UTM
UNIVERSITI TEKNOLOGI MALAYSIA

ASCEND 2030

Pelaksanaan *Value-Based Education* (VBE) dalam Kurikulum UTM

Infuse, Embed, Integrate — Berasaskan Adab & ISES

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Innovating Sustainable Solutions

VBE BUKAN LAGI PILIHAN

Garis Panduan Pelaksanaan Value-Based Education (VBE) UTM disediakan bagi memudahkan pelaksanaan VBE di UTM dengan GVBE 2026 sebagai rujukan.

PENGUATKUASAAN MQA

1 Ogos 2026

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(9 Januari 2026)

Innovating Sustainable Solutions

Tahap Pelaksanaan VBE

TAHAP 1

Infuse

Nilai diperkenalkan secara ringkas dalam aktiviti atau kuliah, tanpa penerapan secara mendalam.

TAHAP 2

Embed

Nilai dinyatakan dengan jelas sebagai kriteria dalam tugasan dan rubrik.

SATU ATAU KEDUA-DUANYA

TAHAP 3

Integrate

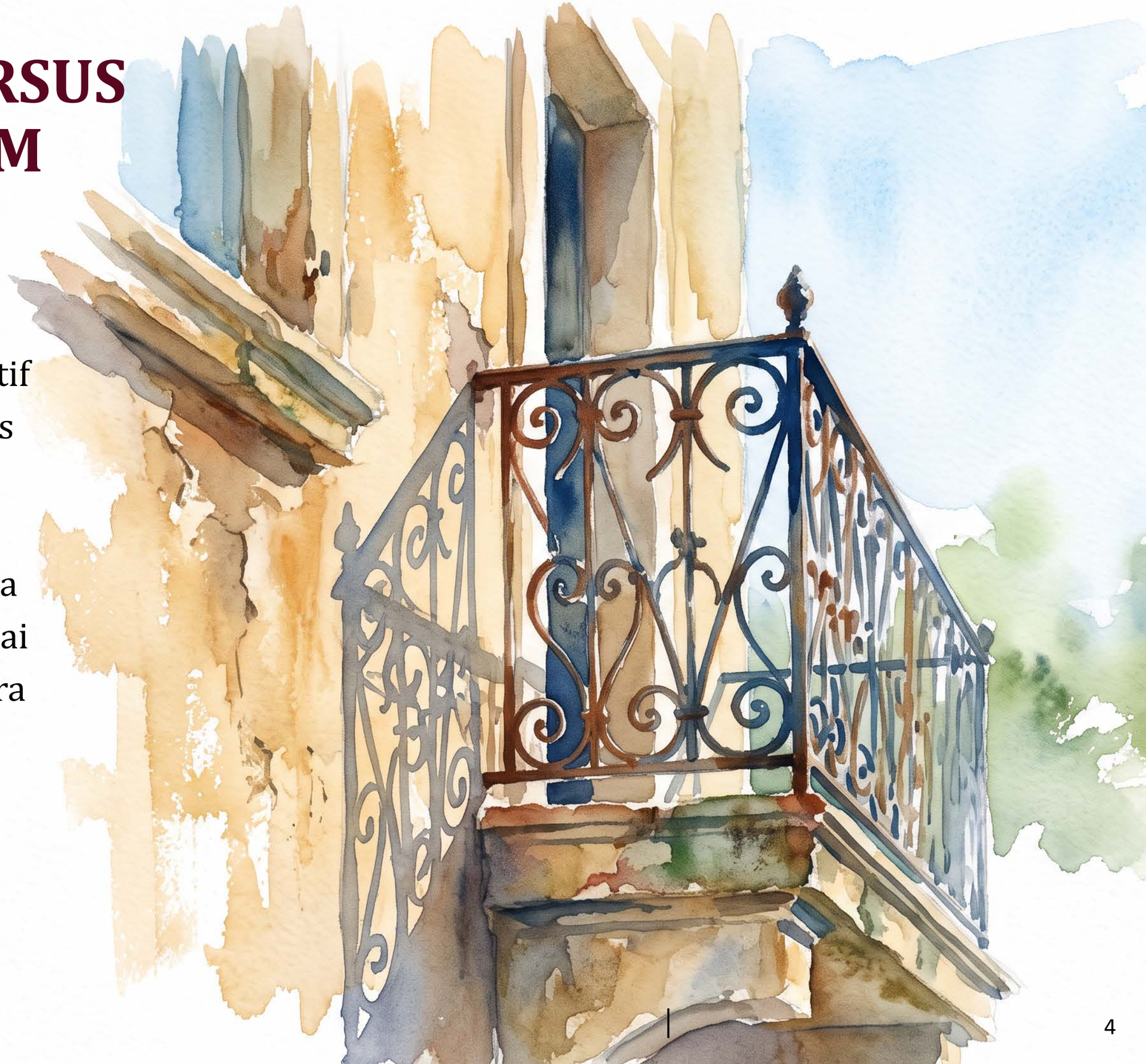
Nilai dijajarkan secara sistematik merentas kursus dalam kurikulum program.

