Sijil Pengajaran Pengajian Tinggi, 2018
(Module 3C – Generic Skills)

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LEARNING OUTCOMES

At the end of this module, participants should be able to:

1. Explain the need, importance and your role in developing generic skills (GS) to your students.
2. Identify appropriate GS elements to be included in your course.
3. Plan and prepare T&L activities that enable GS to be effectively developed
4. Appropriately assess and evaluate students’ GS achievement
Generic skills are the general, overarching skills, qualities, knowledge, abilities and traits that a person should possess to succeed in one’s studies and career.

Graduate attributes are the institutionally nurtured personal qualities that reflect one’s mastery of generic skills in life.
GS DEFINITION: ACROSS THE GLOBE

- U.K. • Core skills, key skills, common skills
- N.Z. • Essential skills
- Australia • Key comp., employability skills, g.s.
- Canada • Employability skills
- U.S. • Basic skills, workplace know-how
- S’pore • Critical enabling skills
- France • Transferable skills
- Switz. • Trans-disciplinary goals
Skills that are transferable – skills that were acquired from one learning environment, adapted and applied well in another environment.

eg. Presentation skills that were acquired from, say an English for Communication Course, be able to be adapted and applied in undergraduate project presentation seminar, and later in the departmental meeting at work place.
Education is all about making a person a Good Human Being. A good human being is a person who do good to him/her self, to his/her family, to the society, to the nation and to other human being and other creations.
OUTCOME BASED EDUCATION: ALL ABOUT A HUMAN BEING

MIND / MENTAL (Cognitive Domain / Knowledge)

TECHNICAL KNOWLEDGE

SOUL / HEART (Affective Domain / Attitude)

BODY / PHYSICAL (Psychomotor Domain / Skills)

HUMAN DEVELOPMENT

BALANCED

GENERIC SKILLS
Education in Malaysia is an on-going effort towards further developing the potential of individuals in a holistic and integrated manner, so as to produce individuals who are intellectually, spiritually, emotionally and physically balanced and harmonious, based on a firm belief in and devotion to God. Such and effort is designed to produced Malaysian citizens who are knowledgeable and competent, who possess high moral standards, who are responsible and capable of achieving a high level of personal well-being as well as being able to contribute to the betterment of the family, society and the nation at large.

(Ministry of Education, Malaysia, 1996)
Malaysia Education Blueprint 2015 – 2025 (Higher Education)

EDUCATION : NATIONAL PHILOSOPHY

1. Graduan Holistik, Berciri Keusahawanan dan Seimbang
2. Kecemerlangan Bakat
3. Menghayati Pembelajaran Sepanjang Hayat
4. Graduan TVET Berkualiti
5. Kemampuan Kewangan
6. Pemantapan Tadbir Urus
7. Ekosistem Inovasi
8. Keunggulan Global
9. Pembelajaran Dalam Talian Tahap Global
10. Transformasi Penyampaian Pendidikan Tinggi

Bakat Terpelajar Dipacu Nilai

www.utm.my
ALIGNMENT OF MALAYSIA EDUCATION BLUEPRINT (HIGHER EDUCATION) & PELAN GLOBAL UTM

1. Excellence in Learning and Teaching, and Transformative Campus Experience
2. Research Excellence, Industry and Community Engagement
3. Sustainable Campus, Infrastructure, Information and Communication Technology (ICT) System
4. Talent Transformation, Governance and High Performance Delivery
5. Advancement and Business Development for Financial Sustainability
6. Global Prominence and Branding
### Holistic, Entrepreneurial & Balanced Graduates: Initiatives

