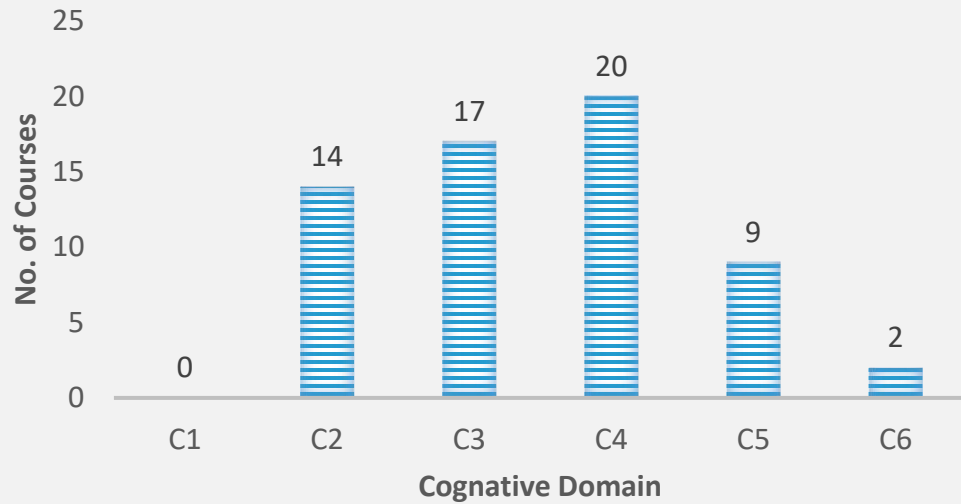
NUMBER OF COURSES VS PLO



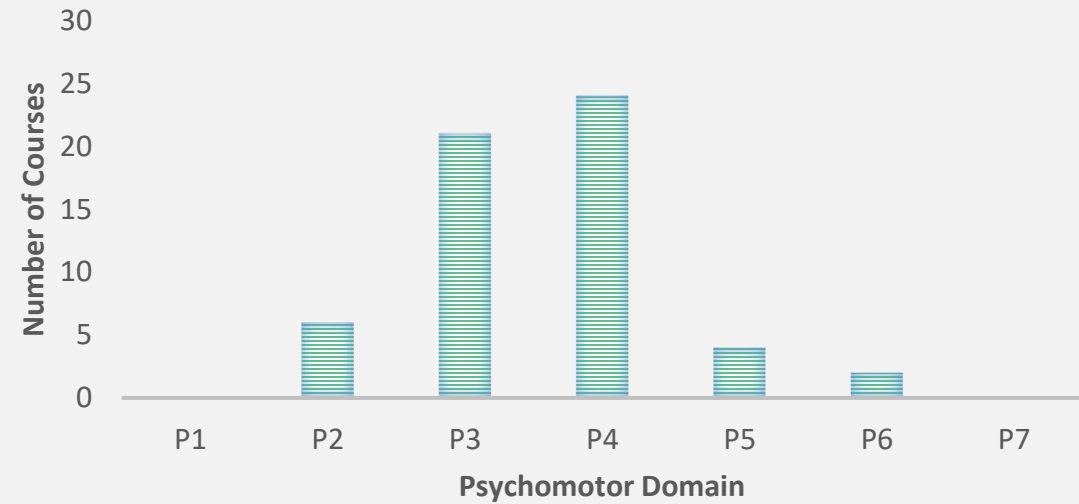
PERCENTAGE OF NO. OF COURSES
BASED ON TAXONOMY DOMAIN



