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Developing the Generic Skills through T&L at Course Level – The Planning Stage
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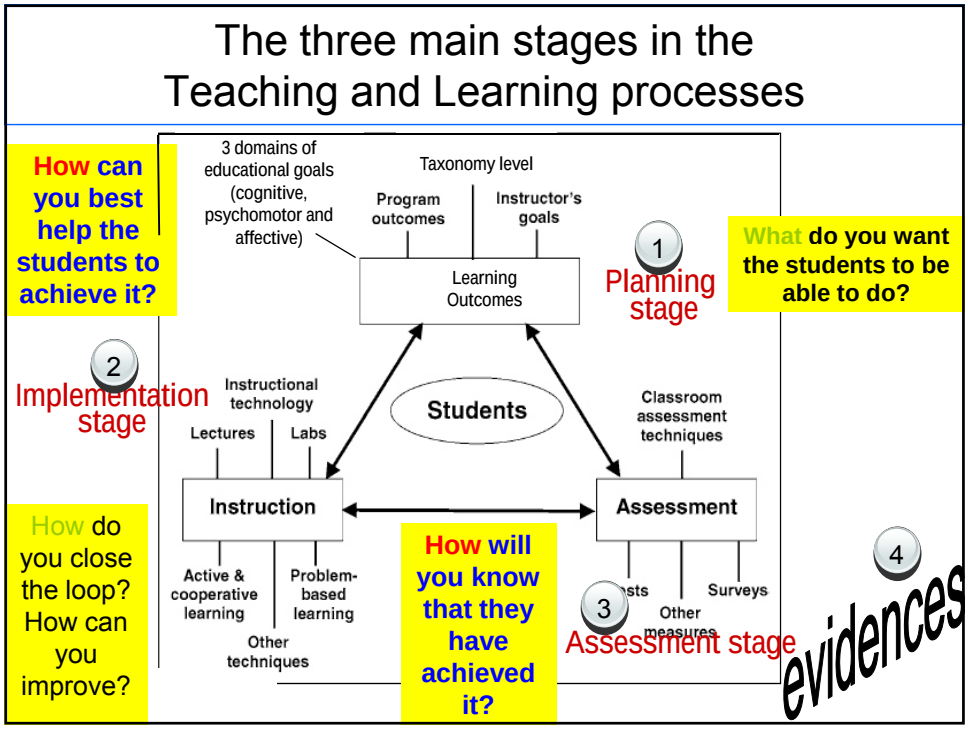
The three main stages in the Teaching and Learning processes
How can you best help the students to achieve it?
3 domains of educational goals (cognitive, psychomotor and affective)
Taxonomy level
Program outcomes
Instructor's goals
Learning Outcomes
1
Planning stage
What do you want the students to be able to do?
2
Implementation stage
Instructional technology
Lectures
Labs
Students
Classroom assessment techniques
Instruction
Assessment
How do you close the loop? How can you improve?
Active & cooperative learning
Problem-based learning
Other techniques
How will you know that they have achieved it?
3
Surveys
Other measures
Assessment stage
4
evidences

Inculcating GS Among UG Students: The KPT's Vision and Commitment

Dilancarkan secara rasmi oleh YB Menteri Pengajian Tinggi Malaysia pada 22 Ogos 2006 di Universiti Putra Malaysia, Serdang

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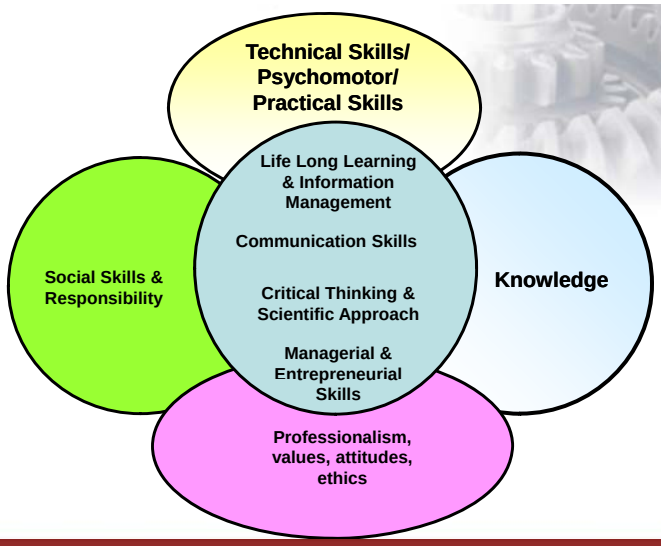
The Needs for A Balanced Curriculum