SATU ATAU KEDUA-DUANYA

Fakulti boleh melaksanakan Tahap 2, Tahap 3 atau kedua-duanya mengikut keperluan. Nilai hendaklah dinyatakan sama ada dalam CLO, kriteria tugasan atau rubrik.

DUA KURSUS MINIMUM

Sekurang-kurangnya dua kursus boleh terdiri daripada kursus teras, kursus elektif atau gabungan kedua-duanya. Jika kursus elektif digunakan, pemetaan Nilai Teras UTM hendaklah konsisten bagi semua kursus elektif dalam kelompok yang sama supaya setiap pelajar tetap memenuhi Nilai Teras UTM yang ditetapkan, tanpa mengira kursus elektif yang dipilih.



Nilai Teras UTM

Integriti

Definisi Operasi

Kelakuan yang wajar dalam menunaikan amanah, dengan tanggungjawab sebagai asas dalam melaksanakan setiap tugas.

Sub-Nilai

- *Amanah;*
- *Tanggungjawab;*
- *Akauntabiliti;*
- *Kejujuran;*
- *Kelakuan Wajar*

Sinergi

Definisi Operasi

Adab terhadap sesama manusia melalui pengiktirafan terhadap hierarki organisasi dan peranan setiap peringkat dalam kerja berpasukan yang menggalakkan kerjasama.

Sub-Nilai

- *Kerjasama;*
- *Kerja Berpasukan;*
- *Saling Menghormati;*
- *Keterangkuman;*
- *Tanggungjawab Bersama*

Kecemerlangan

Definisi Operasi

Adab terhadap ilmu dengan meletakkan ilmu pada tempat yang sewajarnya dalam meningkatkan kewibawaan dan kredibiliti berasaskan ilmu.

Sub-Nilai

- *Menghormati Ilmu;*
- *Kredibiliti;*
- *Kewibawaan Berasaskan Ilmu;*
- *Kualiti;*
- *Penambahbaikan Berterusan*

Kelestarian

Definisi Operasi

Adab terhadap alam dan organisasi melalui kesedaran bahawa alam merupakan suatu ekosistem yang perlu dipelihara, bukan dimanipulasi, demi kelangsungan kehidupan sejagat.

Sub-Nilai

- *Pemuliharaan;*
- *Penjagaan;*
- *Kesedaran Alam Sekitar;*
- *Tanggungjawab Organisasi;*
- *Kesinambungan Jangka Panjang*

Adab menjadi asas pelaksanaan Nilai Teras UTM.

Nilai Teras UTM

Integrity

Operational Definition

Proper conduct in fulfilling a trust, with responsibility as the foundation of any given task.

Sub-Values

- *Trust;*
- *Responsibility;*
- *Accountability;*
- *Honesty;*
- *Proper Conduct;*

Synergy

Operational Definition

Adab towards fellow humans, through recognition of organizational hierarchy and the role of all levels in teamwork that fosters collegiality.

Sub-Values

- *Collegiality;*
- *Teamwork;*
- *Mutual Respect;*
- *Inclusivity;*
- *Shared Responsibility;*

Excellence

Operational Definition

Adab towards knowledge, by placing knowledge in its rightful place in the elevation of authority and credibility based on knowledge.

