



# Realignment of ETAC requirement & curriculum review process 2022-2023

PROGRAM PENGAJIAN  
KEJURUTERAAN  
JKA

DIP. KEJ. AWAM (DKA)

DIP. KEJ. ALAM SEKITAR (DAS)

DIP. KEJ. PERKHIDMATAN  
BANGUNAN (DPB)



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# OUR AGENDA

01 QUALIFYING REQUIREMENT  
RENEWAL CYCLE ETAC 2024

02 GENERAL INFORMATION

03 PEO

04 PLO

05 ACADEMIC CURRICULUM

# 01 Qualifying requirement for renewal cycle

Accreditation is accorded to a programme for a maximum period of six years. The IHL shall **apply for re-accreditation not less than six months** before the expiry of the accreditation period.

An IHL may offer programme/s **via various modes and at different locations**, such as **fulltime, franchised, twinning, part-time, distance learning, joint programme, multi campus etc.** For each of the programmes, **the IHL shall apply for accreditation separately.**

**The evaluation** exercise shall be conducted by an Evaluation Panel appointed by ETAC **(refer to Appendix A)**

**ETAC PG 4 & 5**

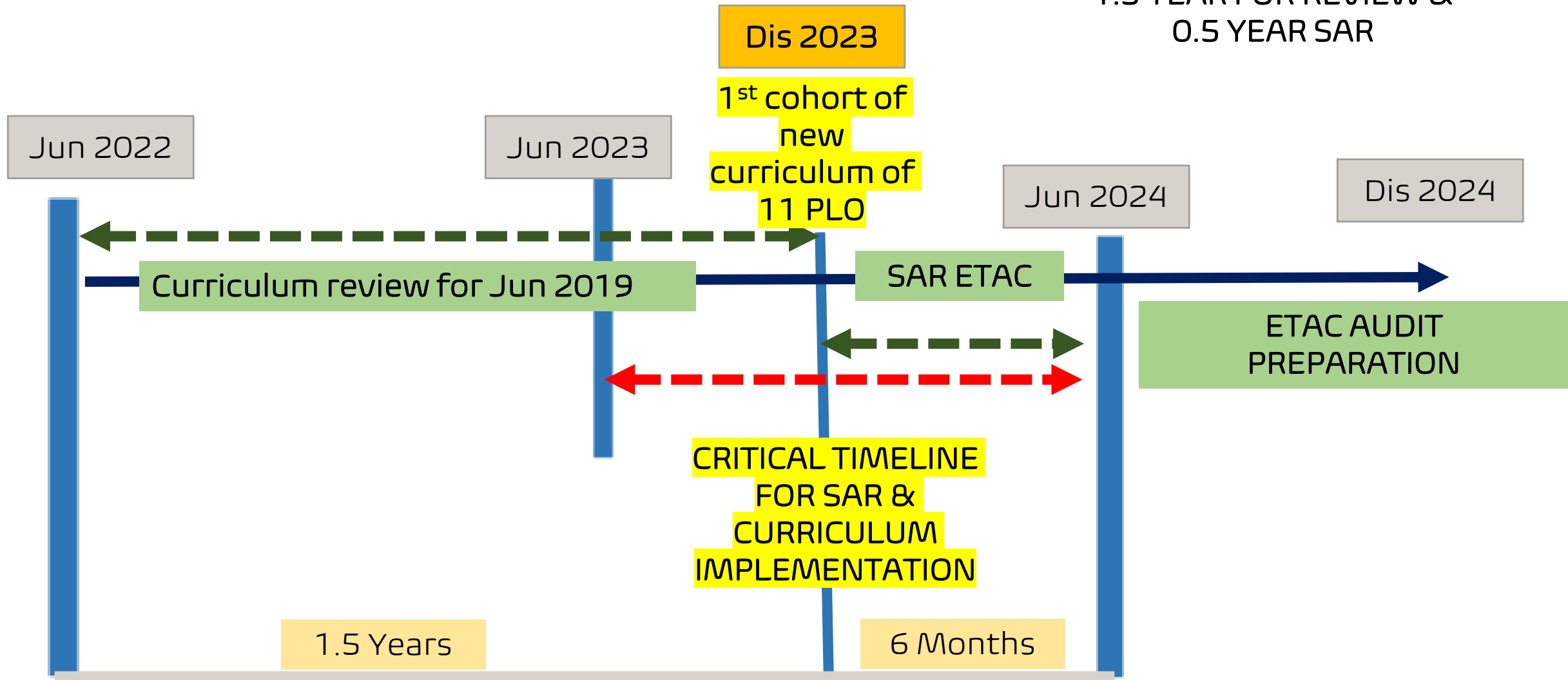


**ENGINEERING TECHNICIAN  
EDUCATION PROGRAMME  
ACCREDITATION STANDARD 2020**

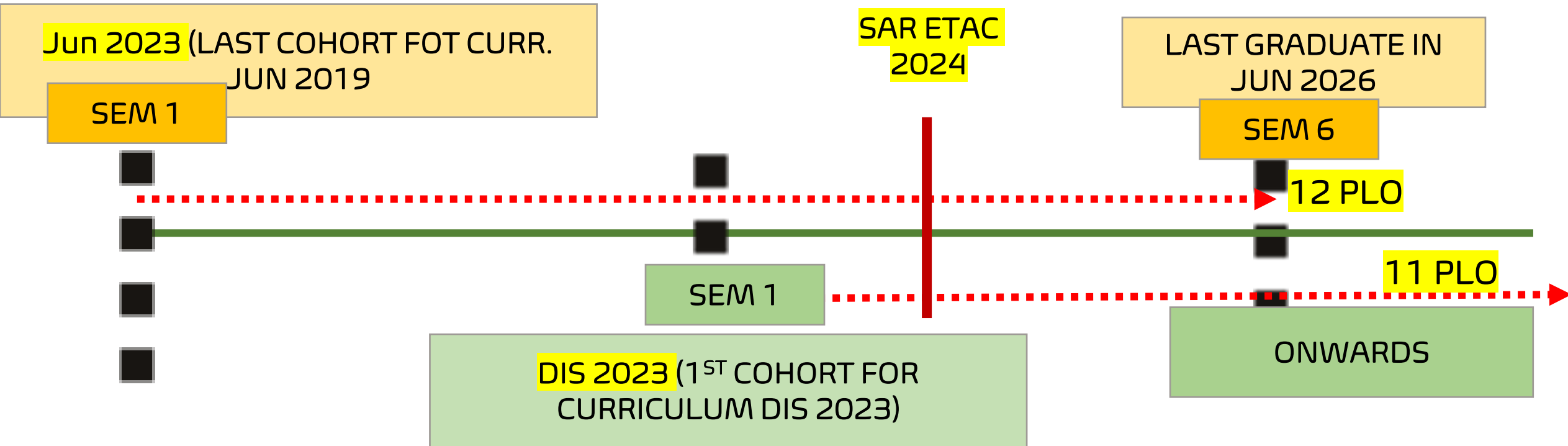
# Remapping Timeline For Renewal & Curriculum Review

Date of Accreditation : 1/01/2019 to 31/12/2024

1.5 YEAR FOR REVIEW & 0.5 YEAR SAR



# CURRICULUM IMPLEMENTATION TIMELINE (JUN 2023 ONWARDS)



## CRITICAL TIME FOR US & SAR SHALL COVER ABOUT:

- 1) 2 CURRICULUM DOCUMENT IMPLEMENTATION (12 PLO VS 11 PLO/ GAP ANALYSIS)
- 2) PEO MEASUREMENT STILL JUN 2014 CURRICULUM & INDICATOR FOR JUN 2019 & NEW CURRICULUM
- 3) DP/DK/NA REALIGNMENT NEW DK (DK8 &DK9)
- 4) PLORR FOR 12 PLO (GAP BETWEEN PLORR & STUDENT GRADUATION REQUIREMENT)

QUALIFYING REQUIREMENTS BY ETAC 2020	ACTION
Minimum 90 SLT credit units. At least 60 SLT credit units shall be engineering or engineering technology courses of which a minimum 30 SLT credit units shall be allocated for practice-oriented components in the technical and specialist area.	BK & POLY
Final year project (4-6 SLT credit units)	
Industrial training / WBL (minimum of 16 weeks)	
Minimum of 6 full-time teaching staff	POLY
Teaching Staff: student ratio of 1:20 or better	
External examiner's report (minimum of one report over three years) please check ee due date.....	
Programme Educational Objectives	POLY & BK
Programme Outcomes	POLY & BPN

# SAR REQUIREMENT THAT RELATED TO THE PROCESS OF REVIEW, REVISED & CQI CURRICULUM

General  
information

PEO

PLO

ACADEMIC  
CURRICULUM



# 0.2 : 9.2.1 GENERAL INFORMATION

ETAC REQUIREMENT		UKAAB
i)	Provide general information on the IHL and on the specific programme and attach the IHL academic calendar.	
ii)	Provide detailed information on programme history of accreditation (year of accreditation, conditions imposed and actions taken).	/
iii)	Describe any self-initiated changes made to programme stating the year the changes were introduced.	/



## Tindakan Kpro & ex-Kpro

Provide detailed **information on programme history of accreditation** (year of accreditation, conditions imposed and actions taken).

A summary of history information related to the curriculum change and why its change...

Describe any **self-initiated changes** made to programme stating the year the changes were introduced.