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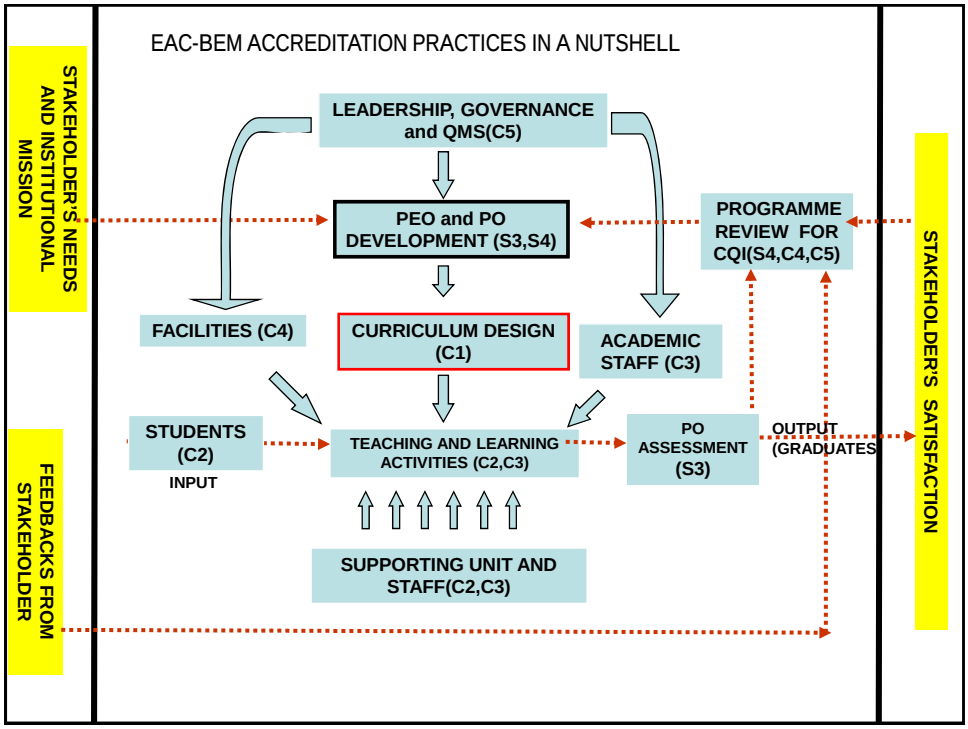
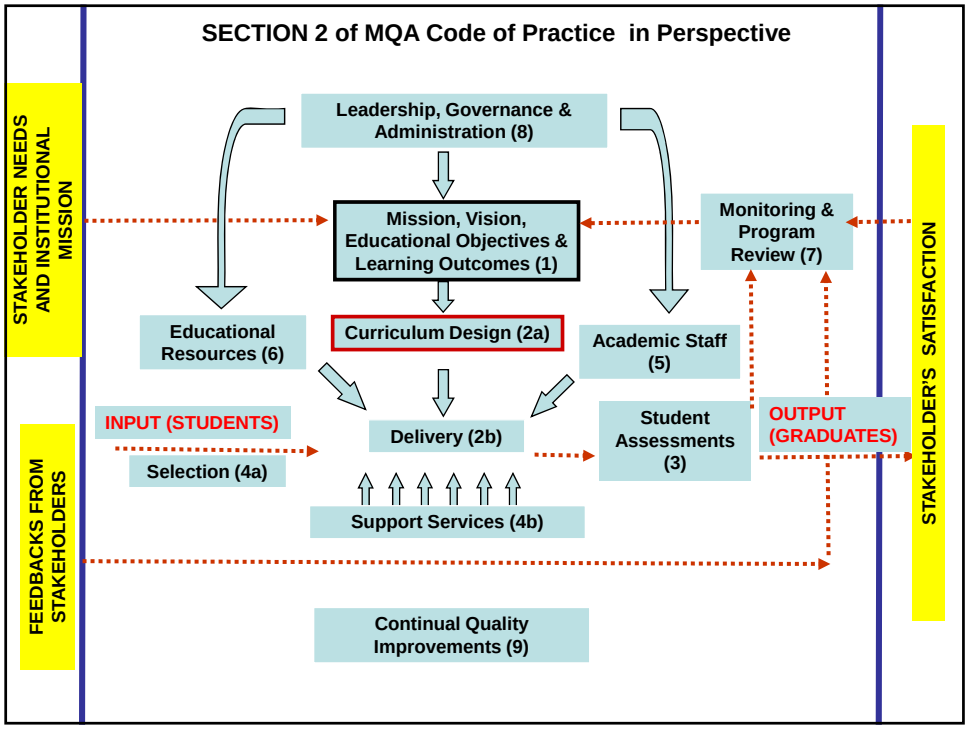
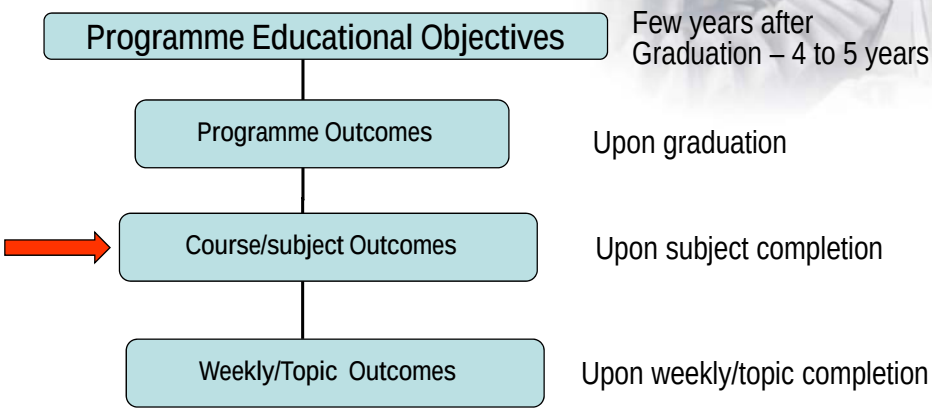

EAC-BEM ACCREDITATION PRACTICES IN A NUTSHELL
STAKEHOLDER'S NEEDS AND INSTITUTIONAL MISSION
LEADERSHIP, GOVERNANCE and QMS(C5)
PEO and PO DEVELOPMENT (S3,S4)
PROGRAMME REVIEW FOR CQI(S4,C4,C5)
STAKEHOLDER'S SATISFACTION
FACILITIES (C4)
CURRICULUM DESIGN (C1)
ACADEMIC STAFF (C3)
STUDENTS (C2)
INPUT
TEACHING AND LEARNING ACTIVITIES (C2,C3)
PO ASSESSMENT (S3)
OUTPUT (GRADUATES)
FEEDBACKS FROM STAKEHOLDER
SUPPORTING UNIT AND STAFF(C2,C3)


SECTION 2 of MQA Code of Practice in Perspective
STAKEHOLDER NEEDS AND INSTITUTIONAL MISSION
Leadership, Governance & Administration (8)
Mission, Vision, Educational Objectives & Learning Outcomes (1)
Monitoring & Program Review (7)
STAKEHOLDER'S SATISFACTION
Educational Resources (6)
Curriculum Design (2a)
Academic Staff (5)
INPUT (STUDENTS)
Selection (4a)
Delivery (2b)
Student Assessments (3)
OUTPUT (GRADUATES)
FEEDBACKS FROM STAKEHOLDERS
Support Services (4b)
Continual Quality Improvements (9)

IMPLICATION OF REQUIREMENTS CHANGE IN EAC/QA

- **Need to understand what is OBE/EAC/QA.**
- **Need to specify program educational objectives (PEO).**
- **Need to specify learning outcomes (LO).**
- **Need to revise the curriculum.**
- **Need to change/modify/review teaching, assessment, and evaluation method.**
- **Need to start documenting evidences on EAC/QA.**
- **Need to send staff for training**
- **Need to resist disagreement from faculty members.**
- **etc….**