<table>
<thead>
<tr>
<th>Curriculum Structure &amp; Programme</th>
<th>T&amp;L</th>
<th>Academic Culture</th>
<th>Entrepreneurial Culture</th>
<th>Academic Advising &amp; Career Guidance</th>
<th>Student Life</th>
</tr>
</thead>
<tbody>
<tr>
<td>2u2i</td>
<td>NALI MOOCs UTM-MIT Blossoms Open Courseware Edutainment E-Learning Gamification</td>
<td>CEO @ Faculty Program Industrial Seminar/ Talk Global Mindset Student Mobility Program (GOP, Internship, Study Abroad) Rebrand cross campus programme Student Innovation Centre 5 ETP Multi-lingual Attached/ loyal alumni Conducive campus ecosystem Capstone Projects Research Students Experience (Research Attachment for Doctoral Students) 3 Minute Thesis PG International Conference</td>
<td>UTMGems (Graduates with entrepreneurial, innovative and global mindset) Jobs on campus Job creator Business Incubator Case study of local entrepreneur Entrepreneurial grooming to UTM unemployed graduates Academic entrepreneur (Training, LI) Alumni Mentor-Mentee Siswapreneur@PPRN - entrepreneurial skills, TOT for academic staff</td>
<td>Career Centre Professional Skills Certificate (PSC) Mentoring Jobs4u My Talent Exchange System E-portfolio Employability Skills Alumni Engagement</td>
<td>Characters Building Volunteerism Student Development Program Total Campus Experience CSR with Industry MyUTM/UTMAcad Entrepreneurial development of students through UTM subsidiaries Life Skills Community Engagement Network for Innovation (CENI)</td>
</tr>
</tbody>
</table>

- 2u2i
- 3u1i
- Flexible Education
- Multi-Disciplinary Program
- APEL (c)
- Revised Curriculum
- Common Universities Courses
- Minor Entrepreneurship
- Entrepreneurship Certificate with Industry
- iCGPA
FUTURE READY GRADUATES

HOLISTIC, ENTREPRENEURIAL, BALANCED

21st CENTURY SKILLS

LIFELONG LEARNERS

MULTIPLE INTELLIGENCE

COMPUTATIONAL THINKERS
GA: STAKEHOLDERS PERSPECTIVES

Have you got what it takes?
Most sought-after traits in graduates

- Verbal and written communication skills: 68%
- Working experience: 68%
- Interpersonal skills: 56.2%
- Passion and commitment: 55.7%
- Team player: 47.8%
- The right degree: 46.3%
- Good academic results: 37.9%
- Desire to learn: 37.9%
- Work well under pressure: 34.0%
- Take initiative: 32.5%

Source: MEF Salary Survey for Executives 2010

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MASTERY OF 21st CENTURY SKILLS

21st-Century Skills

- **Foundational Literacies**
  - How students apply core skills to everyday tasks
  - 1. Literacy
  - 2. Numeracy
  - 3. Scientific literacy
  - 4. ICT literacy
  - 5. Financial literacy
  - 6. Cultural and civic literacy

- **Competencies**
  - How students approach complex challenges
  - 7. Critical thinking/problem-solving
  - 8. Creativity
  - 9. Communication
  - 10. Collaboration

- **Character Qualities**
  - How students approach their changing environment
  - 11. Curiosity
  - 12. Initiative
  - 13. Persistence/grit
  - 14. Adaptability
  - 15. Leadership
  - 16. Social and cultural awareness

Lifelong Learning
**TOP 10 SKILLS NEEDED TO THRIVE IN 4TH IR**

<table>
<thead>
<tr>
<th>in 2020</th>
<th>in 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Complex Problem Solving</td>
<td>1. Complex Problem Solving</td>
</tr>
<tr>
<td>2. Critical Thinking</td>
<td>2. Coordinating with Others</td>
</tr>
<tr>
<td>3. Creativity</td>
<td>3. People Management</td>
</tr>
<tr>
<td>4. People Management</td>
<td>4. Critical Thinking</td>
</tr>
<tr>
<td>5. Coordinating with Others</td>
<td>5. Negotiation</td>
</tr>
<tr>
<td>6. Emotional Intelligence</td>
<td>6. Quality Control</td>
</tr>
<tr>
<td>7. Judgment and Decision Making</td>
<td>7. Service Orientation</td>
</tr>
</tbody>
</table>