A summary of what have IHL contribute accordingly to the curriculum version changes. (a summary reference to a year of accreditation)

- i) Politeknik penyelaras kursus (jelaskan skop tugas dan perubahan yg dilaksanakan oleh IHL
- ii) Maklumbalas kurikulum
- iii) Pembangunan rubrik & alignment DP/DP/NA (CAT)  
(rumusan sahaja)

**(Tindakan :**

**Mohon dokumentkan semua aktiviti semak semula Jun 2019 dan Dis 2023 bagi tujuan SAR 2024)**

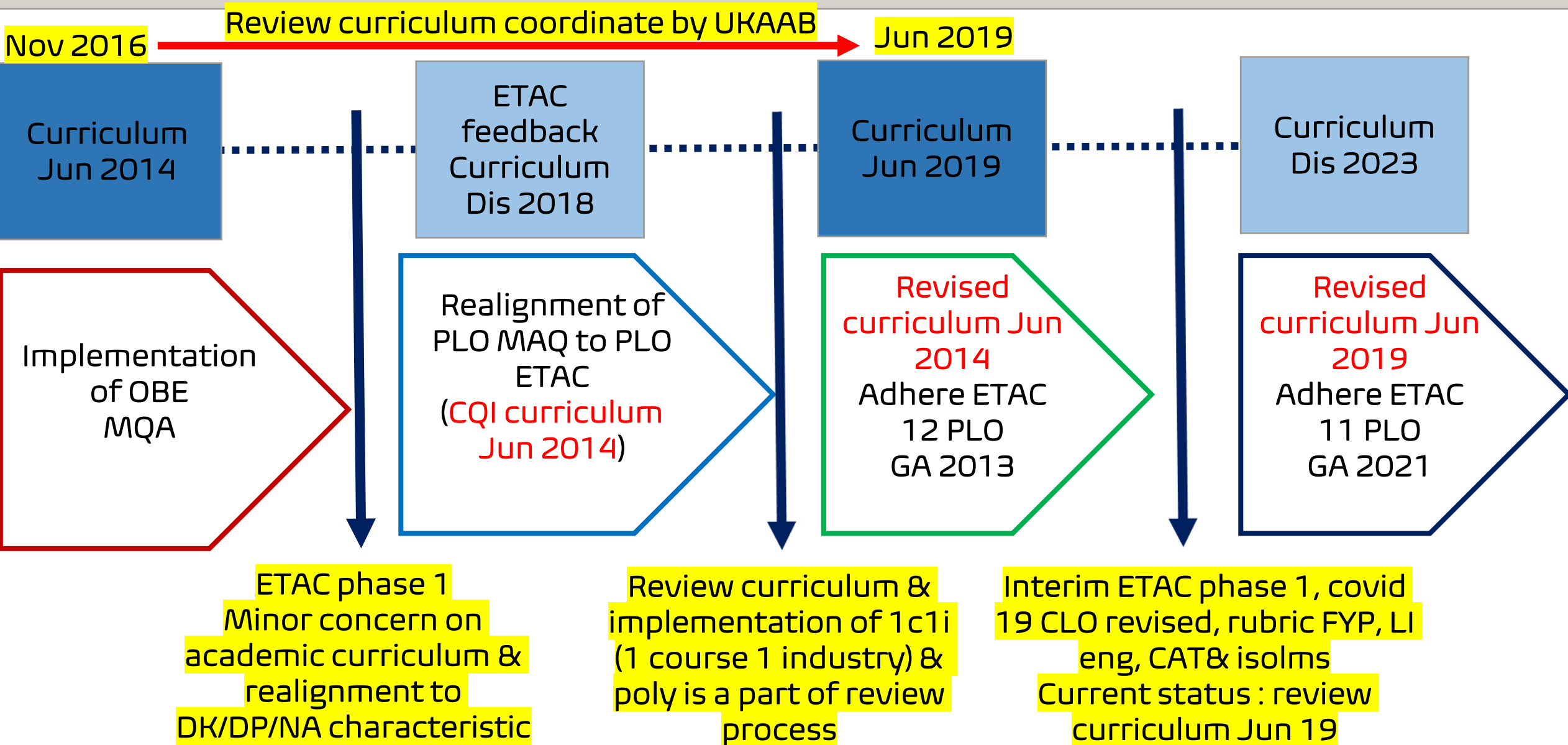
# The most important moment in our history..

Rise & Fall

Up & Down



# General information :Accreditation history of eng. programme in JKA 2016 onwards



**Review curriculum coordinate by UKAAB**  
**Nov 2016 – Jun 2019**

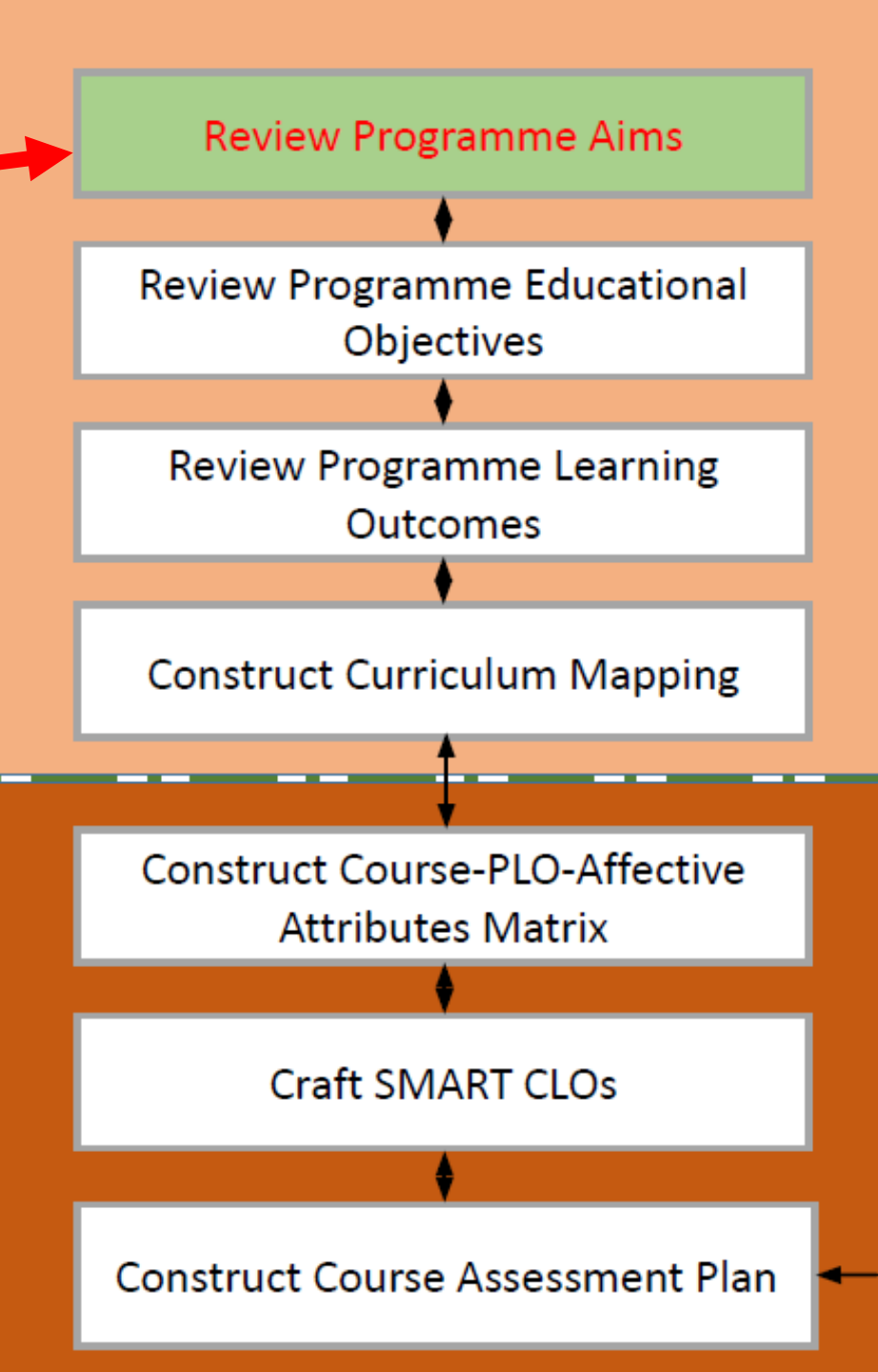
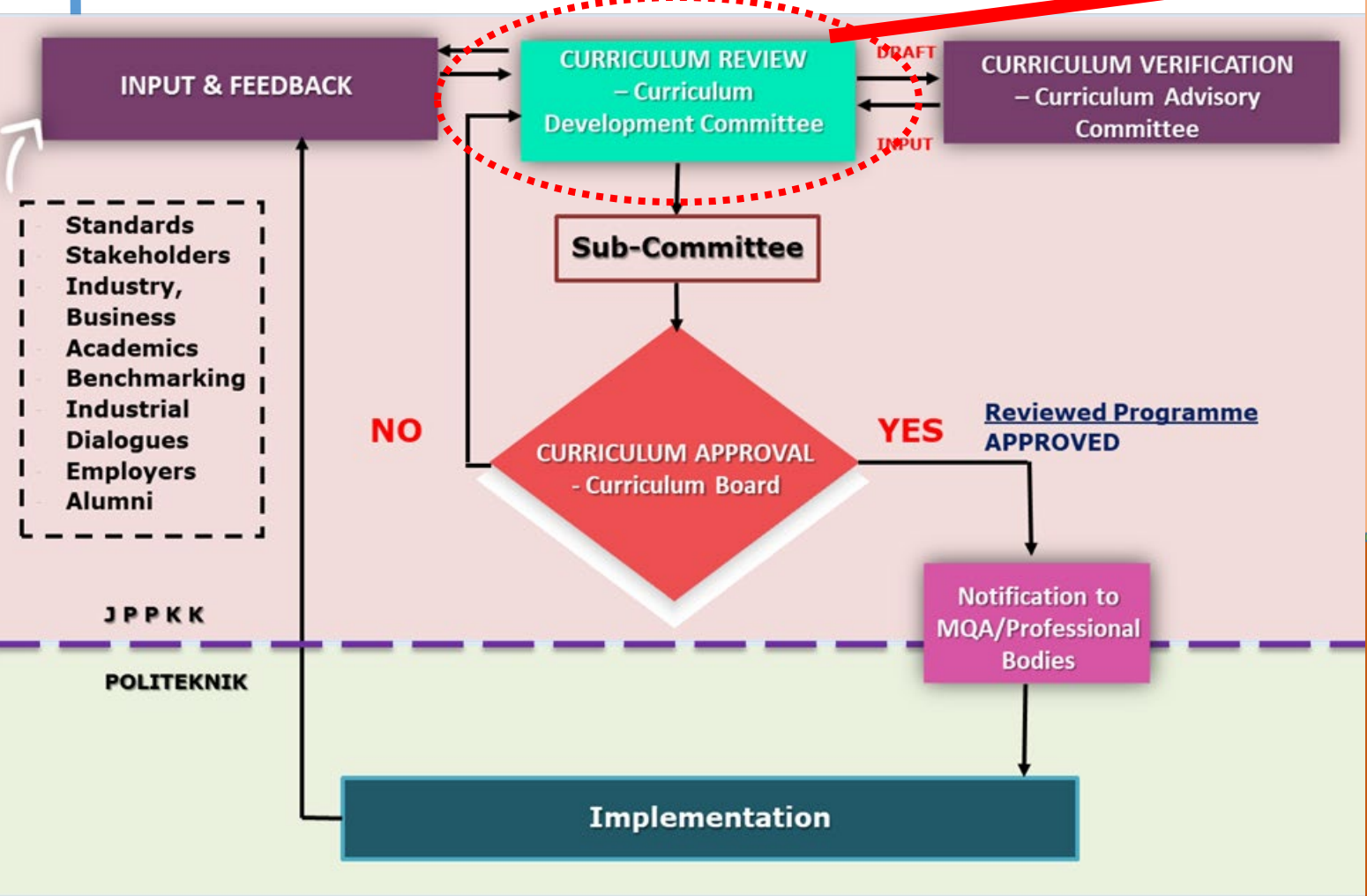
Review curriculum coordinate by UKAAB Nov 2016 – Jun 2019		2016		2017												2018												2019												
Perancah		Nov	Dec	Jan	Feb	Mac	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mac	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mac	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec	
Memaklumkan kepada ahli lembaga berkaitan penambahbaikan berterusan kurikulum bagi program sedia ada di politeknik	Pengurusan Tertinggi (Pengarah & Timbalan Pengarah Unit),BK																																							
Audit Pematuhan Akreditasi baharu bagi program pengajian kejuruteraan & teknologi kejuruteraan di Politeknik Malaysia Oleh Engineering Technology Accreditation Council (ETAC) & Penggunaan Kluster dalam MQA	semua Unit di BK penambahbaikan dokumen sedia ada bagi pematuhan akreditasi ETAC.																																							
Penilaian dokumen sedia ada	Semua Unit di BK																																							
Penyelarasan proses, spesifikasi, format dan skop semak semula kurikulum	UPIK																																							
Pelantikan Jawatankuasa yang melibatkan Penasihat, Penyelaras & Penggubalan kurikulum	Perancangan & pelan tindakan calon bagi semak semula program diploma kejuruteraan di JKA																																							
Perbengkelan dan aktiviti penilaian dan semak semula dokumen sedia ada (Gap Analysis dokumen sedia ada, maklumbalas pemegang taruh, pembangunan PAI, PEO,PLO, Struktur Program, dokumen kursus & dokumen informasi program pengajian																																								
Pemurnian dan verifikasi oleh Jawatankuasa Penasihat & Penyelaras																																								
Semakan oleh Sub Committee dan Penambahbaikan bagi tujuan kelulusan Ahli Lembaga Kurikulum																																								
Kelulusan oleh Lembaga Kurikulum	Pengurusan Tertinggi & semua unit di BK																																							
Pemakluman / pekeliling kurikulum versi Jun 2019 ke Politeknik	UPIK																																							