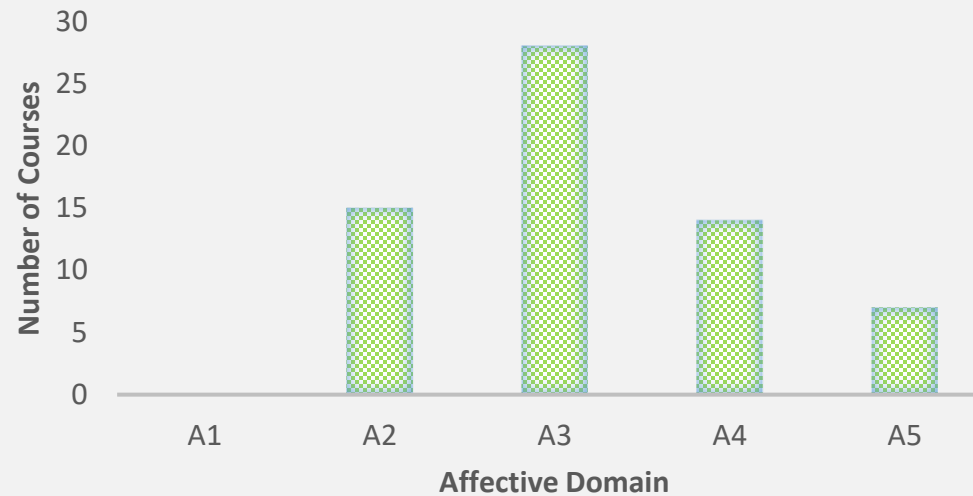
**NO. OF COURSES - COGNATIVE
TAXONOMY**



**NO. OF COURSES - PSYCHOMOTOR
TAXONOMY**

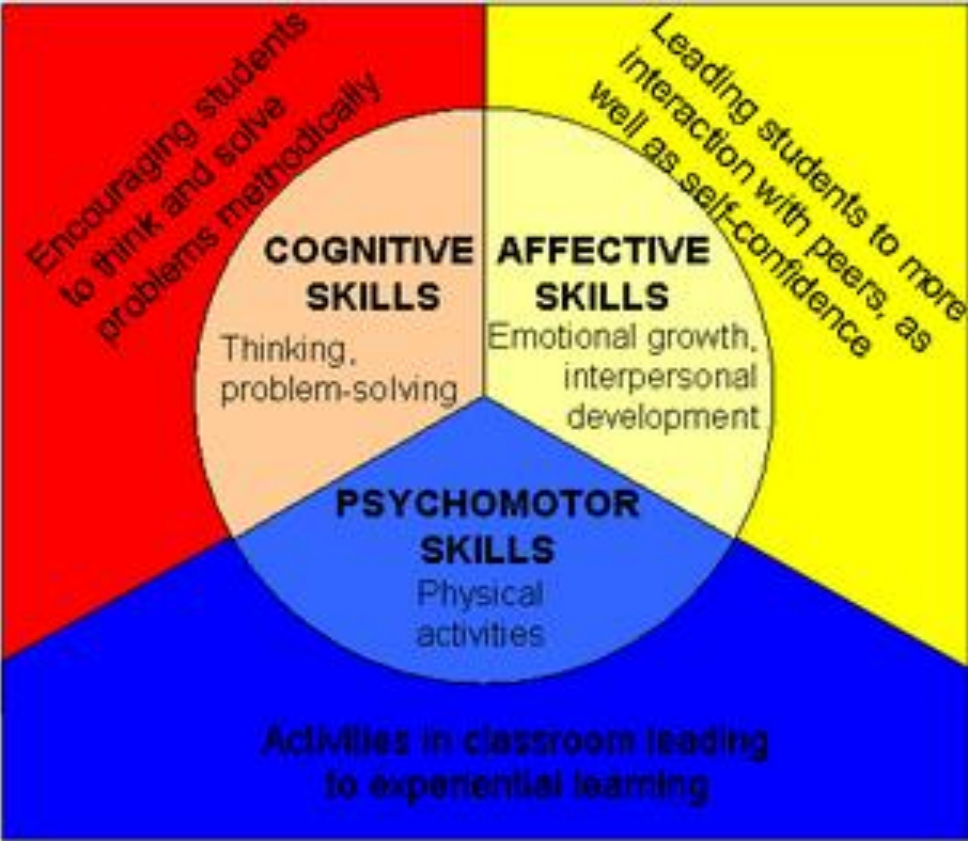


**NO. OF COURSES - AFFECTIVE
TAXONOMY**



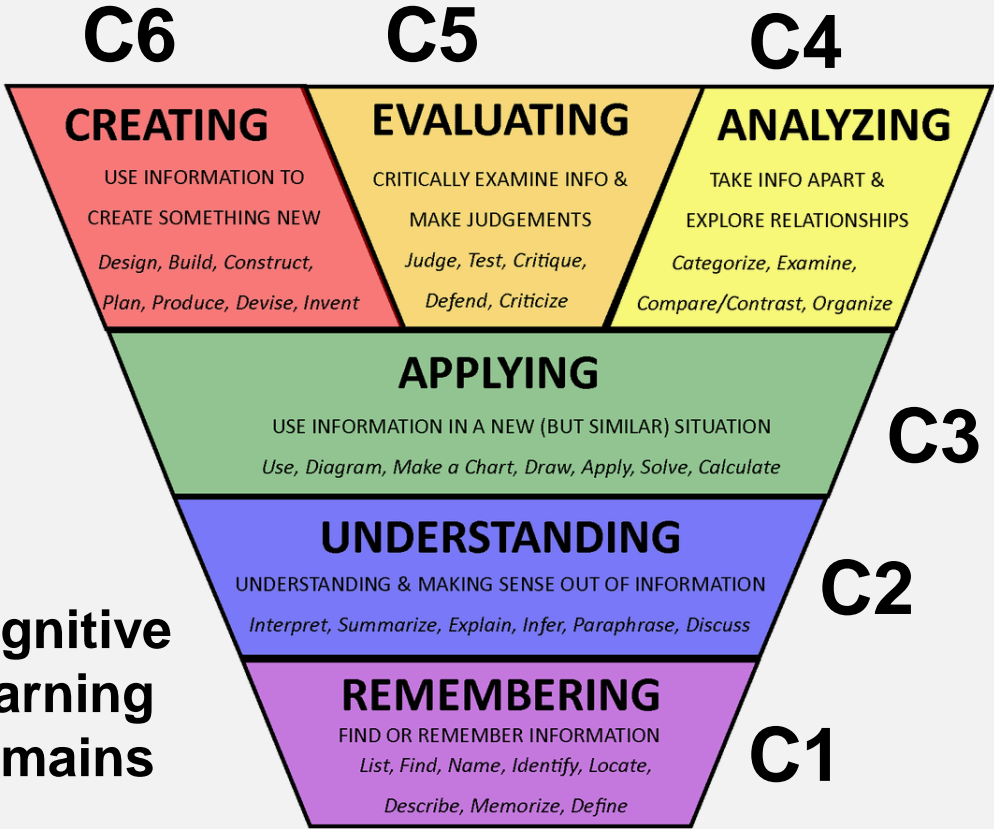
Recommended dominant Bloom taxonomy levels for various qualifications:

Qualifications	Cognitive	Psychomotor	Affective
Diploma	C3	P3	A2
Bachelor	C4	P4	A3
Post graduates	C5	P5	A4

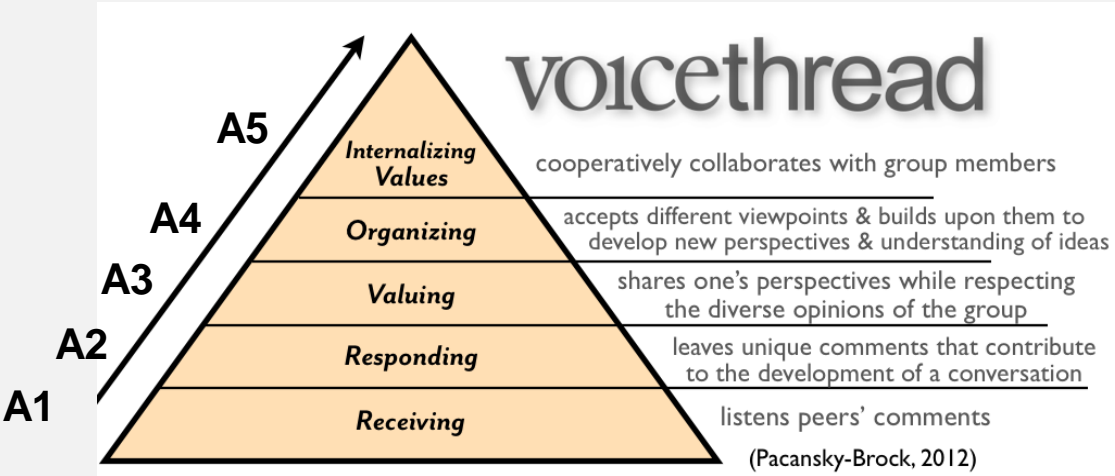
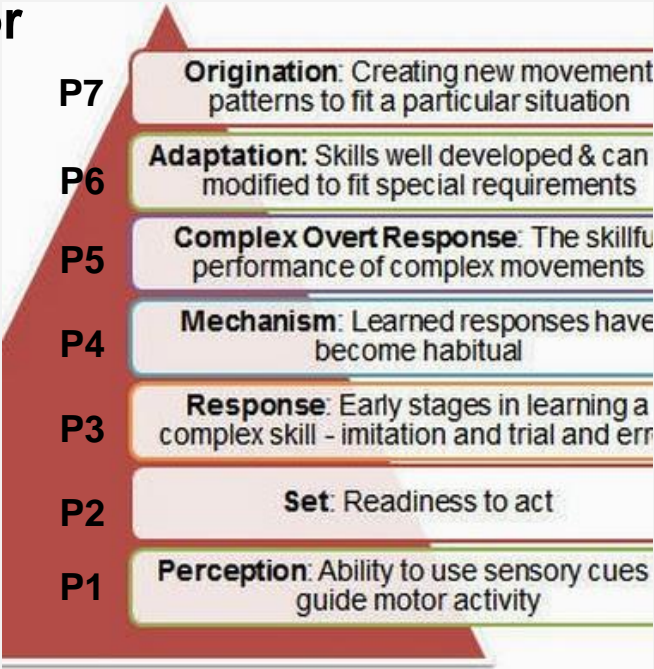


Indirect reference: MQF (2011)

Cognitive Learning Domains



Psychomotor Learning Domains



Affective Learning Domains

LECTURE PLAN (RPP)