Source: Future of Jobs Report, World Economic Forum
• Technical skills
• Creativity and resourcefulnessness
• Interpersonal skills
• Business communication skill
• Analytical skills
• Goal oriented
• Team player
• Flexibility and resourcefulnessness
• Decision-making skills
• Leadership skills

Malaysian Fresh Grads Can't Get Jobs Because They Have Attitude Problems

Published by Nandini Balakrishnan — 10 Feb 2017, 05:57 PM

1. One in four fresh graduates in Malaysia remains unemployed for six months after their graduation.

2. Six out of those unemployed are below the age of 24.

3. A majority of unemployed fresh graduates are from public universities at 51%. This is despite the fact that 64% of employers that took part in a JobStreet survey said that it doesn’t matter to them on whether the graduates are from public, private or foreign universities.

4. 68% of employers think that Malaysian fresh graduates have unrealistic expectations for salary and employment benefits.

5. Three main reasons why fresh graduates remain unemployed are: poor attitude, lack of English proficiency, and poor communication skills.
Malaysian Fresh Grads Can't Get Jobs Because They Have Attitude Problems

"While fresh graduates can moan about how prospective employers are asking for experience and all that, it’s more to do with jobseekers' ability to be a better candidate for the job they're applying. And (for this) we need to look at the attitude.

"With unrealistic expectations, it becomes more difficult for a graduate to get employed for a job that offers a lower salary than what he or she is expecting," explained Chook when speaking to FMT.

Referring to an employers survey conducted by JobStreet in 2016, Chook, said that 60% of fresh graduates expect a starting salary of RM3,500 while another 30% wanted RM6,500 to fund their lifestyle
Five reasons why graduates are unemployed

KUALA TERENGGANU, Feb 27 — Lack of industrial training and poor English are among five factors why graduates are unemployed, according to a study conducted by the Federation of Malaysian Manufacturers (FMM).

Other factors are low problem-solving skills, job-hopping and lack of self-confidence, said Higher Education Ministry student development and affairs director Prof Dr Mohd Fauzi Ramlan.

Students walk in a hallway at the UiTM in Shah Alam. — Reuters pic
Fresh Graduate Competitive Advantages
Factors that give fresh graduates an extra advantage

- Has held a leadership position: 39%
- Has high academic scores: 25%
- Involved in extracurricular activities (clubs, sports, etc): 20%
- Has done volunteer work: 16%
STAKEHOLDERS PERSPECTIVE/VIEWS

• “They (foreign graduates) have the mindset to excel, wanting to learn more. Maybe because of the competitiveness which they have experienced overseas.”

  (Manufacturing/Foreign/Malay)

• “Foreign graduates are more independent. They can blend well easily with others. They are more expressive and creative in new ideas...and their command of English is certainly much better.”

  (Other services/Foreign/Chinese)
(i) **Engineering Knowledge** - Apply knowledge of mathematics, natural science, engineering fundamentals and an engineering specialisation as specified in WK1 to WK4 respectively to the solution of complex engineering problems;

(ii) **Problem Analysis** - Identify, formulate, conduct research literature and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences (WK1 to WK4);

(iii) **Design/Development of Solutions** - Design solutions for complex engineering problems and design systems, components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations (WK5);

(iv) **Investigation** – Conduct investigation of complex engineering problems using research-based knowledge (WK8) and research methods including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions;

(v) **Modern Tool Usage** - Create, select and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling, to complex engineering problems, with an understanding of the
(vi) **The Engineer and Society** - Apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice and solutions to complex engineering problems (WK7);

(vii) **Environment and Sustainability** - Understand and evaluate the sustainability and impact of professional engineering work in the solutions of complex engineering problems in societal and environmental contexts. (WK7);

(viii) **Ethics** - Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice (WK7);

(ix) **Individual and Team Work** - Function effectively as an individual, and as a member or leader in diverse teams and in multi-disciplinary settings;

(x) **Communication** - Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions;

(xi) **Project Management and Finance** - Demonstrate knowledge and understanding of engineering management principles and economic decision-making and apply these to one’s own work, as a member and leader in a team, to manage projects in multidisciplinary environments;