Perbengkelan bersama penyelarasan & penggubalan bagi pelaksanaan semak semula kurikulum (dokumen kurikulum versi 2019)

**Perbengkelan bersama penyelaras & penggubal bagi pelaksanaan semak semula kurikulum (dokumen kurikulum versi Jun 2019)**

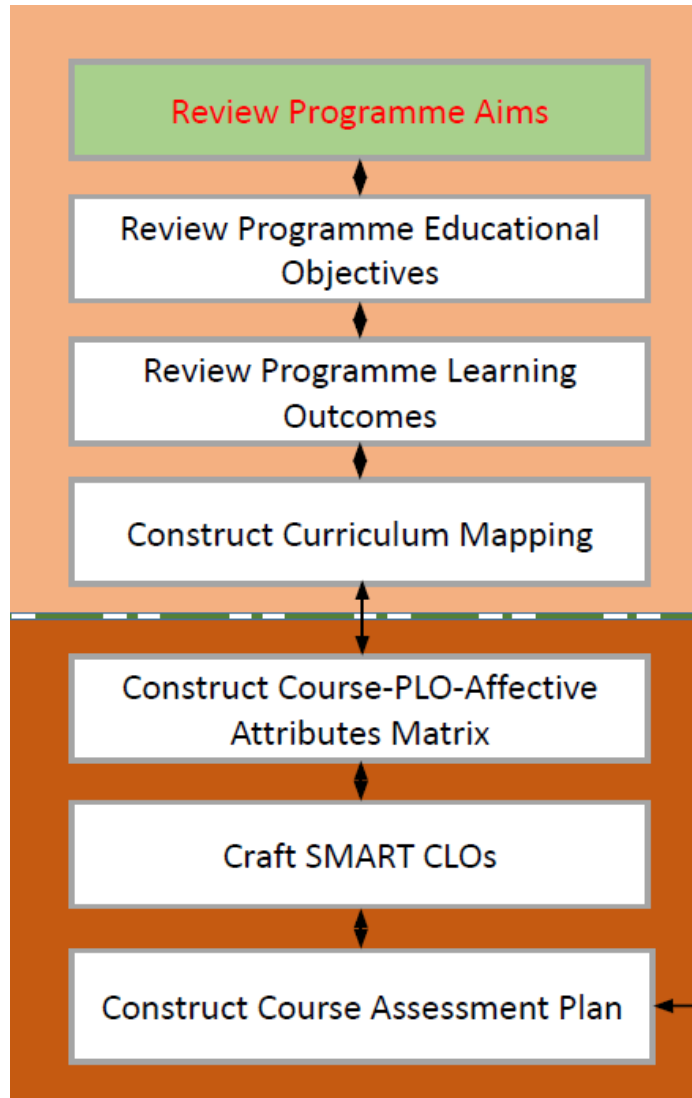
PENYELARASAN PROSES DIPERINGKAT BK BAGI SEMUA PROGRAM

CURRICULUM REVIEW PROCESS



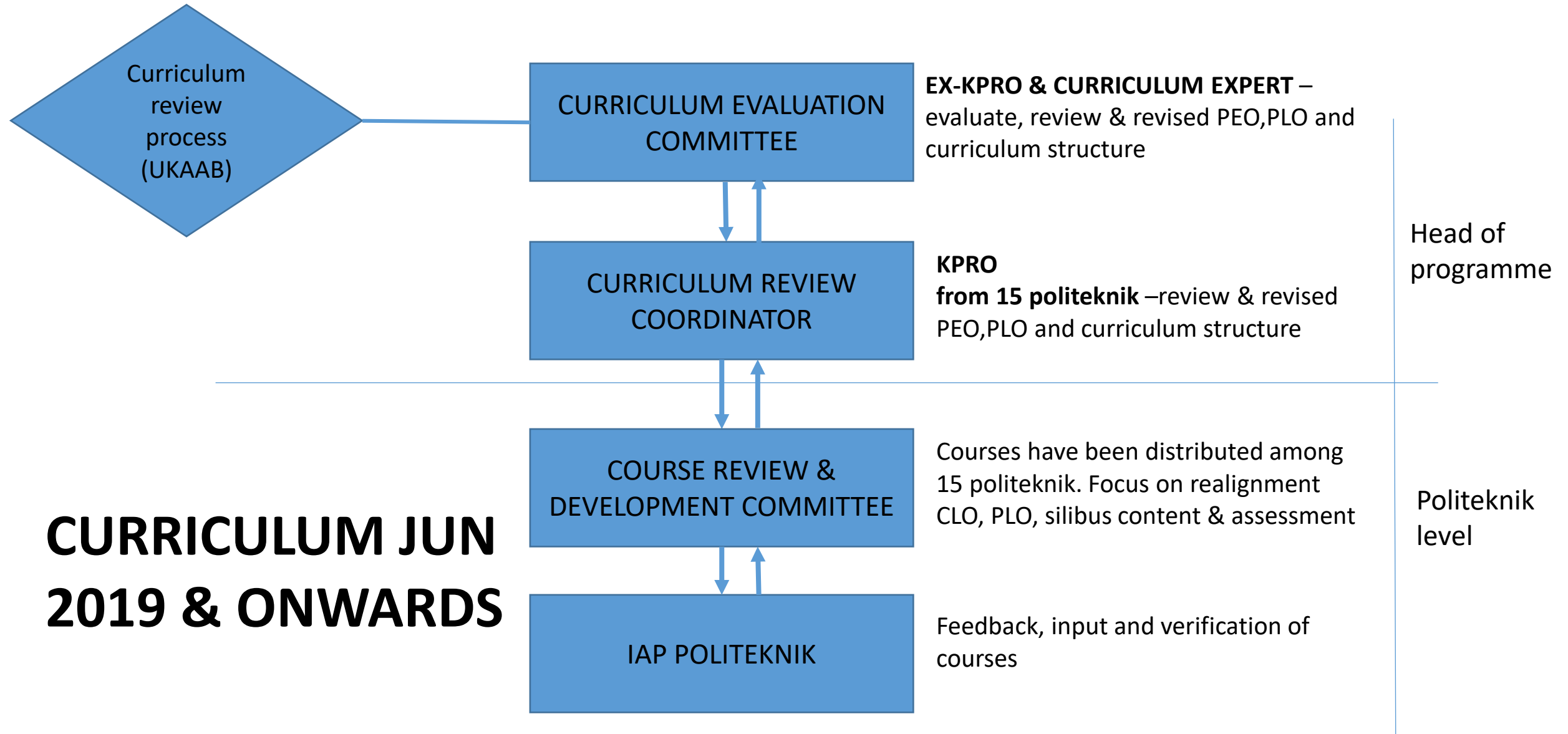


# PENAMBAHBAIKAN PROSES DIPERINGKAT UKAAB BAGI DOKUMEN JUN 2019 & ONWARDS



- 1c1i : 1 kursus 1 industry (minimum requirement)
- Politeknik penyelarasan semakan & pembangunan kursus

Jawatankuasa	fungsi
<b>Penilaian Dokumen Kurikulum</b> (melihat dokumen secara keseluruhan)	Membuat penilaian dan semakan terhadap kurikulum yang telah dibangunkan
<b>Jawatankuasa Penyelarasan Semak Semula Kurikulum</b> (ketua program)	Melaksanakan transformasi kepada dokumen informasi kurikulum (diwakili oleh semua ketua program pengajian DKA, DAS & DPB Politeknik Malaysia)
<b>Jawatankuasa Penggubalan</b> (kursus mengikut politeknik penyelarasan)	Melaksanakan transformasi dokumen kursus (expert content mengikut kursus dan politeknik penyelarasan)







## Perbengkelan bersama penyelarar & penggubal bagi pelaksanaan semak semula kurikulum (dokumen kurikulum versi Jun 2019) politeknik sebagai penyelarar kursus

Aktiviti perbengkelan	JKA Pensyarah	penilaian program	Penyelaras program	Politeknik Penyelaras kursus	Penggubal di politeknik
Makluman semakan bagi tujuan CQI	/				
Penilaian kurikulum Jun 2014		/			
Transformasi program melalui ETAC			/		
Transformasi program ke arah 'constructive alignment'			/		
PEO revised			/		
Struktur program dan pemetaan PLO & LOD			/		
Revised PEO dan struktur program			/		
IAP bagi verifikasi struktur baharu dan dokumen informasi program			/		
Penggubalan dokumen kursus			/	/	/
Verifikasi dokumen kursus				/	/



**BAHAGIAN KURIKULUM  
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI  
KEMENTERIAN PENDIDIKAN MALAYSIA**

**KERTAS KERJA KK(L)01/1M/2019**

**KERTAS KERJA  
KELULUSAN SEMAK  
SEMULA 2019**

**"Kelulusan Kurikulum Versi 2019 bagi Program  
Pendidikan Peringkat Diploma di Politeknik, Kementerian  
Pendidikan Malaysia"**



**MESYUARAT LEMBAGA KURIKULUM KURSUS PENGAJIAN DAN PROGRAM LATIHAN  
DI POLITEKNIK KEMENTERIAN PENDIDIKAN MALAYSIA BIL. 1/2019**

**Kertas Kerja Kelulusan: KK(L)01/1M/2019**

Memohon kelulusan kurikulum versi 2019 bagi program pengajian peringkat diploma di politeknik, Kementerian Pendidikan Malaysia.