Sub-Values

- *Respect for Knowledge;*
- *Credibility;*
- *Authority based on Knowledge;*
- *Quality;*
- *Continuous Improvement*

Sustainability

Operational Definition

Adab towards nature and the organization, through the recognition that nature is an ecosystem to be preserved rather than manipulated, for the continuity of universal life.

Sub-Values

- *Preservation;*
- *Stewardship;*
- *Environmental Awareness;*
- *Organizational Responsibility;*
- *Long-term Continuity*

Adab menjadi asas pelaksanaan Nilai Teras UTM.

KEPERLUAN MINIMUM UTM

Embed dan/atau Integrate WAJIB.

Infuse sahaja BELUM MEMENUHI KEPERLUAN PELAKSANAAN.

- Setiap nilai ISES diterapkan dalam **sekurang-kurangnya 2 kursus**
- Pemilihan kursus **sistematik** dengan justifikasi jelas
- Disokong **bukti pelaksanaan** — rubrik, tugasan, hasil kerja

Fakulti boleh melaksanakan *Embed, Integrate* atau kedua-duanya mengikut keperluan dan kesesuaian. Nilai hendaklah dinyatakan dengan jelas dalam CLO, kriteria tugasan dan rubrik.

Contoh Amalan Pengajaran dan Pembelajaran Mengikut Tahap Pelaksanaan VBE - 1/2

Integrity

- ***Infuse:*** Nilai *Integrity* diperkenalkan dan diberi penekanan melalui penerangan tentang amanah, kejujuran, akauntabiliti, dan pelaksanaan tugas secara wajar dalam kursus, tugasan, atau projek.
- ***Embed:*** Nilai *Integrity* dinyatakan dengan jelas sebagai kriteria dalam tugasan, laporan, pembentangan atau projek, termasuk aspek amanah, kejujuran, akauntabiliti, dan pelaksanaan tugas secara wajar.
- ***Integrate:*** Nilai *Integrity* dijajarkan secara sistematik merentas kursus melalui penerapan dan pentaksiran yang konsisten terhadap amanah, kejujuran, akauntabiliti, dan pelaksanaan tugas secara wajar sepanjang program.

Synergy

- ***Infuse:*** Nilai *Synergy* diperkenalkan melalui penekanan terhadap kerja berpasukan, kerjasama, saling menghormati dan peranan setiap ahli dalam aktiviti pembelajaran.
- ***Embed:*** Nilai *Synergy* dinyatakan dengan jelas sebagai kriteria dalam aktiviti atau tugasan kumpulan yang menilai kerja berpasukan, kerjasama, saling menghormati, keterangkuman dan tanggungjawab bersama.
- ***Integrate:*** Nilai *Synergy* diterapkan secara sistematik merentas kursus melalui kerja berpasukan, kolaborasi pelbagai disiplin, maklum balas rakan sebaya dan pentaksiran yang konsisten sepanjang program.

Contoh Amalan Pengajaran dan Pembelajaran Mengikut Tahap Pelaksanaan VBE - 2/2

Excellence

- **Infuse:** Nilai *Excellence* diperkenalkan dan diberi penekanan melalui penghargaan terhadap ilmu, penghasilan kerja berkualiti dan penggunaan ilmu secara tepat dalam aktiviti pembelajaran.
- **Embed:** Nilai *Excellence* dinyatakan dengan jelas sebagai kriteria dalam tugasan atau projek yang menilai kualiti kerja, kredibiliti, penggunaan ilmu, dan penambahbaikan berterusan.
- **Integrate:** Nilai *Excellence* dijajarkan secara progresif merentas kursus melalui peningkatan tahap jangkaan terhadap kualiti, kredibiliti, penggunaan ilmu, dan penambahbaikan berterusan sepanjang program.