Designing the Syllabus CLO to relate with PLO

LECTURE PLAN		
1	Name and Code of Course	FOUNDATION ENGINEERING / BFC 43103
2	Synopsis	Foundation is an important element of sub-structure that transfers loads from superstructure to the ground or subsoil. A proper design of foundations will ensure the stability of the superstructure such as buildings and geotechnical structures such as retaining walls and excavations. This course introduces students to the procedures and methods of data collection for foundation design purposes, types and design of foundations as well as improvement methods to the weak soils. Scopes of study includes theory of bearing capacity and design of shallow and deep foundation, types and design of retaining structures, soil investigation procedures and soil improvement.
3	Name(s) of academic staff	Dr Alvin John Lim Meng Siang
4	Semester and Year offered	Year 4, Semester 1
5	Credit Value	3
6	Pre-requisite (if any)	BFC 33802 GEOTECHNIC II
7	Course Learning Outcome(s)	<p>CLO 1: Design shallow and deep foundations as well as various types of retaining structures (PLO10, C5).</p> <p>CLO 2: Organize appropriate site investigation methods and instruments according to information collected in the phases of feasibility study , reconnaissance and preliminary investigation of a site (PLO 2, P4).</p> <p>CLO 3: Prepare the design of foundation buildings and selected geotechnical structures which also involve ground improvement method (PLO 5, A4).</p>

MANAGING THE ASSESSMENT ACCORDING TO C P A

TYPE OF COURSE	COGNITIVE (CLO 1) %	PSYCHOMOTOR AND AFFECTIVE (CLO 2 + CLO 3)%
	C	P + A
COURSE WITH FINAL EXAM	85	15 (7.5 + 7.5)
COURSE WITHOUT FINAL EXAM – LABORATORY AND LECTURE STYLE (IDP, FYP, All LABORATORY COURSES, C&I)	60	40 (20 + 20)
COURSE WITHOUT FINAL EXAM – COMPUTER AS PRIMARY TEACHING AND LEARNING METHOD (COMPUTER PROGRAMMING, CIVIL ENGINEERING SOFTWARE APPLICATION, ENGINEERING DRAWING AND CAD)	40	60 (30 + 30)

Assessment Breakdown (MODE 85%-15%) – courses with Final Exam

CLO	PLO	Domain	Assessment Tool	Marks (%)	
CLO 1	1 st PLO	COGNITIVE (C)	Quizzes Assignments	10	C = 85%
			Test	20	
			Project	5	
			Final Exam	50	
CLO 2	2 nd PLO	PSYCHOMOTOR (P)	Project (P)*	7.5	P + A = 15%
CLO 3	3 rd PLO	AFFECTIVE (A)	Project (A)*	7.5	
TOTAL				100	

Assessment Breakdown (MODE 60%-40%) – courses without Final Exam

CLO	PLO	Domain	Assessment Tool	Marks (%)
CLO 1	1 st PLO	COGNITIVE (C)	Quizzes Assignments	20
			Test	20
			Project (C)*	20
CLO 2	2 nd PLO	PSYCHOMOTOR (P)	Project (P)*	20
CLO 3	3 rd PLO	AFFECTIVE (A)	Project (A)*	20
TOTAL				100

C = 60%

P + A = 40%

*For Lab courses, follow the lab rubric for distribution of marks

Assessment Breakdown (MODE 40%-60%) – courses without Final Exam

CLO	PLO	Domain	Assessment Tool	Marks (%)	
CLO 1	1 st PLO	COGNITIVE (C)	Quizzes Assignments	10	} C = 40%
			Test	20	
			Project (C)	10	
CLO 2	2 nd PLO	PSYCHOMOTOR (P)	Project (P)	30	} P + A = 60%
CLO 3	3 rd PLO	AFFECTIVE (A)	Project (A)	30	
TOTAL				100	

Designing the Exam Questions Based on Taxonomy level

Final exam – preparing a TOS


	FACULTY OF CIVIL AND ENVIRONMENTAL ENGINEERING	
	UNIVERSITI TUN HUSSEIN ONN MALAYSIA (UTHM)	

TABLE OF SPECIFICATION (TOS) FOR
FINAL EXAM

COURSE CODE: BFC 4033/43003	NAME OF COURSE: STEEL AND TIMBER STRUCTURE DESIGN
SEMESTER: 1	SESSION: 2014 / 2015
CLO (Cognitive):	

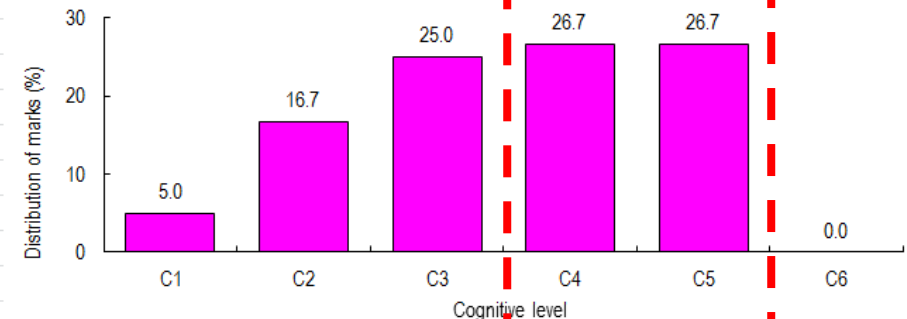
Question Numbers	COURSE CONTENT / TOPICS	COGNITIVE LEVEL BASED ON BLOOM'S TAXONOMY					
		Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation
Q1	(a) Design of restrained beam	1	2	3	3	6	
	(b)						
	(c)						
	(d)						

TOTAL MARKS		3.0	10.0	15.0	16.0	16.0	0.0
PERCENTAGE (%)		5.0	16.7	25.0	26.7	26.7	0.0

Level of Taxonomy Level.

Q2	(a) Design of tensile plate	
	(b) Design of tensile member and gusset connection	
	(c)	
	(d)	
Q3	(a) Identify truss tension members	1
	(b) Estimate size	
	(c) Design welding connection	
	(d)	

Note: This form can be modified by your own requirement



Name of Course Coordinator: norwati jamaluddin

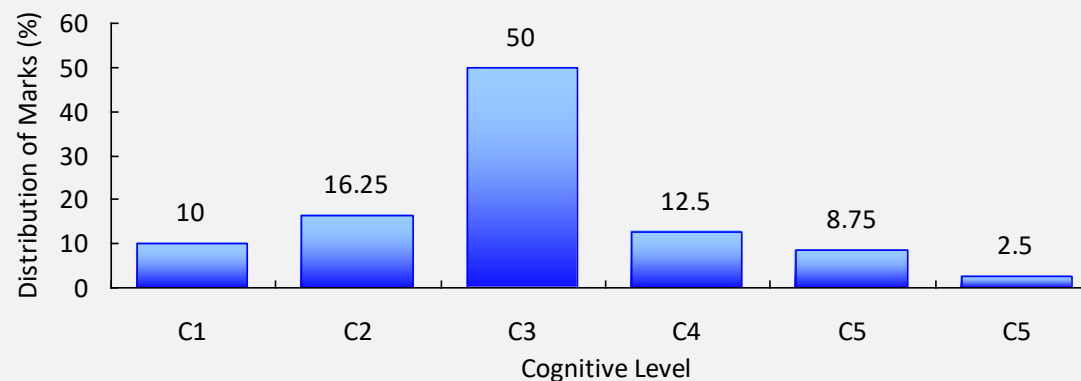
Signature:

Date:

Example: A course with Cognitive Learning Outcome of C3


Method of Assessment	Cognitive (%)						Total (%)
	C1	C2	C3	C4	C5	C6	
Quiz 1 (5%)	1	2	2				5
Quiz 2 (5%)	1	1	3				5
Test 1 (10%)	2	3	4	1			10
Test 2 (10%)	1	2	4	2	1		10
Final Exam(50%)	3	5	27	7	6	2	50
Total (80%)	8	13	40	10	7	2	80
Total (100%)	10	16.25	50	12.5	8.75	2.5	100

Distribution of Cognitive Assessment




Shows breadth and depth
(cognitive) of the course !!