**Keputusan:**



**Lulus Penuh**



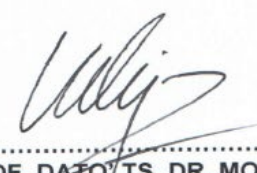
**Lulus Bersyarat**



**Tidak Lulus**

**Ulasan:**

Jawatankuasa penggubal kurikulum perlu memenuhi cadangan-cadangan dari Ahli Lembaga Kurikulum seperti yang dipersetujui. Penambahbaikan ini perlu dibentangkan kepada *subcommittee* dan dimaklumkan kepada Ahli Lembaga Kurikulum.

  
.....  
(YBHG. PROF. DATO' TS. DR. MOHD ISMAIL BIN ABD AZIZ)  
Pengerusi  
Mesyuarat Lembaga Kurikulum Kursus Pengajian dan Program Latihan di Politeknik

# Jumlah kredit bergraduan:

item		DKA	DPB	DAS
compulsory	} Wajid diambil semua jenis pelajar	14	14	14
Common core		10	10	12
Discipline core		54	55	50
LI		10	10	10
elective		4	4	8
Minimum kredit bergraduati		92	93	94
Bahasa kebangsaan	} Wajib bagi pelajar tidak kredit BM SPM	2	2	2
Free elective	} Flexible to Politeknik	2	2	2
Maximum kredit bergraduati		96	97	98

# Surat & Arahan perlaksanaan terhadap dokumen DIS 2018 & JUN 2019

	FASA 1 DIS 2018	FASA 2 JUN 2019
i)PEKELILING DOKUMEN DIS 2018 (UPK)	/	
ii)PEKELILING DOKUMEN JUN 2019 (UPK)		/
iii)PERLAKSANAAN 14 MINGGU TAKWIM (BIPD)		/
iv)TAXONOMY POLITEKNIK (UPK)	/ (bloom)	/(revised bloom)
v)PERLAKSANAAN FREE ELEKTIF (UPK)		/
vi)PERLAKSANAAN KURSUS BAHASA KEBANGSAAN (UPU)		/
vii)PERLAKSANAAN MPU U4 BERKREDIT (UPU)		/
viii)PERLAKSANAAN KURSUS LATIHAN INDUSTRI KEJURUTERAAN 10 KREDIT (engineering industrial training)		/



## Muatnaik dokumen kurikulum



PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI  
PENDIDIKAN MALAYSIA  
4, Jalan P4W  
18, Presint 4  
RAJAYA

Tel : 03-88919000  
Faks : 03-88919058



Ruj. Kami : JPPKK.BK.100-1/3/2 ( 4 )  
Tarikh : 31 MEI 2019

SEPERTI SENARAI EDARAN

YBrs. Dr./ Tuan/ Puan,

**SURAT PEKELILING KURIKULUM BIL. 6 TAHUN 2019 BAGI PELAKSANAAN  
KURIKULUM VERSI JUN 2019 PROGRAM PENGAJIAN PERINGKAT DIPLOMA  
POLITEKNIK KEMENTERIAN PENDIDIKAN MALAYSIA**

Dengan hormatnya saya merujuk kepada perkara di atas.

2. Sukacita dimaklumkan bahawa Mesyuarat Lembaga Kurikulum Kursus Pengajian dan Program Latihan Politeknik (MLK) Bil 1/2019 bertarikh 23 April 2019, telah meluluskan dokumen kurikulum versi Jun 2019 bagi 61 program pengajian peringkat diploma politeknik (seperti di Lampiran 1) bersama-sama dengan kursus-kursus Pengajian Am, Matematik, Sains, Komputer dan Matapelajaran Umum (MPU).

3. Adalah dimaklumkan, pelaksanaan bagi dokumen kurikulum versi Jun 2019 ini akan berkuatkuasa pada pelajar kohort sesi Jun 2019. Manakala bagi pelajar kohort Semester 2 hingga Semester 6 sedia ada akan mengguna pakai dokumen kurikulum versi terdahulu sehingga tamat pengajian. Pelaksanaan penggunaan dokumen kurikulum versi Jun 2019 ini hanya terpakai pada program seperti di Lampiran 1

**Surat pekeliling pelaksanaan kurikulum yang  
disemak semula ke politeknik**

## Interpretasi kurikulum

# TAKLIMAT INTERPRETASI DOKUMEN KURIKULUM VERSI DIS 2018 & JUN 2019 PROGRAM PENGAJIAN KEJURUTERAAN DI JABATAN KEJURUTERAAN AWAM (JKA)



UNIT KEJURUTERAAN AWAM DAN ALAM BINA (UKAAB)  
BAHAGIAN KURIKULUM (BK, JPPKK)  
CRYSTAL CROWN, PETALING JAYA  
7-9 JULAI 2019





Ruj. Kami : JPPKK.BK.100-1/3/2 Jld 2 (23)  
Tarikh : 2 Jun 2020

SEPERTI SENARAI EDARAN

YBrs. Dr./ Tuan/ Puan,

SURAT PEKELILING KURIKULUM BIL. 17 TAHUN 2020 BAGI PELAKSANAAN  
PEMBELAJARAN DAN PENGAJARAN (PdP) SEMASA DAN PASCA PERINTAH  
KAWALAN PERGERAKAN (PKP)

Dengan hormatnya saya merujuk kepada perkara di atas.

2. Sukacita dimaklumkan Mesyuarat Khas Menteri-Menteri Menaenai



PERANCANGAN PEMBELAJARAN DAN PENGAJARAN (PPDP) / STUDY PLAN  
SEKTOR AKADEMIK  
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI

#### NOTA:

- Perancangan PDP ini adalah bersifat 'advisory' kepada institusi dalam merancang dan melaksanakan pengajaran dan pembelajaran. Ianya tertaklik kepada keupayaan atau kesesuaian sumber yang berada di institusi.
- Perancangan PDP ini perlu dibaca bersama dengan dokumen berikut:
  - Dokumen / Panduan Pelaksanaan PDP yang berkaitan daripada JPPKK dan KPT
  - Dokumen kurikulum program sedia ada
- Perancangan PDP ini juga adalah tertaklik dengan arahan atau ketetapan yang dikeluarkan oleh JPPKK, KPT dan pihak berkuasa dari semasa ke semasa.

#### RUJUKAN:

- Panduan Pengendalian Program Pendidikan Tinggi Semasa dan Pasca Perintah Kawalan Pergerakan COVID-19, MQA 29 Mac 2020.
- Panduan Prinsip Pelaksanaan Mengajar-Pembelajaran dan Penilaian Semasa Pandemik Covid-19 (Guiding Principles on Teaching-Learning and Assessment Implementation During Covid-19 Pandemic). Surat dari Lembaga Jurutera Malaysia (BEM) bertarikh: 31 Mac 2020.
- Pengendalian Program Pengajian Dalam Menangani Penularan Wabak Covid-19. Surat daripada Lembaga Teknologi Malaysia (MBOT) bertarikh: 18 Mac 2020.

## MINIT MESYUARAT SEMAK SEMULA COURSE LEARNING OUTCOME (CLO) KURSUS-KURSUS PRAKTIKAL PROGRAM PENGAJIAN DIPLOMA KEJURUTERAAN PERKHIDMATAN BANGUNAN (DPB) POLITEKNIK MALAYSIA BIL 1/2021

Tarikh : 25 Januari 2021  
Masa : 8:00 malam sehingga 10.00 malam  
: Microsoft Teams

### KEHADIRAN

Bil	Nama	
1	Zuraidah binti Ab.Moin	UKAAB, JPPKK
2	Noraimi binti Ahmad	KPro DPB PSAS
3	Sarah Afzan binti Abd Karim	KPro PSA
4	Meor Hisham	
5	Redzuan	

### PERKARA

#### 1.0 UCAPAN URUSEJA

1.1 Urusetia men

Kejuteraan

menyemak s

disesuaikan

dilaksanakan

virtual atau di

19 di Malaysia

1.2 Semakan da

syarat seperti

1.2.1 Menge

Outcome (PLO) yang sama dengan CLO asal kursus

1.2.2 Tiada penambah CLO baharu atau perubahan markah penila

kursus

1.2.3

1.2.4

1.2.5

1.2.6

1.2.7

1.2.8

1.2.9

1.2.10

BIL.	Kursus	Course Learning Outcome (Asal)	Course Learning Outcome (Ubah)	Taxonomy level	PLO
1	FUNDAMENTAL ENVIRONMENTAL LAB (DCN10032)	Determine appropriate analysis to solve problem by using Standard Method for Environment Sampling. (C3,PLO2)	-	C3	PLO2
		Assemble appropriate instrumentation for experimental in laboratory work. (P3,PLO5)	Organize fundamental environmental experimental based on resource and solution/condition	P3	PLO5
		Perform responsibility for own work as a team members to complete laboratory task. (A2, PLO9)			
2	ENGINEERING MATERIAL (DCN20043)	Apply fundamental engineering concept for material in construction work according to Malaysian Standard (MS) and British Standard (BS). (C3, PLO1)			
		Assemble appropriate instrumentation for material in construction work.(P3, PLO5)			

- 1) PENAMBAHBAIKAN CLO DISESUAIKAN  
PEMBELAJARAN SITUASI COVID 19
- 2) STRUKTUR PROGRAM COVID 19

#### 1.0 Ucapan aluan urusetia

1.1 Mesyuarat dimulakan dengan kata-kata aluan urusetia. Urusetia memaklumkan bahawa mesyuarat ini diadakan bagi membincangkan dan menyelaraskan perkara seperti berikut:

- Maklumbalas perubahan *Course Learning Outcomes (CLO)* penilaian praktikal bagi disesuaikan dengan situasi penularan COVID-19 di Malaysia
- Pelaksanaan stuktur program DKA bagi sesi Mac 2021 yang perlu disesuaikan dengan SOP Perintah Kawalan Pergerakan (PKP)
- Status pelaporan interim yang berkaitan fungsi UKAAB (akademik kurikulum)

1.2 Pengesahan minit mesyuarat bil. 1/2021 disahkan tanpa sebarang pindaan

#### 2.0 Maklumbalas perubahan *Course Learning Outcomes (CLO)* penilaian penularan COVID-19 di Malaysia

situasi penilaian secara virtual kalangan pensyarah. Antara itu: dalam pemilihan simulasi dan mana ia adalah sesuatu yang an/idea berkaitan jenis-jenis

dalam dokumen kursus. Ini bertujuan supaya penilaian boleh dilaksanakan secara virtual atau bersemuka (bergantung kepada jenis kursus) namun pelaporan pencapaian PLO masih kekal