(xii) **Life Long Learning** - Recognise the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.
i. apply knowledge of mathematics, science, engineering fundamentals and engineering specialisation principles to defined and applied engineering procedures, processes, systems or methodologies;

ii. solve broadly-defined engineering problems systematically to reach substantiated conclusions, using tools and techniques appropriate to their discipline or area of specialisation;

iii. design solutions for broadly-defined engineering technology problems, and to design systems, components or processes to meet specified needs with appropriate consideration for public health and safety, as well as cultural, societal, environmental and sustainability concerns;

iv. plan and conduct experimental investigations of broadly-defined problems, using data from relevant sources;

v. select and apply appropriate techniques, resources and modern engineering tools, with an understanding of their limitations;

vi. function effectively as individuals, and as members or leaders in diverse technical

vii. communicate effectively with the engineering community and society at large;

viii. demonstrate an awareness of and consideration for societal, health, safety, legal and cultural issues and their consequent responsibilities;

ix. demonstrate an understanding of professional ethics, responsibilities and norms of engineering technology practices;

x. demonstrate an understanding of the impact of engineering practices, taking into account the need for sustainable development;

xi. demonstrate an awareness of management, business practices and entrepreneurship; and

xii. recognise the need for professional development and to engage in independent and lifelong learning.
## GS : IMPLEMENTATION

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<tr>
<th>STEP</th>
<th>IMPLEMENTATION</th>
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<td>STEP 1</td>
<td>Knowing GS / GA elements</td>
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<tr>
<td>STEP 2</td>
<td>Learning about Learning Domains and Taxonomy Levels</td>
</tr>
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<td>STEP 3</td>
<td>Adapting Constructive Alignment Concept (OBE)</td>
</tr>
<tr>
<td>STEP 4</td>
<td>Interpreting Course Learning Outcomes</td>
</tr>
<tr>
<td>STEP 5</td>
<td>Identify Appropriate Course Delivery</td>
</tr>
<tr>
<td>STEP 6</td>
<td>Plan and Develop Assessment Methods</td>
</tr>
<tr>
<td>STEP 7</td>
<td>Perform Analysis and Continuous Quality Improvements</td>
</tr>
</tbody>
</table>
Step 1: Knowing GS Elements
UTM GRADUATE ATTRIBUTES 2017

Communication Skills

❖ **CS1**  Ability to convey ideas in writing clearly, effectively and comprehensible.

❖ **CS2**  Ability to deliver ideas orally in a clear, effective and comprehensible manner.

❖ **CS3**  Ability to listen actively and respond accordingly.

❖ **CS4**  Ability to make clear presentations to a diverse audience with confidence.

❖ **CS5**  Ability to use a variety of media in presentations.

❖ **CS6**  Ability to negotiate and reach agreement.

❖ **CS7**  Ability to communicate with people from different cultures and backgrounds.

❖ **CS8**  Ability to use third language in conversations when the need arises.
Thinking Skills

❖ **TH1**  Ability to define and analyze complex, overlapping, ill-defined problems and make well-supported judgment.

❖ **TH2**  Ability to expand on and discuss ideas.

❖ **TH3**  Ability to look for alternative ideas and creative solutions.

❖ **TH4**  Ability to ‘think outside the box’.

❖ **TH5**  Ability to think critically.

❖ **TH6**  Ability to think holistically and systematically.
Scholarship

❖ **SC1** Ability to seek and manage relevant information from a variety of sources.
❖ **SC2** Ability to be receptive to new ideas towards self-directed or autonomous learning.
❖ **SC3** Ability to develop an inquisitive mind.
❖ **SC4** Ability to use systematic research methodology.
Leadership and Teamworking Skills

❖ TW1  Ability to establish rapport, interact and work effectively with others to accomplish common objectives.
❖ TW2  Ability to lead and influence team members to complete given tasks.
❖ TW3  Ability to understand other people’s attitude and behavior, respect their ideas and have mutual trust.
❖ TW4  Ability to understand responsibility towards group decision.
Adaptability