Different Levels of Learning Outcomes



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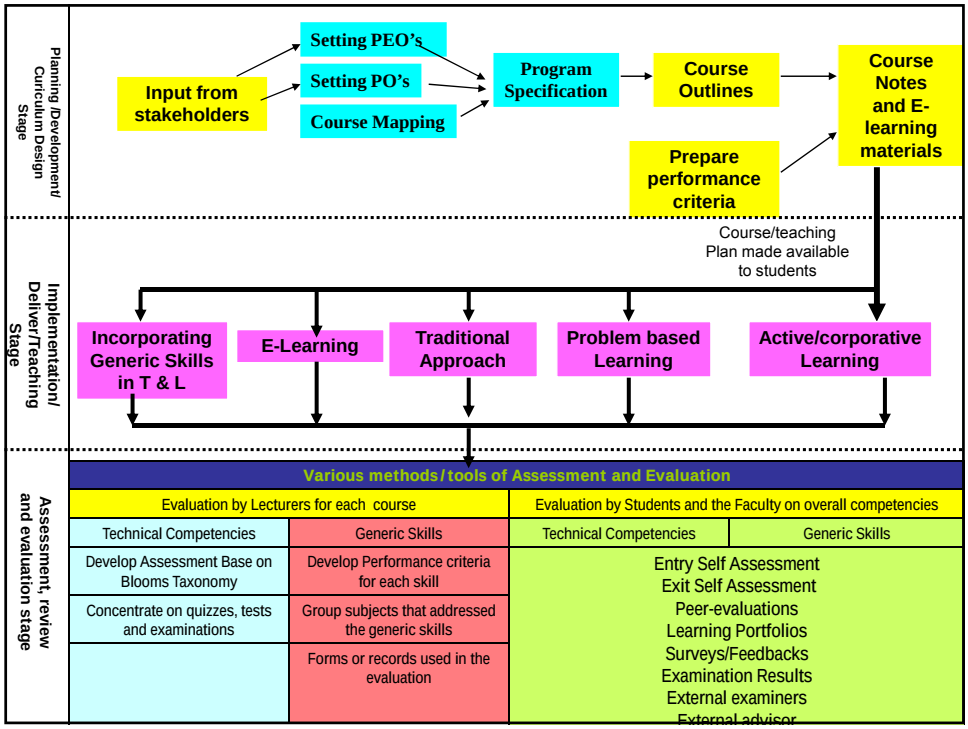

PROGRAM LEARNING OUTCOMES
B.Eng (Civil Engineering)

Technical competencies

	PROGRAM LEARNING OUTCOMES	TEACHING & LEARNING METHODS	ASSESSMENTS
LO1	Ability to acquire knowledge of science and civil engineering principles	Lectures, tutorials, seminars, laboratory works, directed reading, independent study, active learning	Examinations, laboratory reports, presentations, assignments, problem-based exercises, project reports
LO2	Ability to use the techniques, skills and modern civil engineering tools	Lectures, tutorials, computer hands-on sessions, laboratory works, industrial training, surveying camps	Examinations, laboratory reports, presentations, assignments, problem-based exercises, project reports, design tasks, simulation exercises, industrial training reports
LO3	Ability to analyse, interpret, develop and conduct experiments; and design components, systems, or processes	Project supervision, lectures, tutorials, laboratory works, directed reading, simulation exercises, computer-based exercises, independent study, problem-based learning	Final Year Project reports, project reports, design tasks, examinations, laboratory reports, presentations, assignments

Generic Skills competencies

	PROGRAM LEARNING OUTCOMES	TEACHING & LEARNING METHODS	ASSESSMENTS
LO4	Ability to identify, formulate and solve civil engineering related problems	Project supervision, lectures, tutorials, laboratory works, group projects, independent study	Final Year Project reports, project reports, design tasks, examinations, laboratory reports, presentations, assignments
LO5	Ability to communicate effectively and with confidence	Projects, independent study, tutorials, surveying camps	Oral presentations, written reports
LO6	Ability to respond and adapt to changing situations and priorities	Lectures, laboratory works, group assignments, Industrial training, final year project	Industrial training reports and logbooks, final year project reports and logbooks
LO7	Ability to function effectively as an individual and/or in a team to achieve common goals	Independent projects, group projects, industrial training, final year project, surveying camps	Industrial training report and logbook, project report, final year project report and logbook
LO8	Ability to perpetually seek and acquire contemporary knowledge	Independent study, final year projects	Final year project reports, assignments
LO9	Ability to think positively and possess self-esteem	Group projects, independent study, tutorials, industrial training, final year project	Written assignments, project reports, essays, final year project report, Industrial training reports
LO10	Ability to apply high ethical standards in professional practice and social interactions for sustainable development	Final year projects, Laboratory works, Industrial training, surveying camps	Written assignments, laboratory reports, essays, Final year project reports, Industrial training report,

Mapping of Programme Learning Outcomes to Subjects

Code	Course	LO1	LO2	LO3	LO4	LO5	LO6	LO7	LO8	LO9	LO10
SAB 1011	Engineering Survey – Fieldwork	b	a	c	2	2	-	2	-	2	2
SAB 1023	Engineering Survey	a	c	c	2	2	-	-	-	-	2
SAB 1031	Survey Camp	a	a	c	2	1	-	1	-	2	2
SAB 1042	Civil Engineering Laboratory I	a	a	a	2	1	-	2	2	2	2
SAB 1213	Applied Mechanics	a	b	b	2	2	2	2	2	-	2
SAB 1413	Computer Programming	a	a	b	2	2	-	-	-	2	2
SAB 1423	Civil Engineering Drawing	a	a	b	2	2	-	-	2	-	2
SAB 1513	Fluid Mechanics	a	b	b	2	2	2	2	-	2	2
SAB 1713	Soil Mechanics	a	b	b	2	2	2	2	2	2	2
SAB 2012	Civil Engineering Laboratory II	a	a	a	2	1	-	2	2	2	2
SAB 2032	Mechanical & Electrical System	a	b	b	2	2	2	-	2	2	2
SAB 2112	Civil Engineering Materials	a	b	b	2	2	2	2	2	2	2

Technical competencies

Generic Skill competencies

Key:
Technical Skills : a = major contribution to outcome; b = moderate contribution to outcome; c = minor contribution to outcome
Generic Skills : 1 = Substantial (with assessment) 2 = not substantial (introduction/observation)