2	Kursus-kursus praktikal bersifat <i>fundamental knowledge of civil engineering</i> yang sesuai untuk melaksanakan penilaian/praktikal menggunakan <i>virtual Lab</i> adalah seperti berikut :	<p>Cadangan baharu CLO:</p> <p>CLO 1: <i>Complete experimental measurement using appropriate method and solution accordingly to situation/condition given (P4, PLO 5)</i></p> <p>CLO 2: <i>Identify hazard and safety precaution in experimental activities (A3, PLO 6)</i></p> <p>Penilaian dan pelaksanaan secara virtual dibenarkan dengan terma dan syarat seperti berikut :</p> <p>a) Peralatan rosak/tidak mencukupi atau tiada di politeknik</p> <p>b) Berlakunya penularan penyakit berbahaya seperti COVID 19 atau mana-mana penyakit yang</p>
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TINDAKAN

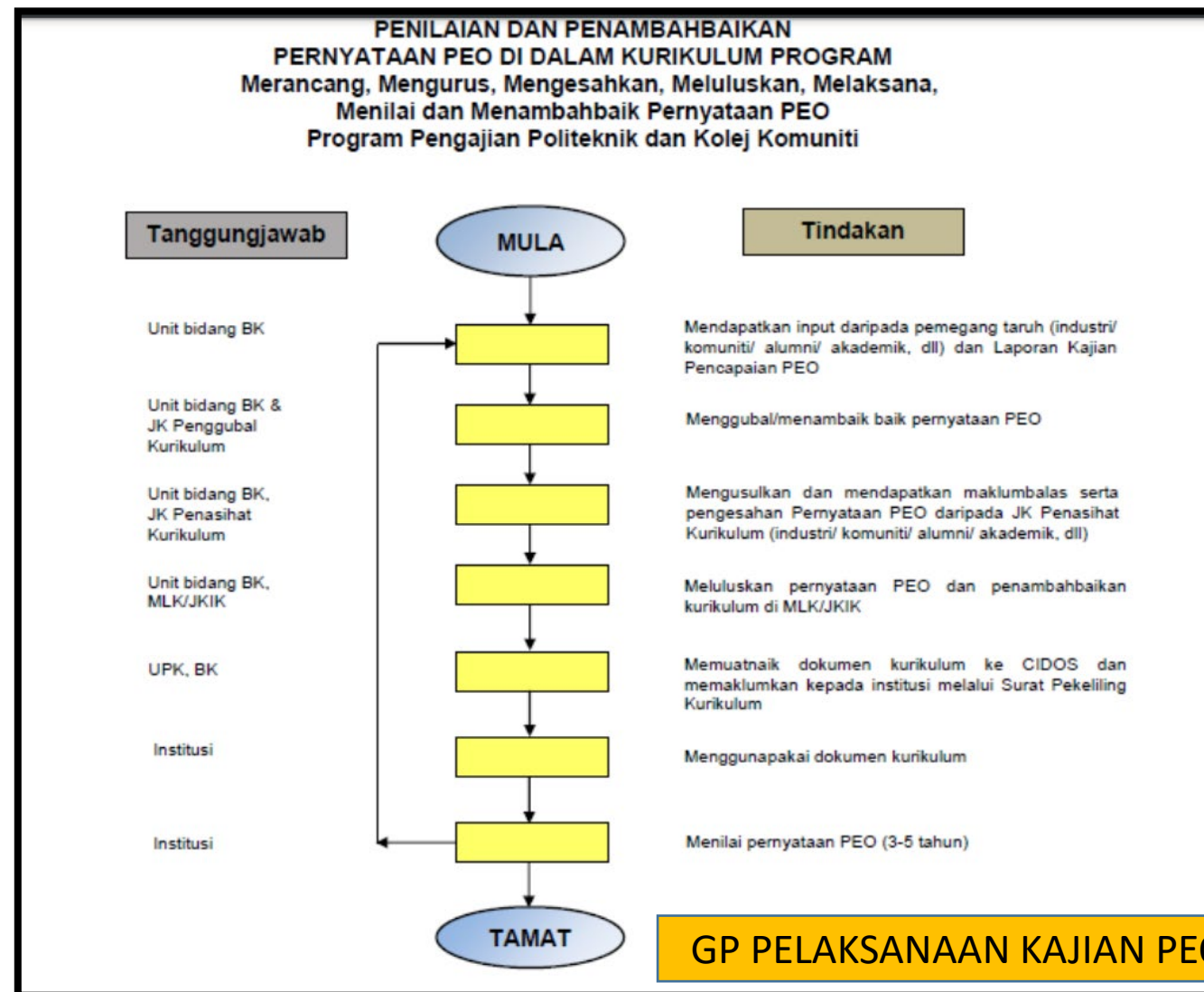
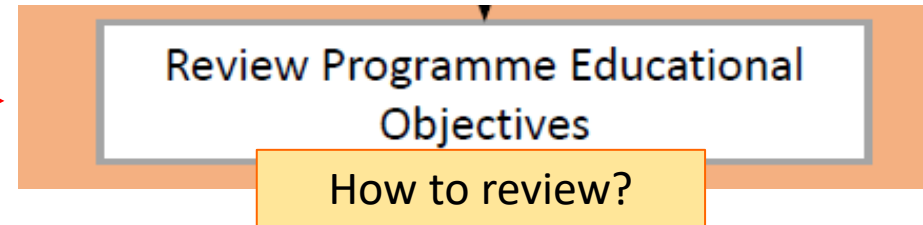
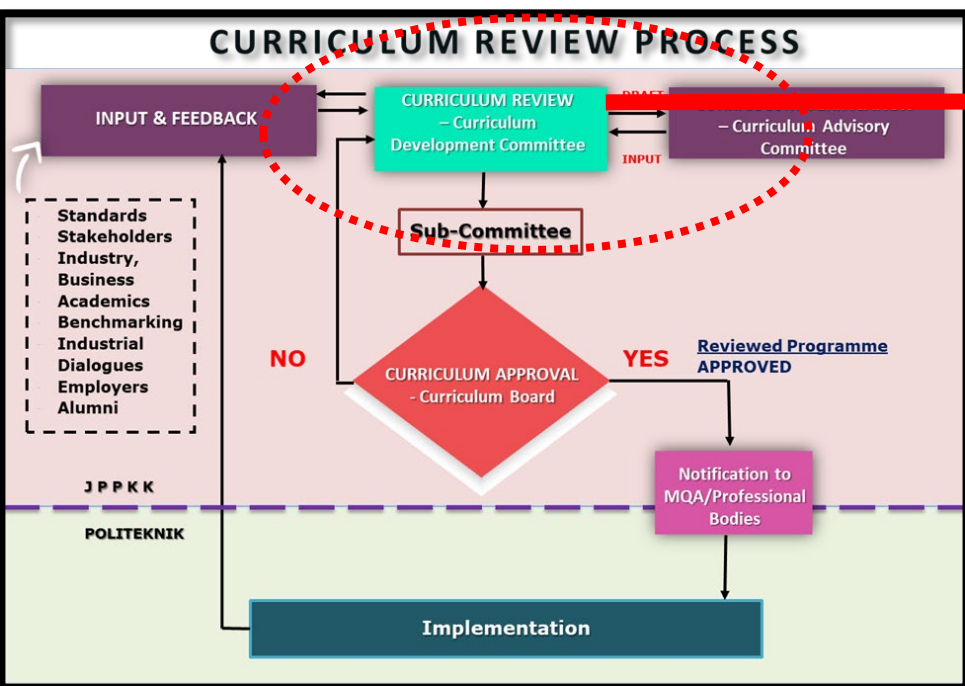
Makluman

## 9.2.2: PROGRAMME EDUCATIONAL OBJECTIVE

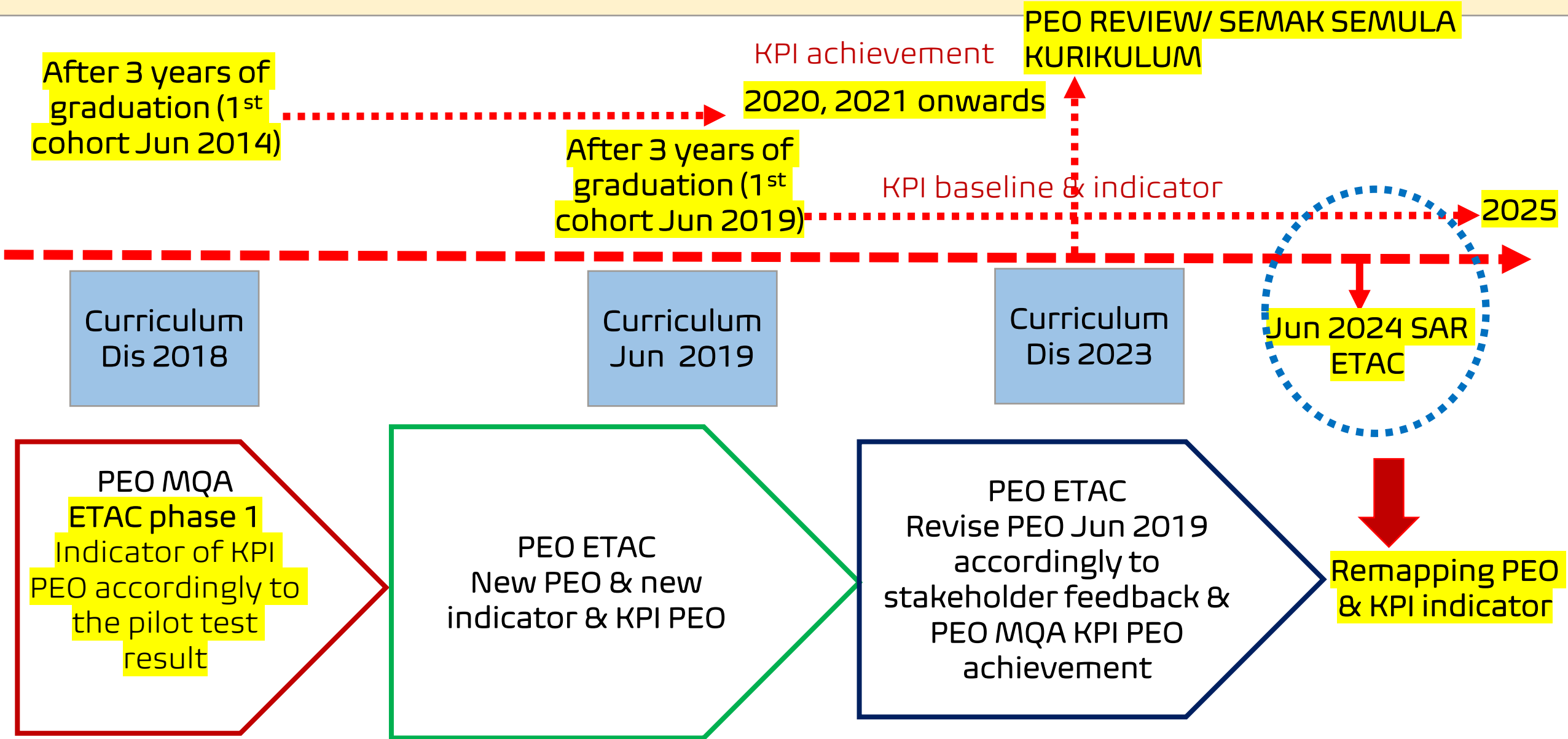
### ETAC REQUIREMENT

i)	State the vision and mission of the IHL/faculty	Mission & vision should align to JPPKK
ii)	Describe the Programme Educational Objectives and state where are they published	1) Describe PEO : explain with indicator accordingly to the vision & mission statement of IHL
iii)	Describe how the Programme Educational Objectives are consistent with the vision and mission of the IHL/faculty and stakeholders requirements.	2) Percentage of each indicator are based on verification/survey with IHL stakeholder requirement
iv)	Describe the processes used to establish the Programme Educational Objectives, and the extent to which the programme's various stakeholders are involved in these processes	1) Process of curriculum review include the PEO establishment 2) State the stakeholder involvement with evidence 3) How they involve/input that used to establish the PEO
v)	Describe the process for the periodic review and revision of these Programme Educational Objectives.	1) Describe Process of periodic review & revision 2) The measurement of PEO with analysis (achievement) 3) Current status of PEO periodic & revision