INPUT ASSESSMENT ONLINE STUDENT ASSESSMENT SYSTEM (SAS)

 **STUDENT ASSESSMENT SYSTEM VERSION 2.0**

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Application Development Unit
Pusat Teknologi Maklumat, UTHM
No. Tel : +607-4537252 (Shahril) / +607-4537254 (Azamudin)

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System Status

DEGREE

➤ Semester/Session : 2 / 20142015

➤ Submission : 14/06/2015 - 07/07/2015

DIPLOMA

➤ Semester/Session : 2 / 20142015

➤ Submission : 14/06/2015 - 07/07/2015

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OBE SYSTEM IN UTHM – ANALYSIS OF PLO

tcis.uthm.edu.my/tcis/multi_browser_index.htm

Fail Window Bantuan

ID : ALVIN
No Staf : 02617
Nama : ALVIN JOHN LIM MENG SIANG

App : Outcome Based Education

Peranan : Jawatankuasa OBE Fakulti

Default A A A A A A

MENU UTAMA

- Pengurusan
- Laporan
 - Pencapaian Individu
 - Pencapaian Program

Message Check From Server Every 30 secs.

Bil	User ID	Login Time
1.	MFIRDAUS	21/10/19 02:44 P
2.	ROSMANI	21/10/19 02:43 P
3.	ALVIN	21/10/19 02:43 P
4.	KASERI	21/10/19 02:43 P
5.	AZMI	21/10/19 02:42 P
6.	IDRIS	21/10/19 02:42 P
7.	AMANI	21/10/19 02:42 P
8.	NORAFIZA	21/10/19 02:41 P
9.	NORIHAN	21/10/19 02:41 P
10.	ZAM	21/10/19 02:38 P

Connection : SERVER\TCIS Session : ALVIN20191021144316 IP Address : 10.67.24.116 (Idle) TNS : MIS ServerTime : 02:46:09 P Mon, 21/10/2019

LAPORAN PENCAPAIAN OBE MENGIKUT PROGRAM

Input

Fakulti : FAKULTI KEJURUTERAAN AWAM DAN ALAM SEKITAR Sesi : 20182019 Save As

Program : BFF - SARJANA MUDA KEJURUTERAAN AWAM DENGAN KEPUJIAN Semester : 1 Cetak

Programme	Session/Sem	Course Code , Course Name	PLO 01 (K)	PLO 02 (P)	PLO 03 (CS)	PLO 04 (CTPS)	PLO 05 (TS)	PLO 06 (LLL)	PLO 07 (KK)	PLO 08 (EM)	PLO 09 (LS)	PLO 10 (DS)	PLO 11 (PA)	PLO 12 (SD)	PLO 13 (ES)
BFF	20182019 / 1	BFA40103, PENGURUSAN PERSEKITARAN	73.52	80.92			79.24								
		BFA40203, REKABENTUK BEKALAN AIR	62.19	93.87			93.73								
		BFA40403, REKABENTUK KEJURUTERAAN AIR SISA	68.37	84.95			81.72								
		BFB40603, PERKHIDMATAN BANGUNAN I	55.85	75.68			84.44								
		BFB40703, PERKHIDMATAN BANGUNAN II	79.15	99.33			74.54								
		BFB40903, PENYELENGGARAAN BANGUNAN	73.56	100.00			100.00								
		BFC10103, STATIK DAN DINAMIK		79.87			79.64						56.81		
		BFC10202, PEMULIHARAAN ALAM SEMULAJADI	75.05		86.11									87.28	
		BFC10303, LUKISAN KEJURUTERAAN DAN CAD		65.47		76.31	77.02								
		BFC10403, MEKANIK BENDALIR	58.19		83.43		79.55								
		BFC10502, BAHAN KEJURUTERAAN AWAM	64.15							77.68				83.85	
		BFC13903, MATEMATIK KEJURUTERAAN AWAM I	61.49	87.58				89.53							
		BFC14003, MATEMATIK KEJURUTERAAN AWAM II	58.80	86.18				96.84							
		BFC20601, MAKMAL BAHAN DAN BENDALIR		73.65		77.60	79.86								
		BFC20703, GEOMATIK KEJURUTERAAN		82.29		50.92	82.65								
		BFC20802, PENGATURCARAAN KOMPUTER		80.02		70.29		76.87							
		BFC20903, MEKANIK BAHAN		88.21		52.96	83.85								
		BFC21002, KEJURUTERAAN PEMBINAAN	71.03								92.54			92.44	
		BFC21103, HIDRAULIK		84.22		56.27	89.27								
		BFC21201, MAKMAL HIDRAULIK DAN MEKANIK BAHAN		78.58		69.58	70.02								
		BFC21303, GEOLOGI KEJURUTERAAN	57.83	91.92		77.50	85.90								
		BFC21403, ANALISIS STRUKTUR			89.74		83.70						61.03		