COURSE OUTCOMES MATRIX
COURSE : SAM 4324 (STRUCTURAL STEEL AND TIMBER DESIGN)

No	Course Outcomes (CO)	Programme Learning Outcomes (PLO)										Delivery	Assessment	Key Performance Indicators/Index
		Knowledge	Use of Techniques	Analyse & Development	Problem Solving	Communication	Adaptability	Team Working	Life Long Learning	Self Esteem	Ethics and Integrity			
		1	2	3	4	5	6	7	8	9	10			
1.	Able to describe the concept and philosophy of steel and timber design based on the relevant code of practice	a	a	a								Lectures, CL, design practices, tutorials	Tests, Final Exam	Students able to analyse, design and evaluate the member capacity of the structural element based on the standard codes of practice 80% achieving grade C and above
2.	Able to estimate the design loadings and to analyse structural elements correctly	a	a	a	1		2					Lectures, CL, design practices, tutorials	Tests, Final Exam, Project Submission	
3.	Able to use the code of practise to design structural steel and timber elements.	a	a	a	1		2					Lectures, CL, design practices, tutorials	Tests, Final Exam, Project Submission	
4.	Able to prepare structural design report, drawing plan and structural element detailing before week 15					1						Project work, CL	Project Submission	Reports are clear, correct and well presented. Drawings according to standards specifications. 100% passes
5.	Able to work effectively in a team producing a design report within a stipulated timeframe					1		1				CL	Peer Assessment, Observation	No complains from team members 80% students achieved 80%
6.	Able to apply professional practice and ethics within a given time frame										1	Project work, CL	Peer Assessment, Observation	No students barred from final exams. 80% coursework delivered on time. 90% attendance during each lectures

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Definitions of Learning Outcomes

i. Learning outcomes are statements of what students know and can do as a result of their respective courses of study

Councils for Higher Education Accredition Board of Directors, USA 2002

ii. A learning outcome is a statement of what a learner is expected to know, understand or be able to do as a result of a learning process.

Centre for the Advancement of Teaching and Learning, The University of Western Australia, 2004.

What are Learning Outcomes?

- Demonstrations, or performance reflects
  - What the student knows.
  - What the student can actually do with what they know.
  - The student's confidence and motivation in demonstrating what they know.

They have implications for qualifications, curriculum design, teaching, learning and assessment, as well as quality assurance.

Outcomes Based Education?

Outcomes Based Education focuses on student learning by:

- **Using learning outcome statements to make explicit what the student is expected to be able to know, understand or do;**
- **Providing learning activities which will help the student to reach these outcomes;**
- **Assessing the extent to which the student meets these outcomes through the use of explicit assessment criteria.**

Why Course Outcomes is important?

For teaching staff: It informs:

- **the content of teaching**
- **the teaching strategies you will use**
- **the sorts of learning activities/tasks you set for your students**
- **appropriate assessment tasks (formative vs**
- **summative)**
- **course evaluation.**

Why Course Outcomes is important?

For students: The set of learning outcomes provides them with:

- **define the type and depth of learning studentsare expected to achieve**
- **a solid framework to guide their studies and assistthem to prepare for their assessment**
- **a point of articulation with graduate attributes at**
- **course and/or university (i.e. generic) level.**

Why Course Outcomes is important?

For prospective employers: It informs:

- **knowledge and technical skills a graduate willpossess**
- **set of generic skills inculcated among graduates**

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SAB 1011	Engineering Survey – Fieldwork	b	a	c	2	2	-	2	-	2	2
SAB 1023	Engineering Survey	a	c	c	2	2	-	-	-	-	2
SAB 1031	Survey Camp	a	a	c	2	1	-	1	-	2	2
SAB 1042	Civil Engineering Laboratory I	a	a	a	2	1	-	2	2	2	2
SAB 1213	Applied Mechanics	a	b	b	2	2	2	2	2	-	2
SAB 1413	Computer Programming	a	a	b	2	2	-	-	-	2	2
SAB 1423	Civil Engineering Drawing	a	a	b	2	2	-	-	2	-	2
SAB 1513	Fluid Mechanics	a	b	b	2	2	2	2	-	2	2
SAB 1713	Soil Mechanics	a	b	b	2	2	2	2	2	2	2
SAB 2012	Civil Engineering Laboratory II	a	a	a	2	1	-	2	2	2	2
SAB 2032	Mechanical & Electrical System	a	b	b	2	2	2	-	2	2	2
SAB 2112	Civil Engineering Materials	a	b	b	2	2	2	2	2	2	2

Technical competencies

Generic Skill competencies

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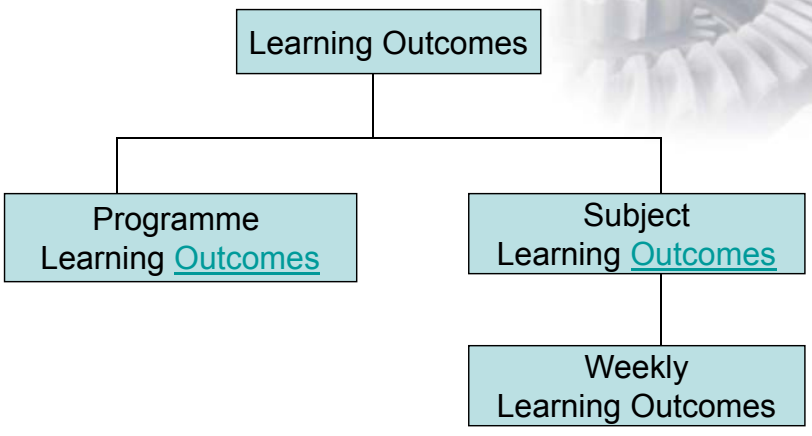
Integrating Generic Skills into Teaching and Learning

The Three Main Stages in the Teaching-Learning Process:

- Planning
- Implementation
- Assessment

Different Levels of Learning Outcomes



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Two Approaches to Developing GS

Developing GS through T&L

Diffusion Model
- Specific subjects created to develop GS
- "stand-alone development"

Infusion Model
- Infusion of GS into existing subjects
- "curriculum integrated approach"