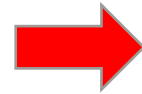


# PEO: TIMELINE & CURRENT STATUS



ii) Describe how the Programme Educational Objectives are consistent with the vision and mission of the IHL/faculty and stakeholders requirements.

iii) Describe the processes used to establish the Programme Educational Objectives, and the extent to which the programme's various stakeholders are involved in these processes



Pembentangan PEO bersama stakeholder/(IAP/IAC/alumni/ee) bagi pengesahan PEO dan KPI PEO mengikut kehendak stakeholder (sediakan borang pengesahan PEO)

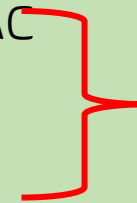
Survey bersama stakeholder:

Industry/IAP/IAC

Alumni

Pelajar

pensyarah

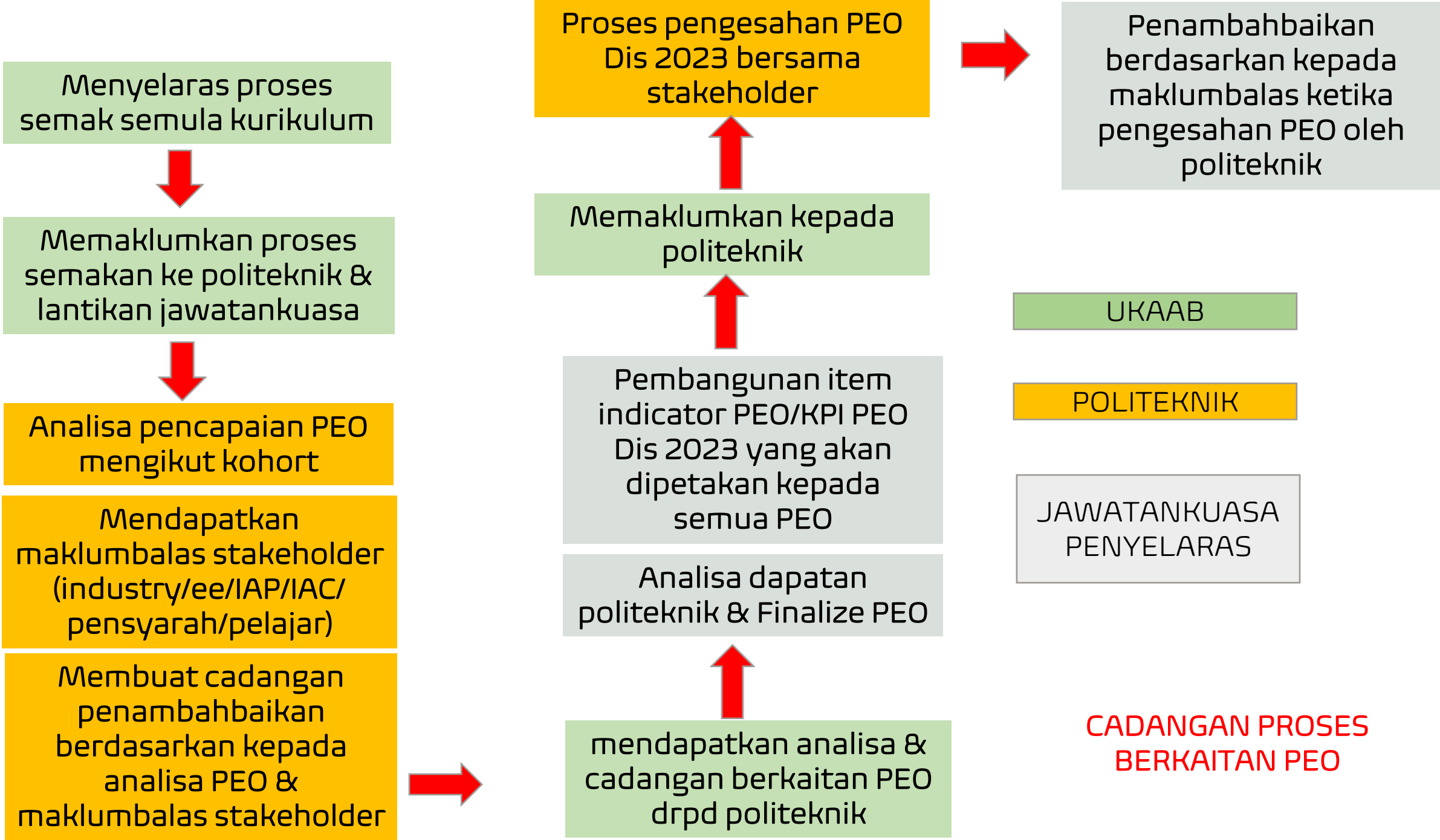


Maklumbalas  
peringkat  
IHL/survey/online  
intv

v) Describe the process for the periodic review and revision of these Programme Educational Objectives.



Proses semak semula PEO – analisa KPI PEO mengikut kohort dan menyemak semula kenyataan PEO.



## CADANGAN PENAMBAHBAIKAN PEO

PEO BASED ON  
CLUSTER PLO  
& 3 PEO  
SAHAJA

### ANALYSIS OF PROBLEMS & SYNTHESIS OF SOLUTIONS

PO1 - ENGINEERING KNOWLEDGE  
(DK1-DK4)  
PO2 - PROBLEM ANALYSIS(DK1-  
DK4)  
PO3 - DESIGN (DK5)  
PO4 - INVESTIGATION  
PO5 - MODERN TOOLS (DK6)



### REQUIRED IN WORKPLACE

PO9 - TEAMWORK  
PO10 - COMMUNICATION  
PO11 - PROJECT  
MANAGEMENT & FINANCE  
PO12 - LIFELONG  
LEARNING



### RESPONSIBILITIES

PO6 - ENGINEERS & SOCIETY (DK7)  
PO7 - ENVIRONMENT &  
SUSTAINABILITY (DK7)  
PO8 - ETHICS (DK7)





# ETAC Manual RECAP

## Programme Educational Objectives

Programme Educational Objectives (PEOs) are **specific goals** consistent with the **mission and vision of the IHL**, are responsive to the **expressed interest of programme stakeholders**, and describe the expected achievements of graduates **in their career and professional life** a few years **after graduation**.

# Criterion 1: PEOs

1. Shall have **published** PEOs
2. PEOs shall be the **basis** upon which the Programme Outcomes (**POs**) (Section 5.0) are formulated
3. Shall have a **clear linkage** between PEOs and POs
4. Important **stakeholders** especially from the **industries** provide inputs in the process of formulating the PEOs
5. Must be a **documented** and effective process, involving programme stakeholders, for the **periodic review and revision** of these PEOs.



# PENYELARASAN PERINGKAT PROGRAM : AKTIVITI 1

- 1) PERANCANGAN TIMELINE BAGI PROSES BERKAITAN PEO & TINDAKAN SETIAP POLITEKNIK
- 2) LANTIK POLITEKNIK PENYELARASAN PEMBANGUNAN INDIKATOR PEO

# ETAC REQUIREMENT PLO

i)	List down the Programme Outcomes and state where are they published.	11 & 12 PLO refer the current curriculum implementation
ii)	Describe how the Programme Outcomes relate to the Programme Educational Objectives	Mapping PLO vs PEO (11 PLO & 12 PLO)
iii)	Describe how the Programme Outcomes encompass the outcome requirements of Section 5.0 of this Standard.	POLY using similar PLO to ETAC
iv)	Describe the processes used to establish and review the Programme Outcomes, and the extent to which the programme's various stakeholders are involved in these processes.	Similar process of PEO
v)	Describe the data gathered and explain the results of the assessment.	Further discussion
vi)	Explain how the assessment results are applied to further develop and improve the programme.	
vii)	Describe the materials, including student work and other tangible materials that demonstrate achievement of the Programme Outcomes.	

v) Describe the data gathered and explain the results of the assessment.

OBE MODEL FOR  
ATTAINMENT

FLOW PROCESS  
FROM 1 STUDENT/1  
COURSES TO 1  
COHORT DATA  
GATHERED

SAMPLE OF  
ATTAINMENT  
CALCULATION

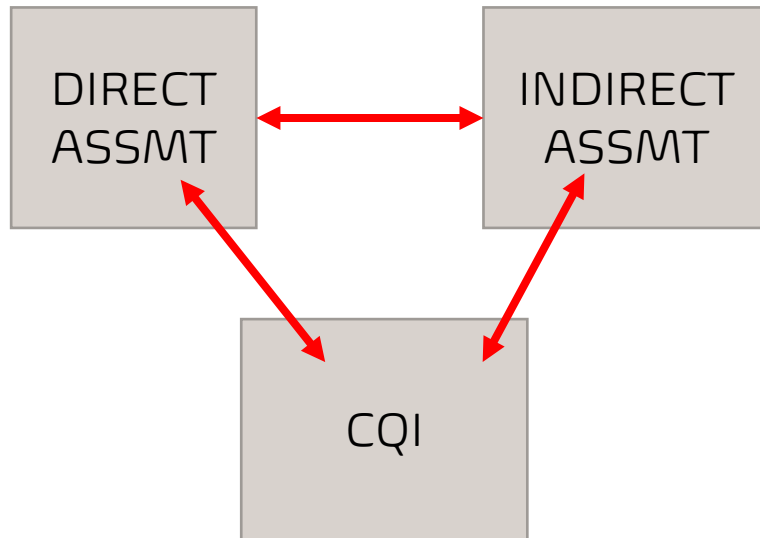
Describe the implemented Outcomes-Based Education (OBE) model with description of the definition, the established processes to deliver, process to assess (the model adopted in 'calculating' the PO achievement, e.g. 'every course, every semester, 'anchor or culminating courses model' or 'every student model or sampling model' etc.), performance target/model to determine the achievement of all the POs by students, the established process to use the results for the CQI both at the courses and harmonised holistically at programme levels, and the established OBE and CQI of PEO and PO management system, etc

PROGRAM INFO  
COURSE INFO  
(CLI/ASSMT/SLYBUS/SLT)  
CAT (DP/DK/NA)  
FIEST (EXAM)  
RUBRIC

SPMP  
ISOLM  
IEXAM

CLORR  
PLORR  
S3P

vi) Explain how the assessment results are applied to further develop and improve the programme.