CLO – PLO ASSESSMENT FOR A SINGLE COURSE

ACHIEVEMENT ANALYSIS BASED ON CLO AND PLO				CLO 1	CLO 2	CLO 3
Course Code	Section	OBE Option	Student's Name -[Matric] [Cohort]	PLO 10 (DS)	PLO 02 (P)	PLO 05 (TS)
BFC43103	1	2	(83 , A) IRANA SWILA WILLEY - [CF150111] [BFF0405-11]	81.25	80.00	92.00
			(79 , A-) DEWI NALISSA UMIRA BINTI ZAWAWI - [CF150175] [BFF0405-11]	73.25	86.67	92.00
			(76 , A-) SITI KHALIDAH BINTI ABDUL AZIZ - [DF150013] [BFF0405-12]	73.25	66.67	92.00
			(73 , B+) NUR SYAFIQAH BINTI HUSIN - [CF150050] [BFF0405-11]	70.38	86.67	78.40
			(73 , B+) MUHAMMAD SHAHRUZI BIN MAHADZIR - [DF150065] [BFF0405-12]	68.25	80.00	92.00
			(71 , B+) RAMLAH BINTI BAKRI - [CF150108] [BFF0405-11]	66.75	80.00	92.00
			(71 , B+) MUHAMMAD NUR AIMAN BIN ADNAN - [DF150045] [BFF0405-12]	66.25	80.00	92.00
			(69 , B) NURUL AMIRAH BINTI MAT ROZALI - [CF150090] [BFF0405-11]	63.75	86.67	92.00
			(67 , B) NUR SYAZWANI FIFI BINTI ZULKAFRI - [CF150077] [BFF0405-11]	60.38	86.67	92.00
			(67 , B) NOR HANAN BINTI ISHAK - [CF150179] [BFF0405-11]	61.00	86.67	92.00
			(66 , B) AHMAD ASYRAF BIN SAARI - [CF150247] [BFF0405-11]	60.88	66.67	92.00
			(65 , B) NURUL AIN BINTI MOHD YUNUS - [CF150147] [BFF0405-11]	58.50	86.67	92.00
			(59 , C+) NUR AQIELAH BINTI MOHD AZZAHARI - [CF150138] [BFF0405-11]	51.88*	80.00	92.00
			(59 , C+) MUHAMMAD AMZAR BIN OTHMAN - [DF150012] [BFF0405-12]	51.13*	80.00	92.00
			(59 , C+) MAH MUDDIN BIN AMIN - [DF150036] [BFF0405-12]	51.63*	80.00	92.00
			(58 , C+) MOHAMAD AMIN BIN SAEDON - [CF150252] [BFF0405-11]	52.38*	80.00	78.40
			(57 , C+) MUHAMMAD NOR ALIF BIN MAT ZALI - [DF150030] [BFF0405-12]	49.25*	80.00	92.00
			(55 , C+) AN NAZRIN JOHAN BIN A RAHIM - [CF150254] [BFF0405-11]	46.13*	80.00	92.00
			(54 , C) AHMAD FIQRI BIN HAMDAN - [CF150243] [BFF0405-11]	46.63*	86.67	78.40
			(53 , C) MOHAMMAD ALIF BIN AB AZIZ - [CF150040] [BFF0405-11]	45.50*	86.67	78.40
			(52 , C) MUHAMMAD SYAHMI BIN SUHAIMI - [CF150144] [BFF0405-11]	41.50*	86.67	92.00
			(51 , C) NURUL SHAFIQAH BINTI SUJALI - [CF150136] [BFF0405-11]	42.88*	66.67	92.00



UNIVERSITI TUN HUSSEIN ONN MALAYSIA (UTHM)
CLOs ACHIEVEMENT REPORT

COURSE CODE : BFC43103 **KEJURUTERAAN ASAS / FOUNDATION ENGINEERING**

SECTION : SEMUA

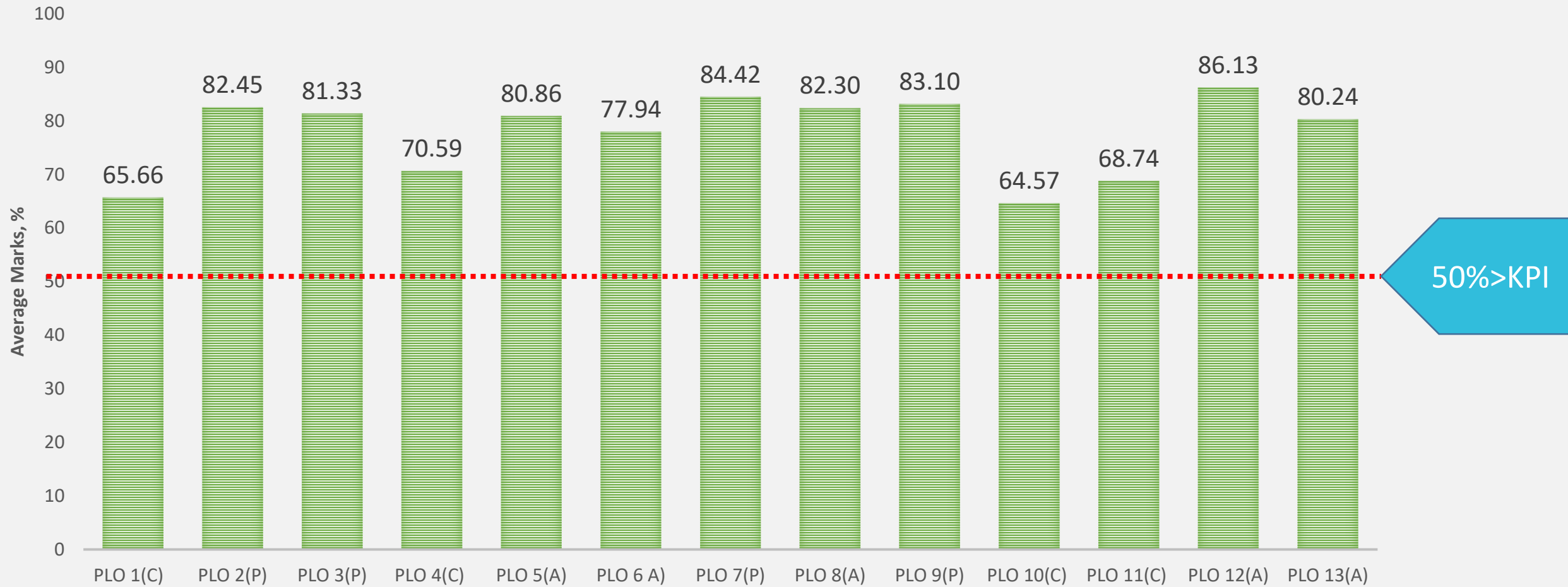
COORDINATOR : 02617 - Ts. Dr. ALVIN JOHN LIM MENG SIANG

CLO-PLO AVERAGE ACHIEVEMENT REPORT					
			CLO 1	CLO 2	CLO 3
Session/Sem	Coursecode	Section	PLO 10	PLO 02	PLO 05
20172018/2	BFC43103	1	55.39	80.74	86.04
		3	60.39	83.11	86.72
		4	50.01	81.67	78.17
		7	40.27	68.06	80.84
		9	44.78	74.16	84.50
Average			50.17	77.55	83.25

Average Marks for all students and sections

PLO ASSESSMENT FOR ALL COURSES

SEMESTER 1, 20182019





Fundamental Civil Engineering Exam (FCEE)

(One-off direct measurement for PLO)

01

FCEE Test is a one-off direct measure of final year students' understanding on the fundamental of civil engineering disciplines