❖ AD1 Ability to adapt to the culture of new communities and work environment.
❖ AD2 Ability to recognize potential for improvement.
❖ AD3 Ability to apply known solutions to new situations.
❖ AD4 Ability to initiate and implement change.
❖ AD5 Ability to work effectively under pressure.
Global Citizen

❖ GC1  Spiritually grounded, compassionate and caring.
❖ GC2  Ability to keep updated with current world issues.
❖ GC3  Ability to act ethically in making decisions and interacting with the community.
❖ GC4  Ability to act professionally and responsibly in carrying out duties.
❖ GC5  Ability to understand the impact of socio-cultural, economic, environmental and politics on professional practices.
❖ GC6  Ability to practice and prioritize principles of sustainability in making decisions.
Enterprising Skills

❖ ES1  Ability to identify opportunities (including business).
❖ ES2  Ability to use innovative methods in dealing with issues.
❖ ES3  Willingness to take risks.
❖ ES4  Ability to use entrepreneurial mindset in dealing with problems.
❖ ES5  Ability to be resilient.
❖ ES6  Ability to act effectively and imaginatively in difficult situations.
Step 2: Learning

Learning Taxonomy
Learning Taxonomy

Affective values and attitudes

Psychomotor Skills

Cognitive Knowledge
Cognitive Domain

Bloom’s Taxonomy

1956

- High order: Evaluation, Synthesis, Analysis, Application, Comprehension
- Low order: Knowledge

Bloom’s Revised Taxonomy

2002

- High order: Create, Evaluate, Analyse, Apply
- Low order: Understand, Remember

Thinking

High order

Low order
# Affective Domain

**Feeling, Emotions, Attitude, Beliefs**

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

<table>
<thead>
<tr>
<th>LEVEL</th>
<th>DESCRIPTION</th>
<th>BEHAVIOUR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>RECEIVE</td>
<td>AWARENESS</td>
</tr>
<tr>
<td>2</td>
<td>RESPOND</td>
<td>REACT</td>
</tr>
<tr>
<td>3</td>
<td>VALUE</td>
<td>UNDERSTAND &amp; ACT</td>
</tr>
<tr>
<td>4</td>
<td>ORGANIZE</td>
<td>DEVELOP VALUE SYSTEM</td>
</tr>
<tr>
<td>5</td>
<td>INTERNALIZE</td>
<td>BEHAVE CONSISTENTLY</td>
</tr>
</tbody>
</table>

First developed by Bloom (1956), revised by Bloom, Krathwhol and Masia (1964)
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</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PERCEPTION</td>
<td>AWARENESS</td>
</tr>
<tr>
<td>2</td>
<td>SET</td>
<td>READINESS</td>
</tr>
<tr>
<td>3</td>
<td>GUIDED RESPONSE</td>
<td>ATTEMPT</td>
</tr>
<tr>
<td>4</td>
<td>MECHANISM</td>
<td>BASIC PROFICIENCY</td>
</tr>
<tr>
<td>5</td>
<td>COMPLEX OVERT RESPONSE</td>
<td>EXPERT PROFICIENCY</td>
</tr>
<tr>
<td>6</td>
<td>ADAPTATION</td>
<td>ADAPTABLE PROFICIENCY</td>
</tr>
<tr>
<td>7</td>
<td>ORIGINATION</td>
<td>CREATIVE PROFICIENCY</td>
</tr>
</tbody>
</table>
Step 3: Adapting Outcome Based Education
OBE : CONSTRUCTIVE ALIGNMENT

**OUTCOMES**

Bloom’s Taxonomy

Program Outcomes

Course-specific goals & objectives

DELIVERY

Act/Coop Lrn.
PBL

Technology

Lectures

Labs

Students

ASSESSMENT

Classroom assessment techniques

Final Exam

Other measures

Other experiences

Students

Bloom’s Taxonomy

Program Outcomes

Course-specific goals & objectives
OBE – is an Education System that;