Sustainability

- **Infuse:** Nilai *Sustainability* diperkenalkan dan diberi penekanan melalui pertimbangan terhadap pemuliharaan alam sekitar, tanggungjawab organisasi, dan impak jangka panjang dalam topik, kes, atau aktiviti pembelajaran.
- **Embed:** Nilai *Sustainability* dinyatakan dengan jelas sebagai kriteria dalam tugasan, projek atau kajian kes yang memerlukan pelajar mempertimbangkan aspek alam sekitar, tanggungjawab organisasi, dan kesinambungan jangka panjang.
- **Integrate:** Nilai *Sustainability* dijajarkan secara sistematik merentas kursus melalui penerapan dan pentaksiran aspek pemuliharaan alam sekitar, tanggungjawab organisasi, kesinambungan jangka panjang, dan pembuatan keputusan yang bertanggungjawab sepanjang program.

Contoh *Embed, Integrate* dan Pentaksiran bagi Nilai Teras UTM - 1/2

1 Integrity

Embed	*Integrate*	Contoh Pentaksiran
Include trust, responsibility, accountability, honesty, and proper conduct as explicit criteria in a report, presentation, or project rubric.	*Align **Integrity** across several courses through common expectations on trust, responsibility, accountability, and proper conduct in coursework, project work, and programme-level assessment evidence.*	*Rubric for report writing; task or project rubric with criteria on accountability and proper conduct; reflective statement on responsibility in fulfilling assigned tasks; peer verification of individual contribution; project integrity checklist.*

2 Synergy

Embed	*Integrate*	Contoh Pentaksiran
Assess teamwork, collegiality, mutual respect, inclusivity, and shared responsibility through peer evaluation, group-work rubrics, or collaborative task criteria.	*Develop **Synergy** across courses through progressively more demanding team-based tasks, multidisciplinary collaboration, and programme-wide expectations for collegial and responsible teamwork.*	*Peer evaluation form; group-work rubric; team contribution log; observation checklist for teamwork and collegiality; collaborative project assessment; presentation rubric for group communication.*

Contoh *Embed*, *Integrate* dan Pentaksiran bagi Nilai Teras UTM - 2/2

3 Excellence

Embed	*Integrate*	Contoh Pentaksiran
*Build **Excellence** into task design through criteria that assess respect for knowledge, quality of work, credibility, proper use of knowledge, and continuous improvement.*	*Align **Excellence** across the programme by scaffolding increasingly demanding expectations for quality, credibility, knowledge-based judgement, and continuous improvement from early courses to capstone work.*	*Quality checklist; performance rubric for practical work; reflective statement on the use of knowledge in completing tasks; draft-and-revision rubric; portfolio showing improvement across courses; capstone quality benchmark.*

4 Sustainability

Embed	*Integrate*	Contoh Pentaksiran
Require students to justify choices based on preservation, stewardship, environmental awareness, organizational responsibility, and long-term continuity in assignments, projects, or case studies.	*Integrate **Sustainability** across courses through coordinated treatment of environmental preservation, organizational responsibility, long-term continuity, and responsible decision-making in curriculum and projects.*	*Case analysis rubric; project report section on sustainability considerations; design justification based on preservation and long-term continuity; community or industry project evaluation; portfolio of sustainability-related tasks.*

Pemetaan Nilai Teras UTM kepada MQF 2.0 Skill Sets, Pengajaran dan Pembelajaran serta Pentaksiran