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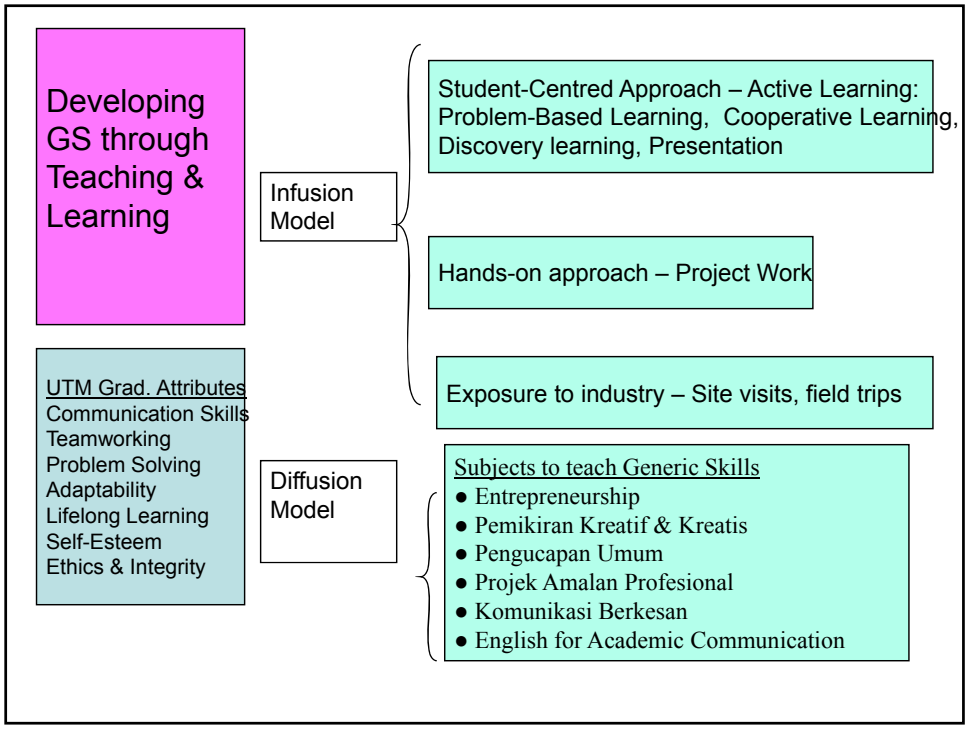

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Incorporating Generic Skills: The Planning Stage

- Planning stage:
  - Planning at curriculum/programme level
  - Planning at subject level
- Plan Learning Outcomes for Generic Skills

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3 components necessary in writing an effective course outcomes

- **1. Behaviour**
  - **Write learning outcomes in terms of an observable,**
  - **behavioural outcome; what the student will be able to do.**
  - **selection of an effective action verb is of utmost importance.**
  - **choose a verb that is focused and targets a level of performance appropriate for the course.**
- **2. Conditions**
  - **What is given? (by checking a chart , by looking at photo, by referring to the manual)**
  - **or not given (without reference to the manual, with no supervision)**
  - **What are the variables? (no matter how upset the customer becomes)**
  - **Combination (when driving (what is given) in the city (variable))**

Standards

- **Standards are measurable criteria:**
  - **How often?**
    - **at least once per hour at the start of every cycle**
    - **before starting the task or after**
  - **How well?**
    - **exactly 7%**
    - **no more than 1 error**
    - **accurate to three decimal points**
    - **within 15 minutes (never use a time standardunless it is required by the job)**
  - **How many?**
    - **Identify at least 16 items**
    - **produce 4 items**

3 components of a course outcome

1) Action verb

By the end of this course/semester, students should be able to:

- describe the principles used in designing X.
- evaluate the strengths and weakness of …

Well-written verbs must be (SMART)	Avoid these words
- Specific - Measurable - Achievable - Realistic - Time frame - Observable	- understand - appreciate - know - learn - aware - familiar

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Facets of Understanding
Wiggins & McTighe, 1998, page 44

When we truly understand,we

- *Can **explain***
- *Can **interpret***
- Can ***apply***
- Have ***perspective***
- Can ***empathize***
- Have ***self-knowledge***

3 components of a course outcome

2) Condition (context under which the behaviour is to occur)

- describe the principles used in designing X.(V)
- orally describe the principles used in designing X. (V&C)

- design a beam. (V)
- design a beam using Microsoft Excel design template . (V&C)

3 components of a course outcome

3) Standard (criteria of acceptable level of performance)

- describe the principles used in designing X.(V)
- orally describe the principles used in designing X. (V&C)
- orally describe the five principles used in designing X. (V&C&S)

- design a beam. (V)
- design a beam using Microsoft Excel design template . (V&C)
- design a beam using Microsoft Excel design template based on BS 5950:Part 1. (V&C&S)

Course Outcomes: An example

Identify the a) verb b) condition c) standard.

- From the first principles, calculate the beam deflection at the centre to within one decimal point.

Identify the a) verb b) condition c) standard.

- write an effective course outcomes that include lower and higher order cognitive skills for a one-semester course.

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Course outcomes for this component of the workshop

By the end of the workshop, participants should be able to:

1) Write an effective learning outcomes that include lower and higher order cognitive skills for a one-semester course.
2) develop learning outcomes that show the incorporation of affective and psychomotor skills through the content area of the course.
3) analyse and evaluate learning outcomes, and make suggestions for improvement.

Common weaknesses in writing CO

- Non-observable/Non-measurable CO
- Vague CO or CO that are too broad or general

At the end of the course, the students are able to:

1. understand the theory of X.
2. know how to write an effective learning outcomes
3. appreciate the importance of keeping the environment clean.

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

1. use the computer.
2. make presentations.
3. comment on designs.
4. design research

Improve on the following learning outcomes by adding a condition and standard

Poor

- Students should be able to design research.

Better

- Students should be able to independently design and carry out experimental and correlational research.

Best

- Students should be able to independently design and carry out experimental and correlational research that yields valid results.