Describe the real assessment and evaluation of students achievements for each of the 12 ETAC POs explicitly (PO by PO); directly (as the primary evidences through examinations, projects, laboratory reports, presentations, etc.) and indirectly (for triangulation through self-assessment via exit survey, etc.) with critical self-assessment of the results/findings. Please include the Strengths (S), Weaknesses (W), Threats (T) and Opportunities (O) analysis. Describe the use of assessment and evaluation results in the CQI processes and the impact of the intervention in improving the processes to deliver and assess to enhance the achievement of the POs by the students. The POs shall be shown harmonised holistically at the programme level (from the relevant chosen courses) and has driven continual improvement of the programme

vii) Describe the materials, including student work and other tangible materials that demonstrate achievement of the Programme Outcomes.

Provide the evidences - materials, including students' work and other tangible materials such as minutes of meetings, etc. that can demonstrate involvement of the stakeholders in the process of formulating and reviewing the POs statements; and in the process of implementing, delivering, assessing, and improving the achievements of the POs. The achievement of the POs by the students (especially the graduating cohorts) shall also be substantiated with evidences, such as providing portfolios for each of the 12 ETAC POs explicitly (one by one). Students' portfolios demonstrating every PO is highly encourage

## Activity 2 : Discussion on item v, vi & vii (PLO)

Bincang & selaraskan  
summary of v, vi & vii



## INTERNATIONAL ENGINEERING ALLIANCE

### GRADUATE ATTRIBUTES & PROFESSIONAL COMPETENCIES

PROUDLY SUPPORTED BY:



The International Engineering Alliance is pleased to announce that all Accords and Agreements have approved revisions to its Graduate Attributes and Professional Competencies (GAPC) international benchmark. The review, supported by UNESCO, was undertaken by a joint IEA-WFEO Working Group who engaged extensively with IEA signatories, WFEO members and WFEO partners representing academics, industry and women globally. They reflect requirements for new technologies and engineering disciplines, new pedagogies and values such as sustainable development, diversity and inclusion and ethics. They are well positioned to support the engineering role in building a more sustainable and equitable world.

VERSION: 2021.1 The documents presented in this compendium are current as of 21 June 2021.



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RELATIONSHIP OF PLO WITH DK/DP/NA

Graduate Attribute / PLO

&

Characteristics of Well-defined  
Engineering Problem (DP), Well-defined  
Engineering Activities (NA) & Knowledge  
Profile (DK)

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# GRADUATE ATTRIBUTES P01-P011

P0	Keywords/Characteristics		DK	DP/ NA
P01	Knowledge	Apply knowledge of applied mathematics, applied science, engineering fundamentals and an engineering specialization as specified in <b>DK1 to DK4</b> respectively to wide practical procedures and practices;	DK1: Natural Sciences DK2: Mathematics DK3: Engineering Fundamental DK4: Specialist Knowledge	DP
DA1	Knowledge	Apply knowledge of mathematics, natural science, engineering fundamentals and an engineering specialization as specified in <b>DK1 to DK4</b> respectively to wide practical procedures and practices.	DK1: Natural Sciences DK2: Mathematics DK3: Engineering Fundamental DK4: Specialist Knowledge	DP
P02	Problem Analysis	Identify and analyze <b>well-defined engineering problems</b> reaching substantiated conclusions using codified methods of analysis specific to their field of activity ( <b>DK1 to DK4</b> );	DK1: Natural Sciences DK2: Mathematics DK3: Engineering Fundamental DK4: Specialist Knowledge	DP
DA2	Problem Analysis	Identify and analyze <b>well-defined engineering problems</b> reaching substantiated conclusions using codified methods of analysis specific to their field of activity. ( <b>DK1 to DK4</b> )	DK1: Natural Sciences DK2: Mathematics DK3: Engineering Fundamental DK4: Specialist Knowledge	DP

# GRADUATE ATTRIBUTES P01-P011

PO	Keywords/Characteristics		DK	DP/ NA
P03	Design/ Development of Solutions	Design solutions for <b>well-defined technical problems</b> and assist with the design of systems, components or processes to meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations ( <b>DK5</b> );	DK5: Engineering Design	DP
DA3	Design/ Development of Solutions	Design solutions for <b>well-defined technical problems</b> and assist with the design of systems, components or processes to meet specified needs with appropriate consideration for public health and safety as well as cultural, societal, and environmental considerations as required ( <b>DK5</b> )	DK5: Engineering Design	DP
P04	Investigation	Investigation: Conduct investigations of <b>well-defined problems</b> ; locate and search relevant codes and catalogues, conduct standard tests and measurements;	-	DP
DA4	Investigation	Conduct investigations of <b>well-defined problems</b> ; locate and search relevant codes and catalogues, conduct standard tests and measurements as required ( <b>DK8</b> );	DK8 : Technological literature	DP

# GRADUATE ATTRIBUTES P01-P011

P0		Characteristics	DK	DP/ NA
P05	Modern Tool Usage	Apply appropriate techniques, resources, and modern engineering and IT tools to <b>well-defined engineering problems</b> , with an awareness of the limitations ( <b>DK6</b> );	DK6: Practical Engineering Knowledge	DP
DA5	Tool Usage	Apply appropriate techniques, resources, and modern computing, engineering, and IT tools to <b>well-defined engineering problems</b> , with an awareness of the limitations. ( <b>DK2 and DK6</b> )	DK6: Practical Engineering Knowledge DK2: Mathematics	DP
P06	The Engineer and Society	Demonstrate knowledge of the societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to engineering technician practice and solutions to <b>well-defined engineering problems</b> ( <b>DK7</b> );	DK7: Knowledge of Issues And Approaches	DP
DA6	The Engineer and Society	When <b>solving well-defined engineering problems</b> , evaluate sustainable development impacts* to: society, the economy, sustainability, health and safety, legal frameworks, and the environment ( <b>DK1, DK5, and DK7</b> )	DK7: Knowledge of Issues And Approaches DK5: Engineering Design DK1: Natural Sciences	DP

# GRADUATE ATTRIBUTES P01-P011

P0		Characteristics	DK	DP/ NA
P07	Environment and Sustainability	Understand and evaluate the sustainability and impact of engineering technician work in the solution of <b>well-defined engineering problems</b> in societal and environmental contexts ( <b>DK7</b> );	DK7: Knowledge of Issues And Approaches	DP
P08	Ethics	Ethics: Understand and commit to professional ethics and responsibilities and norms of technician practice ( <b>DK7</b> );	DK7: Knowledge of Issues And Approaches	–
DA7	Ethics	Understand and commit to professional ethics and norms of technician practice including compliance with relevant laws. Demonstrate an understanding of the need for diversity and inclusion ( <b>DK9</b> )	DK9 : Ethics, inclusive behavior and conduct	–

# GRADUATE ATTRIBUTES P01-P011

P0	Characteristics		DK	DP/ NA
P09	Individual and Team work	Function effectively as an individual, and as a member in diverse technical teams;	-	-
DA8	Individual and Team work	Function effectively as an individual, and as a member or leader in diverse and inclusive teams and in multi-disciplinary, face-to-face, remote and distributed settings (DK9)	DK9 : Ethics, inclusive behavior and conduct	
P010	Communication	Communicate effectively on well-defined engineering activities with the engineering community and with society at large, by being able to comprehend the work of others, document their own work, and give and receive clear instructions;	-	NA
DA9	Communication	Communicate effectively and inclusively on well-defined engineering activities with the engineering community and with society at large, by being able to comprehend the work of others, document their own work, and give and receive clear instructions	-	NA



# GRADUATE ATTRIBUTES P01-P011

PO	Characteristics		DK	DP/ NA
P011	Project Management and Finance	Demonstrate knowledge and understanding of engineering management principles and apply these to one's own work, as a member or leader in a technical team and to manage projects in multidisciplinary environments;	-	-
DA10	Project Management and Finance	Demonstrate awareness of engineering management principles as a member or leader in a technical team and to manage projects in multidisciplinary environments	-	-
P012	Lifelong learning	Recognize the need for, and have the ability to engage in independent updating in the context of specialized technical knowledge;	-	-
DA11	Lifelong learning	Recognize the need for, and have the ability for independent updating in the face of specialized technical knowledge (DK8)	DK8 : Technological literature	-

**DK1** : A descriptive, formula-based understanding of the **natural sciences** applicable in a sub-discipline

**DK2** : Procedural **mathematics**, numerical analysis, statistics applicable in a subdiscipline

**DK3** : A coherent procedural formulation of **engineering fundamentals** required in an accepted sub- discipline

**DK4** : Engineering **specialist knowledge** that provides the body of knowledge for an accepted sub- discipline

**DK5** : Knowledge that supports **engineering design** based on the techniques and procedures of a practice area

**DK6** : Codified **practical engineering knowledge** in recognised practice area

**DK7** : **Knowledge of issues and approaches** in engineering technician practice: ethics, financial, cultural, environmental and sustainability impacts

**DK8**: Engagement with the current **technological literature** of the practice area

**DK9**: **Ethics, inclusive behavior and conduct**. Knowledge of professional ethics, responsibilities, and norms of engineering practice. Awareness of the need for diversity by reason of ethnicity, gender, age, physical ability etc. with mutual understanding and respect, and of inclusive attitudes

# Dublin Well-Defined Problem Solving

**DP- WELL-DEFINED ENGINEERING PROBLEM**  
**(HAVE CHARACTERISTIC (DP1) AND SOME OR ALL OF DP2 TO DP7)**  
**DP1 + 2 DP**

DP telah ditetapkan melalui pernyataan PLO ETAC (refer Manual ETAC 2020)

No.	Attribute	Well-defined problems (have characteristic DP1 and some or all of DP2 to DP7)
1	Depth of Knowledge Required	DP1 Cannot be resolved without extensive practical knowledge as reflected in DK5 and DK6 supported by theoretical knowledge defined in DK3 and DK4
2	Range of conflicting requirements	DP2: Involve several issues, but with few of these exerting conflicting constraints
3	Depth of analysis required	DP3: Can be solved in standardised ways
4	Familiarity of issues	DP4: Are frequently encountered and thus familiar to most practitioners in the practice area
5	Extent of applicable codes	DP5: Are encompassed by standards and/or documented codes of practice
6	Extent of stakeholder involvement and level of conflicting requirements	DP6: Involve a limited range of stakeholders with differing needs
7	Interdependence	DP7: Are discrete components of engineering systems