- Makes the Learning Outcomes explicit and visible
- Aligns Assessment to the intended learning outcomes
- Aligns Delivery (Learning Activities & Environments) to the intended learning outcomes
- Provides necessary infrastructures and support system for the above to happen
OBE : THE APPROACH

3 Stages of Backward Design

Identify the Desired Results

Determine Acceptable Evidence

Plan Learning Experiences

Are the desired results, assessments, and learning activities ALIGNED?
OBE : THE APPROACH

SET/SELECT PO

DEVELOP CLO

KNOWLEDGE

GENERIC SKILLS

SELECT GS ELEMENTS

DECIDE ON TAXONOMY & LEVEL

T & L METHODS

ASSESSMENT TOOLS
Step 3 - Interpreting Learning Outcomes
Program Educational Objectives (PEO/PO) → 3 to 5 years after graduation

Programme Outcomes (PO/PLO) → Upon graduation

Course Learning Outcomes (CO/CLO) → After completing each course

Levels of Outcomes

What students are able to do
### PEO : 5 YEARS AFTER GRADUATION

<table>
<thead>
<tr>
<th>PEO</th>
<th>PEO STATEMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEO 1</td>
<td>Demonstrate their academic and technological excellence professionally and globally, particularly in areas related to naval architecture and offshore engineering practices and contribute innovatively to the nation’s wealth creation</td>
</tr>
<tr>
<td>PEO 2</td>
<td>Advance their careers by assuming increasing levels of responsibility, leadership and acquiring professional and advanced academic qualifications</td>
</tr>
<tr>
<td>PEO 3</td>
<td>Recognize and practice professional, ethical, environmental and societal responsibilities and value different global and cultural aspects of their work and society.</td>
</tr>
<tr>
<td>PEO 4</td>
<td>Adapt and communicate effectively and be successful working with multi-disciplinary teams</td>
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</tbody>
</table>
# PLO : UPON GRADUATION

<table>
<thead>
<tr>
<th>PO</th>
<th>PO STATEMENTS</th>
<th>KEYWORDS</th>
<th>MAPPING TO EAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLO 1</td>
<td>Ability to acquire and apply fundamental knowledge of mathematics, science and engineering principles to solve complex naval architecture and offshore engineering problems.</td>
<td>Engineering Knowledge</td>
<td>i (Engineering Knowledge)</td>
</tr>
<tr>
<td>PLO 2</td>
<td>Ability to identify, formulate and analyse complex naval architecture and offshore engineering problems.</td>
<td>Problem Analysis</td>
<td>ii (Problem Analysis)</td>
</tr>
<tr>
<td>PLO 3</td>
<td>Ability to design solutions for complex naval architecture and offshore engineering problems that fulfill health, safety, societal and environmental needs by using conventional or modern tools.</td>
<td>Design Solutions Using Conventional / Modern Tools</td>
<td>iii (Design / Development of Solutions), vii (Modern Tool Usage)</td>
</tr>
<tr>
<td>PLO 4</td>
<td>Ability to investigate complex naval architecture and offshore engineering problems using research-based knowledge and methods to produce conclusive results.</td>
<td>Investigation</td>
<td>iv (Investigation)</td>
</tr>
<tr>
<td>PLO 5</td>
<td>Ability to practice professional ethics related to societal, health, safety and legal issues with full responsibility and integrity.</td>
<td>Professional Ethics and Society</td>
<td>vi (The Engineer and Society), viii (Ethics)</td>
</tr>
<tr>
<td>PLO</td>
<td>Ability</td>
<td>Competency</td>
<td>Code</td>
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<tr>
<td>PLO 6</td>
<td>Ability to identify the impact of naval architecture and offshore engineering solutions on sustainability and demonstrate the needs for sustainable development.</td>
<td>Sustainability</td>
<td>vii</td>
</tr>
<tr>
<td>PLO 7</td>
<td>Ability to communicate effectively on complex naval architecture and offshore engineering activities both orally and in writing</td>
<td>Communication</td>
<td>ix</td>
</tr>
<tr>
<td>PLO 8</td>
<td>Ability to work productively as an individual, and as a member or leader in a team that may involve multidisciplinary settings</td>
<td>Team Work</td>
<td>x</td>
</tr>
<tr>
<td>PLO 9</td>
<td>Ability to undertake life-long learning and manage information including conducting literature study.</td>
<td>Life Long Learning</td>
<td>xi</td>
</tr>
<tr>
<td>PLO 10</td>
<td>Ability to demonstrate and apply knowledge on finance and management principles and acquire entrepreneurship skill</td>
<td>Management, Finance &amp; Entrepreneurship</td>
<td>xii</td>
</tr>
<tr>
<td>No.</td>
<td>Course Learning Outcomes (CLO)</td>
<td>Programme Learning Outcomes (PO)</td>
<td>Delivery (Teaching Methods)</td>
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<tr>
<td>-----</td>
<td>-----------------------------------------------------------------------------------------------</td>
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<td>------------------------------</td>
</tr>
<tr>
<td>1</td>
<td>Design and Analyse the strength of the Midship Structures of the ship being designed</td>
<td>2</td>
<td>3(iii)</td>
</tr>
<tr>
<td>2</td>
<td>Calculate and Analyse the stability of the ship being designed</td>
<td>3(ii)</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>Determine the material weight, center of gravity, and cost of the ship structures being designed</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>Produce and present design report according the specific format for the design project</td>
<td>3(ii)</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Plan, manage, deliver the design work effectively within the stipulated time and determine the design project cost appropriately</td>
<td>3</td>
<td>P4</td>
</tr>
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</table>