UTM Core Values	Relevant MQF 2.0 Skill Sets	Example T&L Activities	Examples of Assessment
Integrity	C1 Knowledge and Understanding; C2 Cognitive Skills; C3A Practical Skills; C3C Communication Skills; C3D Digital Skills; C3E Numeracy Skills; C3F Leadership, Responsibility and Autonomy; C4A Personal Skills; C5 Ethics and Professionalism	Introduce expectations on proper conduct in fulfilling a trust, responsibility, honesty, and accountability at the beginning of a task or project. Use guided discussion, reflective tasks, or case-based learning to help students examine trust, responsibility, and proper conduct in academic and professional situations.	Rubric criteria on accountability and proper conduct; reflective writing on responsibility and trust; integrity declaration; evidence of accurate reporting; peer or supervisor verification of contribution; checklist on responsible completion of assigned tasks.
Synergy	C2 Cognitive Skills; C3A Practical Skills; C3B Interpersonal Skills; C3C Communication Skills; C3D Digital Skills; C3F Leadership, Responsibility and Autonomy; C4A Personal Skills; C5 Ethics and Professionalism	Use team-based learning, collaborative tasks, and structured group discussion that emphasise collegiality, mutual respect, inclusivity, and recognition of roles within teamwork. Require students to work across roles and contribute responsibily in shared tasks.	Peer evaluation; group-work rubric; team contribution log; observation checklist on collegiality, participation, and respect for roles; collaborative project assessment; presentation rubric for group communication.
Excellence	C1 Knowledge and Understanding; C2 Cognitive Skills; C3A Practical Skills; C3D Digital Skills; C3E Numeracy Skills; C3F Leadership, Responsibility and Autonomy; C4A Personal Skills; C4B Entrepreneurial Skills; C5 Ethics and Professionalism	Design learning activities that emphasise respect for knowledge, quality of work, credibility, and continuous improvement. Use research-based tasks, staged submissions, problem-solving activities, and feedback cycles that require students to apply knowledge appropriately and improve the quality of their work over time.	Quality rubric; draft-and-revision assessment; evaluation of knowledge-based justification; data analysis task; portfolio showing improvement; benchmarked final output; reflective statement on quality, credibility, and proper use of knowledge.
Sustainability	C1 Knowledge and Understanding; C2 Cognitive Skills; C3A Practical Skills; C3C Communication Skills; C3D Digital Skills; C3E Numeracy Skills; C3F Leadership, Responsibility and Autonomy; C4A Personal Skills; C4B Entrepreneurial Skills; C5 Ethics and Professionalism	Use case studies, projects, and discussion tasks that require students to consider preservation, stewardship, organisational responsibility, and long-term continuity. Include activities that ask students to justify choices in relation to environmental care, responsible organisational practice, and long-term impact.	Case analysis rubric; sustainability section in project report; justification of responsible choices; resource or impact analysis; project evaluation on preservation and long-term continuity; portfolio of sustainability-related tasks.

Contoh Perancangan Kurikulum Berasaskan Nilai bagi Program Empat Tahun

#	COGNITIVE FOCUS	FOUNDATIONAL KNOWLEDGE & AWARENESS	ANALYSIS & CRITICAL ENGAGEMENT	ANALYSIS & LEADERSHIP APPLICATION	SOLUTIONING & LEGACY-BUILDING
	CORE VALUE	YEAR 1	YEAR 2	YEAR 3	YEAR 4
1	Integrity	Introduce trust, responsibility, honest conduct, and proper fulfilment of assigned tasks in learning and coursework.	Examine issues of trust, accountability, responsible conduct, and fulfilment of duties in academic and professional contexts.	Apply Integrity in project work, reporting, teamwork, and decision-making roles that require trust, responsibility, and accountability.	Demonstrate Integrity consistently in professional practice, final-year projects, public accountability, and responsible career-related decisions.
2	Synergy	Introduce awareness of teamwork, collegiality, mutual respect, inclusivity, and shared responsibility in classroom and team activities.	Examine group dynamics, collegiality, communication, and the role of all levels in collaborative work within academic and professional settings.	Apply Synergy in multidisciplinary tasks, leadership roles, peer engagement, and team-based projects requiring coordinated contribution and respect for roles.	Demonstrate Synergy through effective teamwork, collegial engagement, stakeholder interaction, and collective problem-solving in authentic contexts.
3	Excellence	Introduce respect for knowledge, the importance of quality work, and the proper use of knowledge in learning activities and coursework.	Examine how knowledge, credibility, quality, and continuous improvement contribute to sound academic and professional judgement.	Apply Excellence in advanced coursework, practical tasks, and research through quality work, knowledge-based judgement, and continuous improvement.	Demonstrate Excellence through high-quality outputs, credible professional practice, and sustained commitment to knowledge-based improvement.
4	Sustainability	Introduce awareness of preservation, stewardship, organizational responsibility, and long-term continuity in relation to nature and the organisation.	Examine environmental, organizational, and long-term implications of disciplinary knowledge, practice, and decision-making.	Apply Sustainability in design, planning, project implementation, and leadership contexts involving preservation, stewardship, and responsible organizational choices.	Demonstrate Sustainability through responsible solutions, long-term thinking, and practice that preserves nature and supports organizational continuity.