Source: Bergen, R. 2000. A Program Guideline for Outcomes Assessment at Geneva College

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Cognitive, Affective and Psychomotor Domains

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The 3 Domains of Educational Goals

Cognitive
The Head

Affective
The Heart

Psychomotor
The Hand

3H

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Course outcomes

DOMAINS	Cognitive	Affective	Psychomotor / skills
Higher order	Evaluation	Exhibit,display, demonstrate	Naturalisation
	Synthesis	organisation	Articulation
	Analysis	Valuing	Precision
	Application	Responding	Manipulation
lower order	Comprehension	Receiving	Imitation
	Knowledge		

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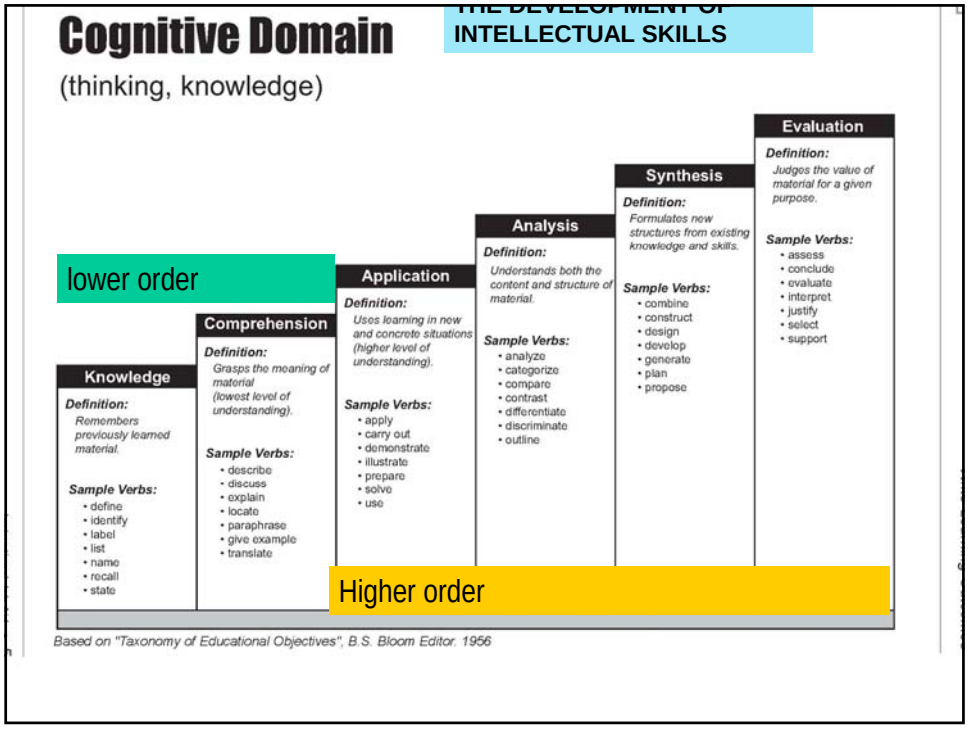


Bloom's Taxonomy

Categories in the Cognitive Domain (Taxonomy of Educational Objectives, Bloom, 1956)	
Level 1 – Knowledge The remembering of previously learned material. This may involve the recall of a wide range of material, from specific facts to complete theories, but all that is required is the bringing to mind of the appropriate information. Knowledge represents the lowest level of learning outcomes in the cognitive domain.	Defines, describes, identifies, labels, lists, matches, names, outlines, reproduces, selects, states. Eg. ▪ List the six levels in the cognitive domain of Bloom's taxonomy. ▪ Define… ▪ State the main principles of Theory X.
Level 2 – Comprehension The ability to grasp the meaning of material. This may be shown by translating material from one form to another, by interpreting material (explaining or summarising), and by estimating future trends (predicting consequences or effects). These learning outcomes go one step beyond the simple remembering of material, and represent the lowest level of understanding.	Converts, defends, distinguishes, estimates, explains, extends, generalises, gives examples, infers, paraphrases, predicts, rewrites, summarises. Eg. ▪ Describe three main features of … ▪ Explain the 3 main components of a learning outcome. ▪ Summarise the main causes of the American war in Iraq.

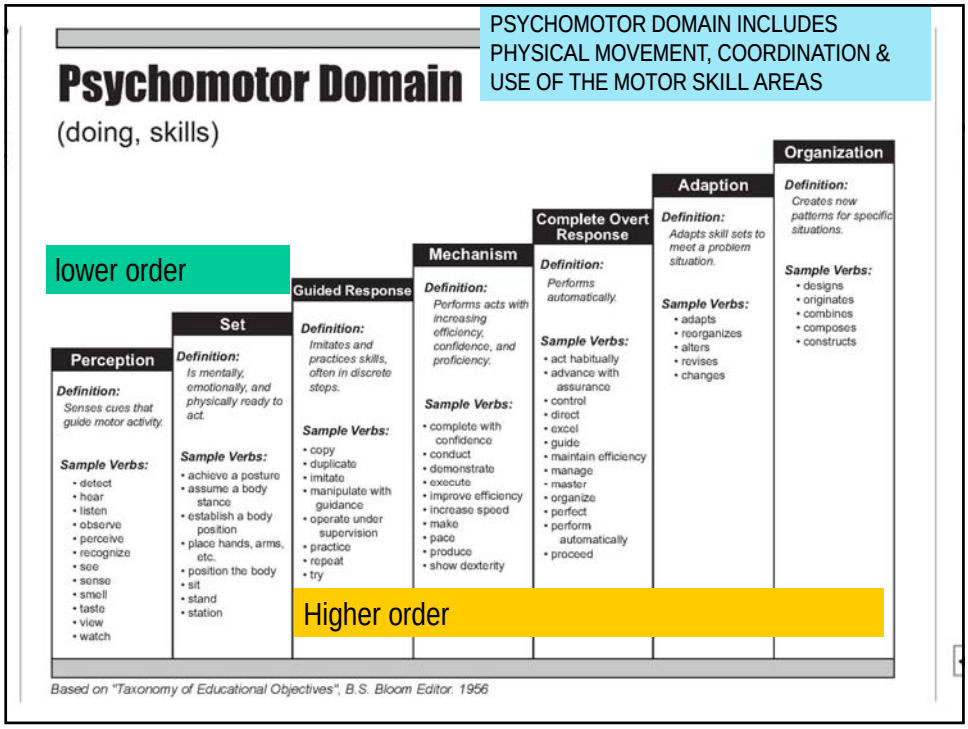
Bloom's Taxonomy

Level 3 – Application The ability to use learned material in new and concrete situations. This may include the application of such things as rules, methods, concepts, principles, laws and theories. Learning outcomes in this area require a higher level of understanding than those under 'Comprehension'.	Changes, computes, demonstrates, discovers, manipulates, modifies, operates, predicts, prepares, produces, relates, shows, solves, uses. E.g.: ▪Construct measurable learning outcomes that include lower and higher order cognitive skills for a one-semester course.
Level 4 – Analysis The ability to break down material into its component parts so that its organisational structure may be understood. This may include the identification of the parts, analysis of the relationships between parts, and recognition of the organisational principles involved. Learning outcomes here represent a higher intellectual level than 'Comprehension' and 'Application' because they require an understanding of both the content and the structural form of the material.	Breaks down, differentiates, discriminates, distinguishes, identifies, illustrates, infers, outlines, points out, relates, selects, separates, subdivides e.g.: ▪Analyse authentic data from various sources and prepare…