02

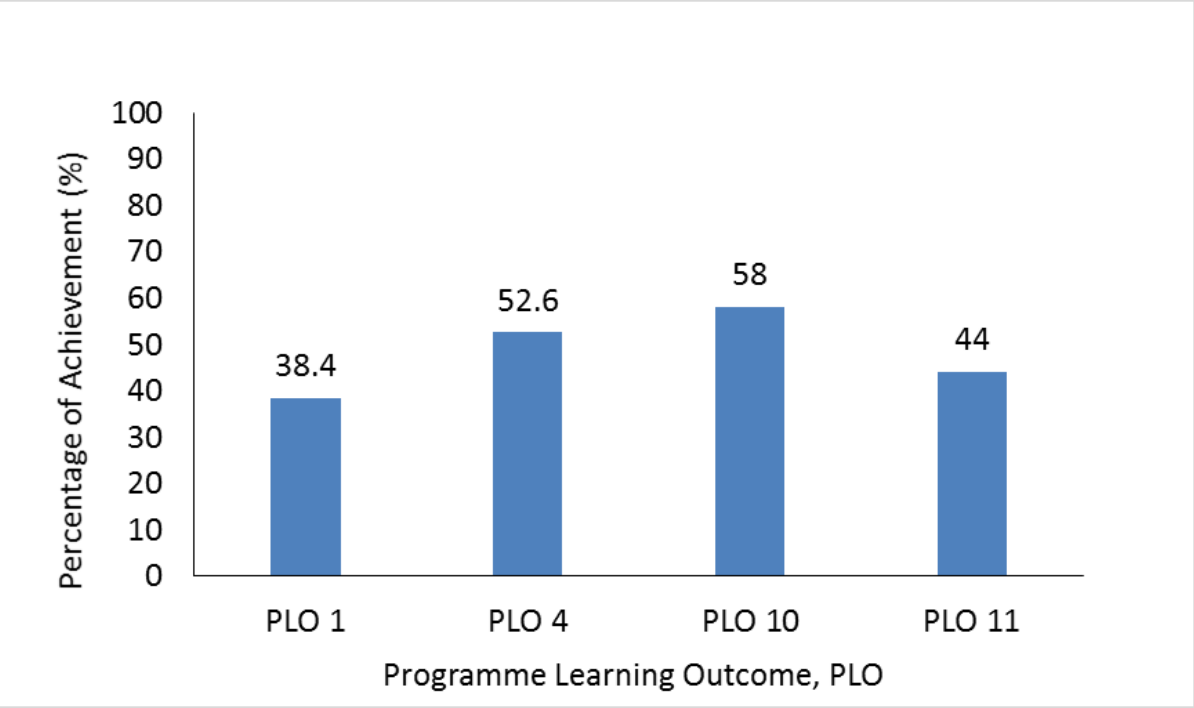
Consists of 40 multiple-choice questions and the duration for the exam is 2 hours. Each PLO consists of 10 questions.

03

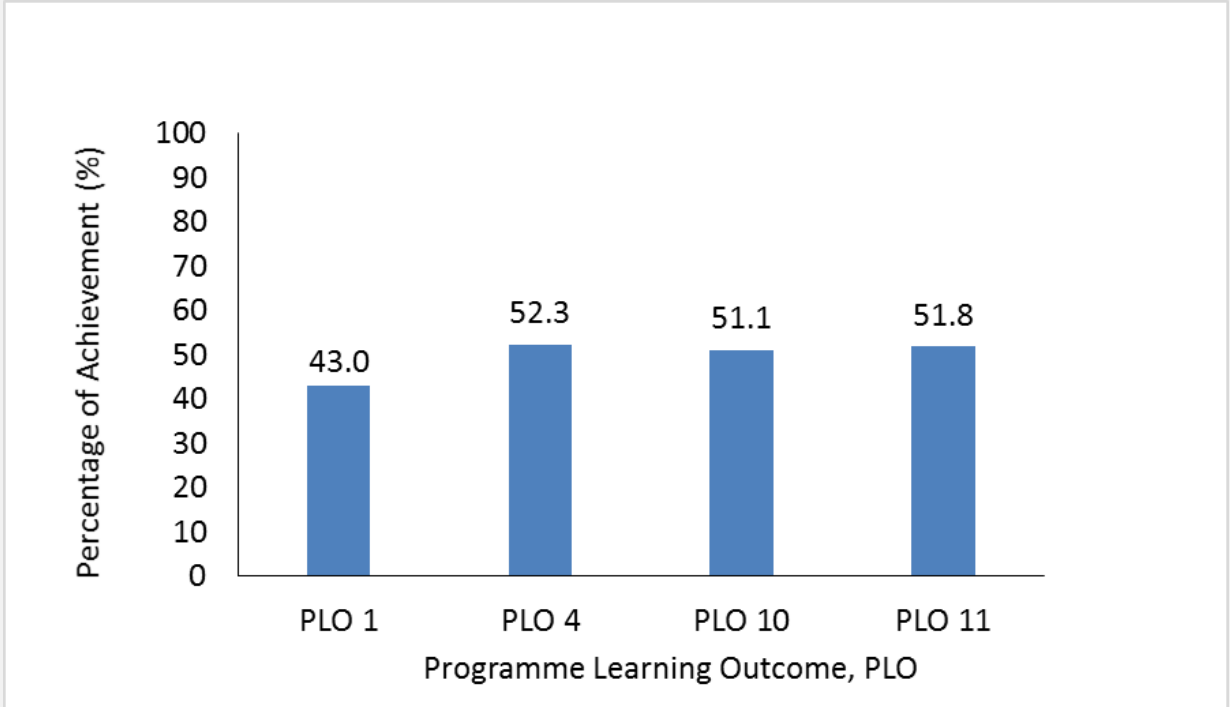
The exam is open book in nature. The FCEE constitutes 20% of the grade in the Integrated Design Project course (IDP).

QUESTIONS	RESPONSES	Total points: 40
<h2>FUNDAMENTAL CIVIL ENGINEERING EXAMINATION (<u>FCEE</u>)/<u>IDP</u> (<u>S7</u> & <u>S8</u>)</h2> <p>SEMESTER 1 SESSION 2018/2019</p> <hr/> <p>FACULTY OF CIVIL AND ENVIRONMENTAL ENGINEERING</p> <p>DURATION: 2 HOURS ANSWER ALL QUESTIONS</p> <p>NAME *</p> <p>Short answer text</p> <p>MATRIC. NO. *</p> <p>Short answer text</p> <p>SECTION *</p> <p>Short answer text</p>		

FCEE PLO achievement for year 2016, 2017, and 2018



2017



2018

EXIT SURVEY

(An indirect measurement for PLO)



- Exit Survey is an indirect measurement of self-assessment of the PLO based on individual perception.
- The main objective is to determine students' perception on the achievement of PLO in oneself.
- This survey is normally completed by all graduating students during their convocation.



EXIT SURVEY PROGRAM LEARNING OUTCOME (PLO) FKAAS

Please rate (tick in the box below) on a scale of 1 (POOR) to 5 (EXCELLENT) how well has each of the 13 PLO been achieved in you.

PART 1: PERSONAL DETAILS

1. Name :
2. Matric Number :
3. Gender :
4. Working Status :
 - ☐ Further Study Master or PhD
 - ☐ Not Employed
 - ☐ Employed (Civil Engineering)
 - ☐ Employed (Not Civil Engineering)

PART 2: PROGRAM LEARNING OUTCOME (PLO)

Please rate (tick in the box below) on a scale of 1 (Fail) to 5 (Excellent) how well has UTHM graduates fulfil these PLO

		Fail	Poor	Average	Good	Excellent
1.	Apply knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex civil engineering problems.	1	2	3	4	5
2.	Create, select and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling, to complex civil engineering activities, with an understanding of the limitations.	1	2	3	4	5
3.	Communicate effectively on complex civil engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.	1	2	3	4	5
4.	Conduct investigation into complex problems using research based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions.	1	2	3	4	5

Exit Survey PLO achievement – % of students responded good (scale 4) or excellent (scale 5) score for year 2016 and 2017