Penjajaran Nilai Teras UTM Dengan UTM *Graduate Attributes* dan MQF 2.0 *Academic Learning Domains*

UTM Graduate Attribute			Scholars			Social Intelligence				Innovative Talent			Constructive Citizen		Enterprising Skills					Constructive Citizen	
			Knowledge	Cognitive Skills	Practical Skills	Collaborative	Adaptability	Professional Competence	Communicate Effectively	Digital Creative	Technology Proficient	Analytical Skill	Advocative	Leadership	Resilient	Visionary	Resourceful	Opportunity Driven	Entrpermemial	Patrioima and Social Responsibilities	Stewacnental Brogrdship
			SC1	SC2	SC3	SI1	SI2	SI3	SI4	IT1	IT2	IT3	CC1	CC2	ES1	ES2	ES3	ES4	ES5	CC3	CC4
MQF 2.0			Knowledge & Understanding	Cognitive Skills	Practical Skills	Interpersonal Skills			Comunication Skills	Digital Skills		Numeracy Skills	Leadership, Autonomy & Responsibility		Personal Skills		Entrepreneurial Skills			Ethics, Professioniim Skills	
			PLO1	PLO2	PLO3	PLO4			PLO5	PLO6		PLO7	PLO8		PLO9		PLO10			PLO11	
			C1	C2	C3A	C3B			C3C	C3D		C3E	C3F		C4A		C4B			C5	
UTM Core Values	ADAB	*Integrity*	✓	✓	✓				✓		✓	✓		✓	✓					✓	
		Synergy		✓	✓	✓	✓	✓	✓	✓				✓						✓	
		Excellence	✓	✓	✓						✓	✓		✓	✓	✓		✓	✓		
		Sustainability	✓	✓	✓				✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓

Nota: Simbol ✓ menunjukkan GA UTM dan MQF 2.0 *Academic Learning Domains* yang berkaitan dengan setiap Nilai Teras UTM. Jadual ini digunakan sebagai panduan penjajaran kurikulum pada peringkat program dan kursus. Penjajaran yang dibuat hendaklah disokong oleh bukti pelaksanaan sebenar dalam kursus dan program.

Templat Standard Pemetaan Kursus Kepada Nilai Teras UTM Dan UTM Graduate Attributes

YEAR	NO.	COURSE CODE	COURSE NAME	GRADUATE ATTRIBUTES UTM																		UTM CORE VALUES			
				SCHOLARS			SOCIAL INTELLIGENCE				INNOVATIVE TALENT			CONSTRUCTIVE CITIZEN		ENTERPRISING SKILLS					CONSTRUCTIVE CITIZEN		INTEGRITY	SYNERGY	EXCELLENCE	SUSTAINABILITY
				SC1	SC2	SC3	SI1	SI2	SI3	SI4	IT1	IT2	IT3	CC1	CC2	ES1	ES2	ES3	ES4	ES5	CC3	CC4				
				MQF2.0																						
				PLO1	PLO2	PLO3	PLO4			PLO5	PLO6		PLO7	PLO8		PLO9	PLO10				PLO11					
				C1	C2	C3A	C3B			C3C	C3D		C3E	C3F		C4A	C4B				C5					
1	SEMESTER 1																									
	SEMESTER 2																									

Contoh Pemetaan Kursus Kepada Nilai Teras UTM Dan UTM *Graduate Attributes*

Sila tandakan (✓) kursus dengan UTM Core Values dan Atribut Graduan (GA) berkaitan