**Programme**: Bachelor of Engineering (Mechanical-Marine Technology)  
**Course Code & Name**: SMK 4542 (Ship Design III)
### CLO: UPON COMPLETING A COURSE

<table>
<thead>
<tr>
<th></th>
<th>Contribute effectively and assume professional responsibility as either member or leader of the team in carrying out the design tasks.</th>
<th></th>
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<tbody>
<tr>
<td>6.</td>
<td>2</td>
<td>3</td>
<td>A3</td>
<td>No major group crisis Achieve 80% group objective and adhere to group policies</td>
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<table>
<thead>
<tr>
<th></th>
<th>Discuss sustainable issues that could be addressed in the design task being carried out</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>7.</td>
<td>2</td>
<td>A2</td>
<td>Self Study</td>
<td>Design Sustainability Assignment</td>
<td>100% participation</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Acquire and applied additional knowledge from other sources in solving the design problem</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>8.</td>
<td>2</td>
<td>A3</td>
<td>Self Study</td>
<td>Design Report &amp; Portfolio</td>
<td>100% list at least 2 additional sources</td>
<td></td>
</tr>
</tbody>
</table>

**Overall**

<table>
<thead>
<tr>
<th></th>
<th>3(ii)</th>
<th>3(iii)</th>
<th>2</th>
<th>2</th>
<th>3(ii)</th>
<th>3</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
</table>

**Key:**

3 = major contribution to outcome; 2 = moderate contribution to outcome; 1 = minor contribution to outcome
1. Select **ONE course learning outcome (CO)** that addresses GS

At the end of this course students should be able to;
**Work in team** effectively by organizing, discussing, distributing and carrying out the design tasks

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

Given Design Project and putting the students in groups of 3, they should;
- **Select Team Leader** (Rotational basis) and establish **Team Policy**
- **Teach, motivate and support** each other
- **Plan and Distribute** the design task fairly
- **Carry out the task individually but must report to other members**
- **Conduct weekly meeting or discussion session**
- **Resolve Conflict** (if any)
- **Documents all activities**
3. Does it fall under **Technical Knowledge** or **Generic Skills**?