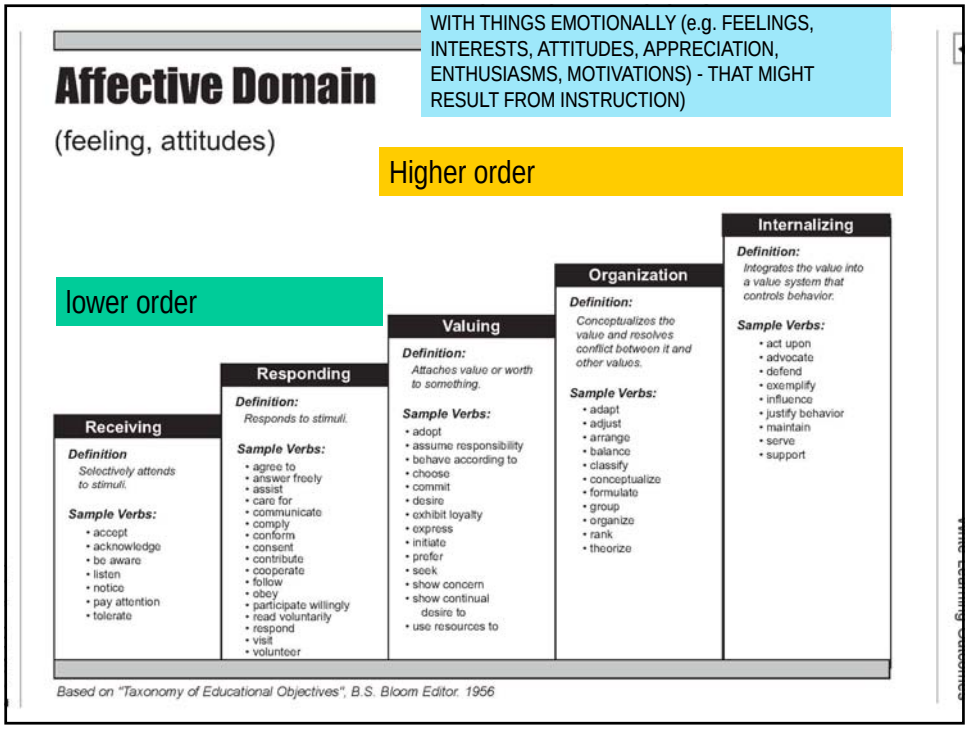
Bloom's Taxonomy

Level 5 – Synthesis The ability to put parts together to form a new whole. This may involve the production of a unique communication (theme or speech), a plan of operations (research proposal), or a set of abstract relations (scheme for classifying information). Learning outcomes in this area stress creative behaviours, with major emphasis on the formulation of *new* patterns or structures.	Categorises, combines, compiles, composes, creates, devises, designs, explains, generates, modifies, organises, plans, rearranges, revises, rewrites, summarises, tells, writes. e.g.: ▪Analyse authentic data from various sources and prepare a recommendation report for a specified audience.
Level 6 – Evaluation The ability to judge the value of material. The judgements are to be based on definite criteria. These may be internal criteria (organisational) or external criteria (relevance to the purpose) and the student may determine the criteria or be given them. Learning outcomes in this area are highest in the cognitive hierarchy because they contain elements of all the other categories, plus conscious value judgements based on clearly defined criteria.	Appraises, compares, concludes, contrasts, criticises, describes, discriminates, explains, justifies, interprets, relates, summarises, supports. e.g ▪Evaluate the strengths and weaknesses of the cognitive domain of Bloom's taxonomy in relation to the National Educational Philosophy.

PSYCHOMOTOR DOMAIN INCLUDES PHYSICAL MOVEMENT, COORDINATION & USE OF THE MOTOR SKILL AREAS



WITH THINGS EMOTIONALLY (e.g. FEELINGS, INTERESTS, ATTITUDES, APPRECIATION, ENTHUSIASMS, MOTIVATIONS) - THAT MIGHT RESULT FROM INSTRUCTION)



Writing Course Outcomes for Psychomotor and Affective Domains

Examples : Graduate Attributes

- Communication
- Team working
- Problem Solving
- Leadership
- Life long Learning
- Entrepreneurship
- Ethics and Integrity

GS in "LO" & GS in "GS Addressed"

GS in Learning Outcomes	GS Addressed
■ Addressed and assessed	■ Addressed and not assessed
■ Entered into curriculum mapping as "1" (at program level)	■ Entered into curriculum planning as "2" (at program level)

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Writing Course Outcomes for Psychomotor and Affective Domains

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

1) independently seek and present information on the collapse of the WTC (Lifelong Learning & Communication Skills)
2) participate actively in class discussion on issues related to ... (Communication Skills)
3) work collaboratively in groups to complete an assigned project on… (Teamworking)
4) demonstrate positive teamworking attributes by contributing actively in group projects. (Teamworking)

Course Outcomes for Generic Skills

Cont…

5) state and critically evaluate the main principles of .... (Problem Solving)
6) analyse data gathered from a target situation analysis and design instructional materials for a specific group of learners. (Problem Solving)
7) orally present information and answer questions with confidence on an assigned project. (Comm. Skills and Self-Esteem)
8) apply principles of management in organising an assigned project within stipulated schedules and with available resources. (Teamworking & Adaptability)

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Cont…

Able to work effectively in a team producing a design report within a stipulated timeframe

Able to prepare structural design report, drawing plan and structural element detailing before week 15

Able to apply professional practice and ethics within a given time frame

Writing learning outcomes for Graduate Attributes

- Communicate effectively and work collaboratively as a team with patients, families and the community as well as other health professionals. (QA, C&S)
- Communicate effectively with colleagues, customers/clients and community at large. (QA, C&S)

Comm. Skills & Teamworking

Writing learning outcomes for Graduate Attributes

- Utilise a range of resources, including ICT, to independently seek, organise and present information.
- Actively seek, evaluate and validate information as well as use appropriate technology to improve nursing practice and education. (QA, C&S)

Lifelong Learning

- Assume responsibility for self-development and life-long learning. (QA, C&S)

Writing learning outcomes for Graduate Attributes

- Demonstrate conduct that is consistent with business ethics and local culture. (QA, C&S)
- Demonstrate professional behaviour and personal values in the delivery of healthcare which comply with the code of conduct and nursing ethics. (QA, C&S)
- Demonstrate professional ethics and moral responsibilities in their practice. (QA, C&S)

Ethics & Integrity

Learning outcomes – Cont'd

independently acquire and present information on some key issues in second language acquisition.