YEAR	NO.	COURSE CODE	COURSE NAME	GRADUATE ATTRIBUTES UTM																		UTM CORE VALUES			
				SCHOLARS			SOCIAL INTELLIGENCE				INNOVATIVE TALENT			CONSTRUCTIVE CITIZEN		ENTERPRISING SKILLS					CONSTRUCTIVE CITIZEN		INTEGRITY	SYNERGY	EXCELLENCE	SUSTAINABILITY
				SC1	SC2	SC3	SI1	SI2	SI3	SI4	IT1	IT2	IT3	CC1	CC2	ES1	ES2	ES3	ES4	ES5	CC3	CC4				
				MQF2.0																						
				PLO1	PLO2	PLO3	PLO4			PLO5	PLO6		PLO7	PLO8		PLO9	PLO10				PLO11					
				C1	C2	C3A	C3B			C3C	C3D		C3E	C3F		C4A	C4B				C5					
1	SEMESTER 1																									
	1	ULRS 1012	Malaysian Citra							✓							✓									
	2	SSCP 1143	Mechanics	✓	✓																					✓
	3	SSCP 1153	Electricity and Magnetism	✓	✓																				✓	
	4	SSCP 1811	Practical Physics I			✓				✓														✓		
	5	SSCM 1023	Mathematical Methods I		✓								✓												✓	
	6	SSCP 1102	Introduction to Physics Programme							✓								✓					✓			

What is a CLO?

Course Learning Outcomes

Definition

CLOs state the learning outcomes that students are expected to achieve at the end of a course.

Key Points

01 More Specific Than PLOs

CLOs are more specific than PLOs.

02 Linked to Course Design

CLOs must be related to course content, learning activities, and course assessment.

03 Contribute to PLOs

Each CLO should contribute to the relevant PLO.

04 Not All PLOs in One Course

Not all PLOs need to be achieved in a single course.

Quick Takeaway

A good CLO is specific, course-based, aligned with learning activities and assessment, and contributes to the relevant PLO.

S.M.A.R.T FRAMEWORK

Doran (1981)

The SMART framework is a **widely used tool for setting clear and effective goals.** It is commonly applied in education, business, project management, and performance evaluation.

In the context of Course Learning Outcomes (CLOs), the SMART framework helps educators ensure that:

01 Learning outcomes **clearly describe** what students will achieve.

02 Learning outcomes **can be assessed**.

03 Learning outcomes are **realistic and relevant** to the program/course.

04 Learning outcomes are **expected to be achieved** within the course duration.

Reference: Doran, G. T. (1981). There's a SMART way to write management's goals and objectives. *Management review*, 70(11).

S.M.A.R.T FRAMEWORK

Doran (1981)

The SMART framework is a **widely used tool for setting clear and effective goals.** It is commonly applied in education, business, project management, and performance evaluation.

In the context of Course Learning Outcomes (CLOs), the SMART framework helps educators ensure that:

01

SPECIFIC

The CLO should clearly state what the student is expected to learn or do.

02

MEASURABLE

The CLO should be assessable through assignments, tests, projects, or other evaluation methods.

03

ACHIEVABLE

The CLO should be realistic based on the time, resources, and level of students.

04

RELEVANT

The CLO must align with the course aim, programme learning outcomes (PLO), and current industry or academic needs.

05

TIME-BOUND

The CLO should be achievable within the duration of the course.

Reference: Doran, G. T. (1981). There's a SMART way to write management's goals and objectives. *Management Review*, 70(11), 35–36.

ALIGNING CLOs WITH PLOs USING MQF LEVELS

THE IMPORTANCE OF ALIGNMENT

1

CONTRIBUTES TO PROGRAM OBJECTIVES

Ensures every course supports the program's overall goals.

2

LEARNING OUTCOME CONSISTENCY

Promotes uniformity in student learning outcomes.

ALIGNMENT PROCESS: 3 EASY STEPS

1

IDENTIFY RELEVANT PLOs

Match CLO with the program outcome it supports.

2

REFER TO MQF LEVEL DESCRIPTORS

Use MQF guidelines to ensure the correct level of CLO complexity.

1. KNOWLEDGE & UNDERSTANDING	Cognitive
2. COGNITIVE SKILLS	Cognitive
3. FUNCTIONAL WORK SKILLS • Practical • Interpersonal • Communication • Digital Skills • Numeracy Skill	Cognitive Psychomotor Affective
4. PERSONAL & ENTREPRENEURIAL SKILLS • Leadership • Responsibility • Autonomy • Personal Skills • Responsibility	Affective
5. ETHICS & PROFESSIONALISM	Affective

Cognitive Psychomotor Affective

3

VALIDATE ALIGNMENT

Validate that CLOs collectively cover all targeted PLOs.