PLO	Taxonomy	Year 2016	Year 2017
1 K	C	74	79
2 PS	P	72	78
3 CS	P	71	80
4 CTPS	C	71	78
5 TW	A	80	83
6 LL	A	78	81
7 ES	P	80	81
8 ET	A	83	85
9 LS	P	78	82
10 DDS	C	69	74
11 PA	C	69	71
12 ESus	A	81	83
13 ESoc	A	77	82

**OVERALL PLO
ASSESSMENT
(2018)**

**CLO-PLO
ASSESSMENT
+
EXIT SURVEY
+
FCEE**

- ALL ASSESSMENT
ACHIEVES THE KPI,
>55%**

	PLO	SEM 1	SEM 2	CLO-PLO	Exit Survey	FCEE	Ave All	KPI ≥ 55%
1	K	62.9	62.6	62.8	79.0	38.4	60.1	PASS
2	PS	77.9	80.0	78.9	78.0		78.5	PASS
3	CS	82.4	79.9	81.2	80.0		80.6	PASS
4	CTPS	71.7	72.8	72.3	78.0	52.6	67.6	PASS
5	TW	80.8	83.8	82.3	83.0		82.6	PASS
6	LL	83.1	79.1	81.1	81.0		81.0	PASS
7	ES	84.4	73.7	79.0	81.0		80.0	PASS
8	ET	70.7	57.8	64.3	85.0		74.6	PASS
9	LS	79.4	82.6	81.0	82.0		81.5	PASS
10	DDS	62.4	59.6	61.0	74.0	58.0	64.3	PASS
11	PA	64.3	68.1	66.2	71.0	44.0	60.4	PASS
12	ESus	81.5	85.7	83.6	83.0		83.3	PASS
13	Esoc	80.2	81.8	81.0	82.0		81.5	PASS



PEO ASSESSMENT

PROGRAMME OBJECTIVES

ASSESSMENT OF PEO USING TRACER STUDY

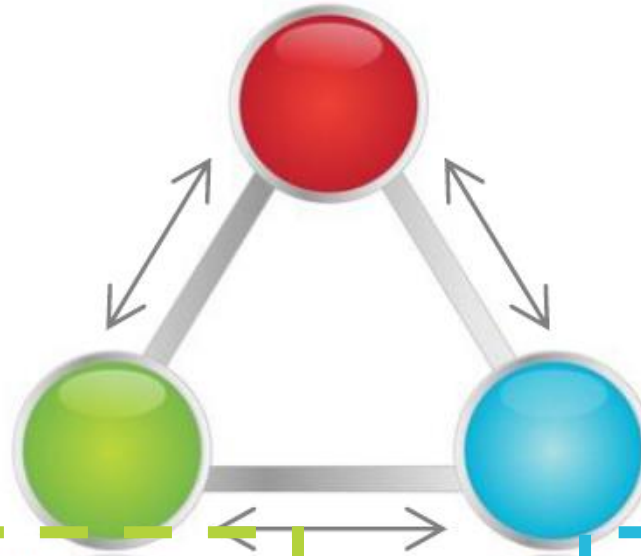
1. Employer Survey (indirect measurement)

KPI: 50% employer respondents agree to rating ≥ 4 (Good and Excellent)

Tracer Study using Google forms sent to Graduates and Employers asking the performance of the graduates in a scale based on PEO's.

2. Alumni Survey (indirect measurement)

KPI: 50% alumni respondents agree to rating ≥ 4 (Good and Excellent)



3. Alumni Survey (direct measurement)

KPI: Given in Table 2-2

Tracer Study using Google forms asking graduates direct achievements: e.g

- Achieved as a Professional Engineer?
- Obtained high position in an organisation?
- Lead a project?

UNIVERSITI TUN HUSSIEN ONN MALAYSIA (UTHM)

*Required

Programme Educational Objectives (PEO) Survey for UTHM ALUMNI

Personal Detail

NAME *

EMAIL *

CONTACT NUMBER *

YEAR GRADUATE DEGREE PROGRAMME *

<https://docs.google.com/forms/d/1Z-ok4b9v16lLg0ubcsjO6Y82xqxtBhsHFEXEhZSqJlQ/viewform>

5/19/2015

UNIVERSITI TUN HUSSIEN ONN MALAYSIA (UTHM)

POSITION *

Tracer Study for Alumni

Programme Educational Objectives (PEO) FKAAS

Have been promoted or offered to a better position *

- ☐ YES
☐ NO

Have been involved in research/ construction project proposal either as member or leader. *

- ☐ YES
☐ NO

Are you a Professional Engineer (PE)? *

- ☐ YES
☐ NO

Have published papers in conference/ journal *

- ☐ YES
☐ NO

Have held leadership positions for a taskforce or project within an organization. *

- ☐ YES
☐ NO

Have been involved in civil engineering design/ construction projects *

- ☐ YES
☐ NO

Have been involved in research and/ or development projects related to civil engineering *

- ☐ YES
☐ NO

THANK YOU

Submit

Never submit passwords through Google Forms.

<https://docs.google.com/forms/d/1Z-ok4b9v16lLg0ubcsjO6Y82xqxtBhsHFEXEhZSqJlQ/viewform>

Using GOOGLE FORM!

ALUMNI SURVEY

1

WHAT ALUMNI SAYS ABOUT THEMSELVES (Indirect measurement)

PEO	Attributes	Rating by Alumni with 3 to 5 years work experience	Rating by Alumni more than 5 years work experience
1	Knowledge in Civil Engineering ; Technically competent	3.80	4.02
2	Communication; Leadership	4.00	4.19
3	Problem solving	3.65	3.91
4	Entrepreneurship; Life-long learning	3.75	3.93

1=V.Poor

2=Poor

3=Average

4=Good

5=Excellent

Tracer study was done for alumni who has worked for at least more than 3 years, 3 to 5 years and 5 to 10 years

2

Alumni's real achievements through direct measurement.

		< 3 years	3-5 years	5-10 years
1	Have you been promoted or offered to a better position? (PEO 1)	YES 96 NO 74 	YES 16 NO 4 	YES 36 NO 7
2	Have you been involved in research/ construction project proposal either as member or leader? (PEO 1)	YES 99 NO 71 	YES 15 NO 5 	YES 31 NO 12
3	Are you a Professional Engineer (PE)? (PEO 1)	YES 0 NO 152 	YES 4 NO 16 	YES 5 NO 39

EMPLOYER SURVEY



WHAT EMPLOYER SAYS ABOUT UTHM FKAAS ALUMNI

Areas of Strength (Average Index ≥ 4.20)	Areas To Be Improved (Average Index < 4.00)
Willing to learn and improve technical abilities (4.34) [PEO 4]	Proficient in spoken English (3.56) [PEO 2]
Able to work with others in team (4.30) [PEO2]	Proficient in written English (3.62) [PEO2]
Willing and able to follow instruction (4.29) [PEO 3]	Able to prepare and deliver presentation (3.85) [PEO 2]
Shows concern for safety, quality and environmental protection (4.25) [PEO 3]	
Willing to do things in the right way (4.20) [PEO 3]	
Willing to share ideas (4.22) [PEO 3]	

EMPLOYER SURVEY



OVERAL RATING BASED ON EMPLOYERS RESPOND

PEO	Rating	Strength attributes	Rating
1	4.01	Knowledge in Civil Engineering	3.88
		Technically competent	3.84
2	4.01	Communication	3.93
		Leadership	3.88
3	3.96	Problem solving	3.88
		Creative/ innovative and critical thinking	4.06
		Ethics and professional values	4.04
4	3.91	Life-long learning	3.94
		Teamwork	4.23

1=V.Poor

2=Poor

3=Average

4=Good

5=Excellent


Data extracted from OBE report done in 2015.