No.	Attribute	Well-defined activities
1	Preamble	Well-defined activities means (engineering) activities or projects that have <b>some or all</b> of the following characteristics:
2	Range of resources	NA1: Involve a limited range of resources (and for this purpose resources includes people, money, equipment, materials, information and technologies)
3	Level of interactions	NA2: Require resolution of interactions between limited technical and engineering issues with little or no impact of wider issues
4	Innovation	NA3: Involve the use of existing materials techniques, or processes in modified or new ways
5	Consequences to society and the environment	NA4: Have consequences that are locally important and not far-reaching
6	Familiarity	NA5: Require a knowledge of practical procedures and practices for widely-applied operations and processes

## Well-defined Engineering Activities (NA)

### PO10:

Communicate effectively on **well-defined engineering activities** with the engineering community and with society at large, by being able to comprehend the work of others, document their own work, and give and receive clear instructions;

PO ETAC	TECHNICIAN GRADUATES - Well-Defined Engineering Problems/Activities		Hubungkait Antara PO ETAC – DK/DP/NA
	DA-DK's	DP/NA	
1. Engineering Knowledge	DK1-DK4	DP	REFER TO PO STATEMENT IN ETAC MANUAL : <b>well-defined problem</b> have been stated to the PO 2, P03, PO 4,P05, P06, P07
2. Problem Analysis	DK1-DK4	DP	
3. Design/Development of Solutions	DK5	DP	
4. Investigation	DK8	DP	
5. Modern Tool Usage	DK2,DK6	DP	
6. The Engineer and Society	DK1, DK5,DK7	DP	
7. Ethics	DK9		
8. Individual and Team work	DK9		
9. Communication		NA	
10. Project Management and Finance			
11. Lifelong Learning	DK8		

# HUBUNGKAIT SILIBUS, PENILAIAN & RUBRIK ETAC

DK

- ✓ Menggunakan knowledge profile (DK) sebagai asas pengetahuan yang telah ditetapkan dalam beberapa PLO ETAC untuk tujuan pencapaian pelajar.
- ✓ Dapat dilihat di dalam silibus, helaian amali, nota, item penilaian

DP

- ✓ Memastikan kriteria berasaskan kepada well-defined engineering problem (DP) dinilai didalam skala /attribute rubrik dan penilaian pelajar
- ✓ Dapat dilihat pada item penilaian, rubrik, helaian amali

NA

- ✓ Memastikan PLO10 (Communication) mengukur kriteria berasaskan kepada well-defined engineering activities (NA)



### AKTIVITI 3 : THE GAP OF 12 & 11 PLO

COURSE	LIST OF CLO	ASSESSMENT		REALIGNMENT
			PLO 5 ETAC 2020 PLO 5 EIA 2021	

ISIKAN JADUAL DGN CLO DAN ASSESSMENT MENGIKUT KURSUS.  
KUMPULKAN SEMUA CLO YANG DIPETAKAN KEPADA PLO YG SAMA



02 Results from last year

# Growth by sector



# Growth by sector

	Q1	Q2	Q3	Q4
Series 1	4.3	2.5	3.5	4.5
Series 2	2.4	4.4	1.8	2.8
Series 3	2	2	3	5

## 1.1 Pernyataan Matlamat, Objektif dan Hasil Pembelajaran Program

Matlamat, objektif dan hasil pembelajaran sesuatu program menggambarkan apa yang perlu dicapai oleh pelajar.

Adalah penting, tujuan, matlamat dan hasil pembelajaran ini disebar luas dengan jelas kepada pelajar dan pihak berkepentingan yang lain.

### 1.1.1 Standard Asas

- Program **wajib** mentakrif matlamat, objektif dan hasil pembelajaran, dan memastikan ia diketahui oleh pihak berkepentingan dalaman mahupun luaran.
- Objektif program **wajib** menggambarkan elemen-elemen utama hasil pendidikan tinggi yang sejajar dengan kemajuan kebangsaan mahupun antarabangsa.
- Matlamat, objektif dan hasil pembelajaran program **wajib** digubal melalui perundingan dengan pihak berkepentingan utama termasuk staf akademik.
- Matlamat, objektif dan hasil pembelajaran program **wajib** konsisten, di samping menyokong visi dan misi berkenaan.

### 1.1.2 Standard Tinggi

- Matlamat, objektif dan hasil pembelajaran program **patut** merangkumi kualiti-kualiti yang berhubung tanggungjawab kemasyarakatan, penyelidikan dan pencapaian kesarjanaan, penglibatan masyarakat, nilai-nilai etika, profesionalisme dan penciptaan ilmu.
- Pihak berkepentingan yang berkaitan, khususnya bakal majikan, **patut** dijemput berunding semasa matlamat dan objektif program digubal.
- Matlamat, objektif dan hasil pembelajaran program **patut** disemak dari semasa ke semasa melalui perundingan dengan seramai mungkin pihak





Contoso was great to work with. Patrice was my representative and she anticipated my needs and worked diligently to fix my issue.

A satisfied customer

# 03 Team

Ana  
CFO



Larissa  
CFO



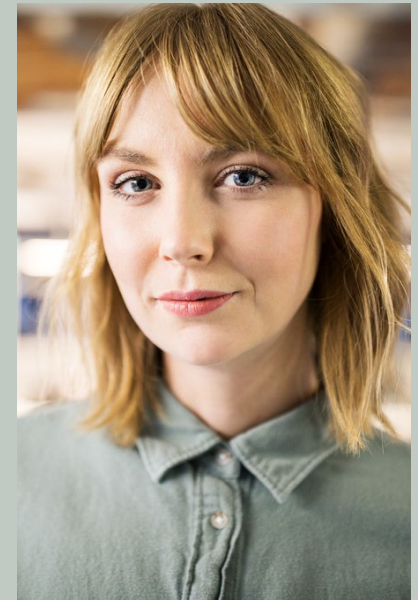
Roman  
CTO



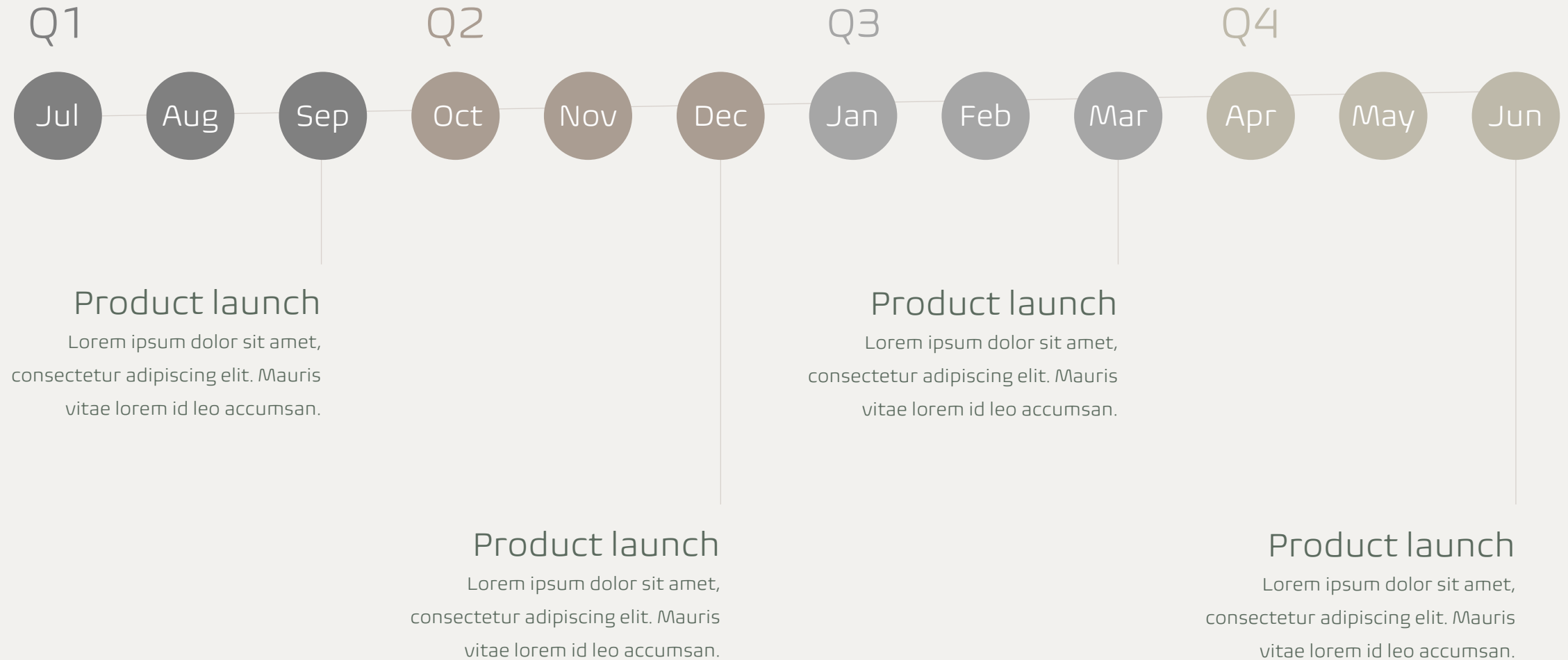
Federico  
COO



Alejandra  
CPO



# Monthly timeline



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# Goals for Q1



## Employee opportunities

- End of fiscal celebration on July 15<sup>th</sup>
- Employee day of learning on August 14<sup>th</sup>
- Employee Yoga on September 3<sup>rd</sup>
- Seminar series begins September 10<sup>th</sup>

## Business priorities

- Increase customer satisfaction by 2%
- Maintain growth
- Initiative partnership with 3<sup>rd</sup> party organizations



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# Goals for Q2



## Business priorities

- Increase customer satisfaction by 2%
- Maintain growth

## Added priorities

- Improve our social media presence
- Ensure the cost of development stays below budget

## Employee opportunities

- Interns begin
- Indoor rec leagues
- Chess tournaments
- Big Game watching party

04  
What's next



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# Summary

Our business is good

Profits are up in the last quarter by 3%

We're getting our work done

We finished the consolidation project

We're delivering for our customers

Customer satisfaction increased from 70 to 80%

Our customers keep coming back

We increased customer retention by 4%

We're leaders

We are top leaders in the industry across the board

Our team is growing

We welcomed 3 new team members last quarter

# 05 Closing

Thanks to your commitment and strong work ethic, we know next year will be even better than the last.

We look forward to working together.

Ana

[sales@contoso.com](mailto:sales@contoso.com)