GS – Lifelong Learning & Communication Skills

Learning outcomes – Cont'd

4)work in groups to collaboratively plan and conduct a small-scale classroom study related to second language learning.

GS – Teamworking

Writing learning outcomes for Graduate Attributes

- Critically analyze and identify engineering problems and formulate appropriate solutions using systems approach wherever relevant. (QA, C&S)
- Recognise the need for change and to assume leadership in the change process with creativity and innovativeness. (QA, C&S)

Problem Solving & Adaptaililty

Learning Outcomes – By Course Participants

SBT:

- Prepare a strategic marketing plan for a 10-acre development site using updated information (year 2000 and above) from at least four types of information sources. (Subject: Property Marketing – Janice)
- Develop a programme using C++ language within two hours with the correct output. (Subject:Programming Techniques)

Planning CO at Subject Level: A Reminder

- Examine the curriculum and refer to the programme outcomes.
- Examine the type of students and resources available.
- Include course outcomes for cognitive, psychomotor and affective domains.
- Include higher order skills/ taxonomy level.
- As far as possible, embed the affective and psychomotor domain in content (eg. incorporate generic skills through the content of the course).

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Checklist for writing course outcomes

- Focus on outcomes, not processes
- Start each outcome with an action verb.
- Its good to use only one action verb per learning outcome
- Avoid vague verbs such as *know* and *understand*.
- Check that the verbs used reflect the level of learning required.
- Ensure that outcomes are observable and measurable.
- Write the outcomes in terms of what the learner does, not what the instructor does.
- Check that the outcomes reflect knowledge, skills, or attitudes required in the workplace.
- Include outcomes that are woven into the entire course (such as *work effectively in teams*).
- Check that there are the appropriate number of outcomes (no more than three per major topic)
- List the sub-outcomes for each outcome
- Check that the outcomes fit within program and course goals

Workshop 1:
Writing course learning outcomes for GS

- Using the Template *Modul Tahap 1*
- Write your *Modul Tahap 1* by incorporating the relevant Graduate Attributes that you want to address in your subject
- Choose the preferable GS that you think important that you want to assess
- Develop the Learning Outcome for the chosen attributes/GS

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UTM Graduate Attributes

In line with UTM's vision and mission statements, the University is committed to graduating competent, creative and versatile professionals who are guided by high moral and ethical values in the service of God and mankind. This will require graduates with sound disciplinary and professional knowledge, and effective skills in communication, teamworking, problem solving and lifelong learning.

The University has therefore identified a range of attributes and generic skills which will enable our graduates to function effectively in a wide range of social and professional contexts. The development of these attributes will be embedded within the contexts of the students' discipline or professional field.

* Version 2 (November 2006)

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UTM Graduate Attributes*

1. Communication Skills
2. Critical Thinking and Problem Solving Skills
3. Teamworking Skills
4. Lifelong Learning and Information Management Skills
5. Entrepreneurship Skills
6. Leadership Skills
7. Ethics and Integrity

* Version 2 (November 2006)

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Communication Skills

Communication skills incorporate the ability to communicate effectively in Bahasa Melayu and English across a range of contexts and audiences

CS1 Ability to present ideas clearly, effectively and confidently through written and oral modes.

CS2 Ability to listen actively and respond accordingly.

CS3 Ability to make clear and confident presentation appropriate to audience.

CS4 Ability to use technology in presentation.

CS5 Ability to negotiate and reach agreement.

CS6 Ability to communicate with people of different culture.

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Critical Thinking and Problem Solving Skills

Critical thinking and problem solving incorporate the ability to think critically, logically, creatively and analytically.

CTPS1 Ability to define and analyse problems in complex, overlapping, ill-defined domains and make well-supported judgment.

CTPS2 Ability to apply and improve on thinking skills, especially skills in reasoning, analysing and evaluating.

CTPS3 Ability to look for alternative ideas and solutions.

CTPS4 Ability to 'think outside the box'.

CTPS5 Ability to understand and adapt to the culture of a new community and working environment.

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Teamworking Skills

Teamworking incorporates the ability to work with other people with different background to achieve a common goal.

TW1 Ability to establish good rapport, interact with others and work effectively with them to meet common objectives.

TW2 Ability to comprehend and assume the interchangeable role of leaders and followers.

TW3 Ability to recognise and respect the attitudes, actions and beliefs of others.

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Lifelong Learning and Information Management Skills

Lifelong learning incorporates the ability to continue learning independently in the acquisition of new knowledge and skills.

LL1 Ability to seek and manage relevant information from a variety of sources.

LL2 Ability to accept new ideas and to learn independently in the acquisition of new knowledge and skills.

LL3 Ability to develop an inquisitive mind driven by a passion for knowledge acquisition.

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Entrepreneurship Skills

Entrepreneurship incorporates the ability to analyse situations and recognise opportunities to use one's knowledge and skills for business opportunities.

ES1 Ability to identify business opportunities.

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Leadership Skills

Leadership incorporates knowledge of the basic principles of leadership and application of the traits of leadership in one's interaction with others.

LS1 Ability to demonstrate basic knowledge of leadership.

LS2 Ability to lead.

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Ethics and Integrity

Ethics incorporates the ability to apply high ethical standards in professional practice and social interactions.

ET1 Ability to act ethically and with a high sense of social responsibility.

ET2 Ability to analyse and make ethical decisions when solving problems.

ET3 Ability to understand the economic, environmental and socio-cultural impacts of professional practice.