A spiral-bound notebook with a silver metal spiral binding on the left side. The notebook is open to a blank white page. A silver pen with a black grip and a black tip is resting diagonally on the upper right corner of the page. The text "Continuous Quality Improvement (CQI)" is written in a large, black, sans-serif font across the center of the page.

Continuous Quality Improvement (CQI)

Continuous Quality Improvement (CQI) Efforts

- To improve CLO within the teaching learning of a particular course.
- A CQI Report for CLO was done where the proposed strategy for improvement is suggested and passed onto the next lecturer automatically via a course management system.

 UNIVERSITI TUN HUSSEIN ONN MALAYSIA CQI REPORT FOR CLOs		
Session / Sem : 20152016 / 1 Course Code : BFC43303 Course Name : PROJEK REKABENTUK BERSEPADU / INTERGRATED DESIGN PROJECT		
CLO 1 Design the building structures and infrastructures for complex engineering based on relevant guidelines. KPI : At least 50% of students have achieved 55 marks and above Setting : 2		
PLO 10 (DS)	Achievement of Previous Semester (20142015 / 2) 100 % Passed / No of Students : 252 / 252 Remarks/Status : Achieved	Achievement of Current Semester (20152016 / 1) 99.34 % Passed / No of Students : 151 / 152 Remarks/Status : Achieved
	Area of Concern	Proposed Strategy
1. Student Performance	Let students critical thinking	Closing monitoring by Ir lecturer
2. Course Contents	Provide more notes	Add green building component
3. Delivery Methods	Student group selected by lecture	Give more example as per industry practice
CLO 1 Design the building structures and infrastructures for complex engineering based on relevant guidelines. KPI : At least 50% of students have achieved 55 marks and above Setting : 2		
PLO 10 (DS)	Achievement of Previous Semester (20142015 / 2) 100 % Passed / No of Students : 252 / 252 Remarks/Status : Achieved	Achievement of Current Semester (20152016 / 1) 99.34 % Passed / No of Students : 151 / 152 Remarks/Status : Achieved
	Area of Concern	Upcoming Strategy
4. Assessment Methods	Provide guideline student presentation	Provide guideline student presentation



Continual Quality Improvement (CQI) Report
Faculty of Civil and Environmental Engineering

CQI Report (OBE Form)			
Programme :	Bachelor of Civil Engineering with Honours	Semester :	II
Course Name :	Hydraulics	Session :	2014/2015
Course Code :	BFC 21103	Section :	1, 2, 3, 5 & 6
Coordinator :	Tan Lai Wai	Cohort :	BFF0405-8

KPI	50% of students achieve 55% marks		Achieved	Not achieved		
CLO 1 (Cognitive)	Explain the concept of uniform and non-uniform flows in open channel, hydraulic structure and machinery (C4, PLO1)					
Number of students that require CQI for Test 1 (score less than 55%)	88 (31.2%)	Attach "Laporan Keseluruhan Kursus" for <u>Test 1</u> (from TCIS) (Appendix 1)				
Number of students that require CQI for Test 2 (score less than 55%)	178 (63.1%)	Attach "Laporan Keseluruhan Kursus" for <u>Test 2</u> (from TCIS) (Appendix 1)				
CQI activities	Additional Class	Additional Exercise	Additional Notes	Different Delivery Approaches	Self-assessment	Other
Please tick (x)	–	x	x	x	x	x
Description on CQI activities	Students were given more exercises, additional notes (also in graphic & video formats to create interest), and also trial exams to help students improve their grasps of the learning outcomes.					
Description on topics where CQI has been conducted (Attach examples and pictures as proof)						
1) Careless mistakes in calculating open channel flow characteristics (Appendix 2). Students were always informed that if mistakes were done earlier in the calculations, the end results of analysis will be affected.						
2) Students have problems in derivation and mathematical equations. Appendix 3 shows how WhatsApp and online learning management system AUTHOR are used in delivering lessons.						
3) Video and photos were used in learning and teaching of Hydraulics to relate students to the engineering practices (Appendix 4).						
4) Additional notes and exercises were conducted throughout the semester for Hydraulics. For every chapter, new exercise questions were discussed during the tutorial sessions (Appendix 5).						

- More comprehensive CQI is also carried out in the class with students for every course.
- This is normally recorded in a faculty level form called CQI Report

STUDENT LEARNING TIME (SLT)



STUDENT LEARNING TIME (SLT)

According to MQF, 1 credit = 40 notional hours

Notional hours is simply defined as total hours (lectures, tutorial, practical, student-centred learning activities, self-study, and assessment both formal and informal) required by an average level student to master the stipulated learning outcomes.

Implementation in UTHM

Credit hour	Types of delivery	Meeting hours/week
1	Lecture	1
1	Tutorial	2
1	Practical	2

For courses pre-dominantly based on skill, co-curriculum, final year project and integrated design

Credit hour	Types of delivery	Meeting hours/week
1	Lecture	1
1	Tutorial	2
1	Practical	3

Fakulti/Pusat Pengajian (Faculty/Centre): FACULTY OF CIVIL & ENVIRONMENTAL ENGINEERING			Mukasurat (Page): 1/4	
Kod Kursus (Course Code): BFC 43103	Nama Kursus (Course Name): FOUNDATION ENGINEERING			
Kursus Pra Syarat (Course Prerequisite): BFC 33802 GEOTECHNIC II	Kredit (Credit): 3	Kuliah (Lecture): 3	Tutorial (Tutorial): 0	Amali (Practical): 0
Edisi (Edition) : 7	Tarikh Keluaran (Date of issue): 1 JANUARY 2018			

3 Credits
3 Hours Lecture

Category of Activities	Activities	Total Hours/ Sem
Guided learning	Lecture	42
	Tutorial / Practical	0
	Student centered learning activities	4
Self learning activities	Preparation for assignments / projects	20
	Independent study / revisions	42
	Preparation for assessment	3+3 = 6
Formal assessments	Continuous assessments	3
	Final examination	3
Total SLT Hours		120

Steps
1 3 Hours Lecture x 14 weeks = 42 Hours
6 Balance of Notional Hours = 120 – 42 – 42 – 6 – 3 – 3
2 Equivalent to Lecture Hours = 42
5 Total for Formal Assessment Hours = 3 + 3
4 Total Hours for Test
3 Total Hours for Exam

TIME ALLOCATION FOR FINAL EXAM

Course learning outcomes help students to understand what is expected of them.

Exam questions must be consistent with the course learning outcomes.

Suggested time allocation for test and exam (± 0.5 hour):

No. credit	Test	Final Exam
1 credit	1 hour	1 hour
2 credits	1 hour	2 hour
3 credits	2 hour	3 hour
4 credits	2 hour	3 hour

Justification: Equivalent assessment time for learning time spent

The End