Contoh Pelaksanaan VBE di Peringkat
Kursus: Practical Physics II

CLO3

Report experimental findings as a team with mutual respect, inclusivity and shared responsibility in group laboratory work.

T&L Methods

- Team-based laboratory work with rotating roles (leader, experimenter, recorder, presenter)
- Structured group discussion on results that values every member's input
- Collaborative report writing with shared division of tasks
- Guided peer feedback

Assessment Methods

- Group laboratory report (rubric with teamwork criteria)
- Peer evaluation form
- Team contribution log
- Lecturer observation checklist on teamwork and collegiality

Rubrics / Criteria

Report criteria

Structure, procedure clarity, data/graph presentation, results and findings, scientific language

Collaboration criteria

Contribution, coordination, team communication, accountability

Evidence of Achievement

- Group laboratory report
- Report rubric score
- Collaboration rubric / lecturer observation record
- Peer assessment record, if used
- Team contribution log

Course: Practical Physics II | **Year / Semester:** Year 2, Semester 1 | **PLO:** PLO5 (C3C Communication Skills) | **VBE:** Synergy

Dominant learning domain for each learning outcome

	LEARNING OUTCOME CLUSTERS	LEARNING OUTCOME DOMAIN	*DOMINANT LEARNING DOMAIN
1	Knowledge and Understanding	Knowledge and Understanding	Cognitive
2	Cognitive Skills	Cognitive Skills	Cognitive
3	Functional Work Skills	Practical Skills	Psychomotor
		Interpersonal Skills	Affective
		Communication Skills	Affective
		Digital Skills	Cognitive / Psychomotor / Affective
		Numeracy Skills	Cognitive
		Leadership, Autonomy and Responsibility	Affective
4	Personal and Entrepreneurial Skills	Personal Skills	Affective
		Entrepreneurial Skills	Affective
5	Ethics and Professionalism	Ethics and Professionalism	Affective

Pemetaan CLO – PLO – MQF 2.0 – UTM GA – ESD – VBE – T&L – *Assessment Method*

No.	CLO	PLO (MQF Cluster Code)	MQF 2.0 Taxonomies & Graduate Attributes	ESD, A & F	VBE	T&L Methods	Assessment Methods
CLO1	**Measure** basic physical quantities such as length, mass, time, current and voltage **using standard laboratory instruments with appropriate precision and uncertainty estimation.**	**PLO3 (C3A)**	**P4 SC3**	-	-	Demonstration of instrument use; supervised hands-on practical; guided measurement practice with uncertainty estimation	Lecturer observation (practical skills rubric); laboratory record / worksheet
CLO2	**Assemble** experimental set-ups for mechanics, optics and electricity experiments **according to given procedures and laboratory safety practices.**	**PLO3 (C3A)**	**P4 SC3**	-	-	Demonstration of set-up; laboratory safety briefing; supervised hands-on practical; guided practice	Lecturer observation; practical test with set-up checklist
CLO3	**Report** experimental findings **as a team with mutual respect, inclusivity and shared responsibility in group laboratory work.**	**PLO5 (C3C)**	**A3 A (SI4)**	**C**	**Synergy**	Team-based laboratory work with **rotating roles** (leader, experimenter, recorder, presenter); **structured group discussion** on results that values every member's input; **collaborative report writing** with shared division of tasks; guided peer feedback	Group laboratory report (rubric with **teamwork criteria**); **peer evaluation form; team contribution log; lecturer observation checklist on teamwork and collegiality**

Course: Practical Physics **Year / Semester:** Year 1, Semester 1 **PLOs:** PLO3 (C3A Practical Skills), PLO5 (C3C Communication Skills) **VBE:** Synergy

At the end of the course, students should be able to:

Structure: **Action Verb** + **Learning Content** + **Context or Standard**

Thank You

for your attention