   - **Generic Skill**

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

   - **TW1 - TW4**

5. Identify Which **Learning Domain** that the outcome is addressing?

6. At What **Level of Taxonomies**?

   - **Affective domain (GS) at Level 3 - Value**
Step 5: Identify Appropriate Course Delivery
OBE - T & L METHODS

LECTURES

ACTIVE LEARNING

E-LEARNING

LIFE LONG LEARNING

COOPERATIVE LEARNING

PROBLEM BASED / LAB WORK / PROJECT

FIELD STUDY / VISITS
Student-centered instruction [SCI] is an instructional approach in which students influence the content, activities, materials, and pace of learning. This learning model places the student (learner) in the center of the learning process. The instructor provides students with opportunities to learn independently and from one another and coaches them in the skills they need to do so effectively. The SCI approach includes such techniques as substituting active learning experiences for lectures, assigning open-ended problems and problems requiring critical or creative thinking that cannot be solved by following text examples, involving students in simulations and role plays, and using self-paced and/or cooperative (team-based) learning. Properly implemented SCI can lead to increased motivation to learn, greater retention of knowledge, deeper understanding, and more positive attitudes towards the subject being taught.

(Collins & O'Brien, 2003)
SCL : CHARACTERISTICS

- Student take charge of his/her own learning process
- Lecturer provide independent learning opportunity and coach the learning process
- Involve active learning, open end problem solving, critical and creative thinking, role play, team working

In doing so, the students will not only enhancing their learning ability, but also developing some of the desired generic skills.
ALL ABOUT SCL

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

Pembelajaran berasaskan:

- Masalah
- Kajian kes
- Cabaran
- Permainan
- Pertanyaan
- Penemuan
- Kooperatif
- Projek berorientasikan masalah
- Aktif
- Sesawang
- Pengalaman
- Komputer
- Projek
- Senario
- Lapangan

Sumbang saran

Arahan rakan sebaya

Mini Syarahan
1. Select **ONE course learning outcome (CO)** that addresses GS

At the end of this course students should be able to; 
**Work in team** effectively by organizing, discussing, distributing and carrying out the design tasks

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

I am implementing **Cooperative Learning Technique**
- Assign group of 3-4 students with rotational role of group leader
- Gives Design Task to students (Similar task but different requirements)
- Planning, Scheduling and Distribution of design activities
- Meeting and discussion during ant outside class
- Peer teaching / sharing (Jigsaw Technique)
- Progress meeting every week
Step 6: Plan and Develop

Course Assessment
## ASSESSMENT: THE TOOLS

<table>
<thead>
<tr>
<th>OUTCOMES</th>
<th>POSSIBLE ASSESSMENT TASKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Describe</td>
<td>essay question, exam, oral presentation (peer assessment)</td>
</tr>
<tr>
<td>Explain</td>
<td>assignment, essay question exam, oral, letter-to-a-friend</td>
</tr>
<tr>
<td>Integrate</td>
<td>project, assignment</td>
</tr>
<tr>
<td>Analyse</td>
<td>case study, assignment</td>
</tr>
<tr>
<td>Apply</td>
<td>project, case study, experiment</td>
</tr>
<tr>
<td>Solve problems</td>
<td>project, experiment</td>
</tr>
<tr>
<td>Design, create</td>
<td>project, experiment</td>
</tr>
<tr>
<td>Reflect</td>
<td>reflective diary, portfolio, self-assessment</td>
</tr>
<tr>
<td>Communicate</td>
<td>a range of oral, writing or listening tasks, e.g. presentation, debate, role play, reporting, assignment, paraphrasing, answering questions etc.</td>
</tr>
</tbody>
</table>
1. Select ONE course learning outcome (CO) that addresses GS

At the end of this course students should be able to;
*Work in team* effectively by organizing, discussing, distributing and carrying out the design tasks

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

- Ability to Plan and Distribute the Job together
- Ability to Perform individual task and share with others
- Ability to take responsibility as leader or member
- Ability to deliver the job and document the process

*(Measured through Project Portfolio and Peer Assessment)*
Overall Steps
OBE: THE APPROACH

- SET/SELECT PO
- DEVELOP CLO
- KNOWLEDGE
- GENERIC SKILLS
- SELECT GS ELEMENTS
- DECIDE ON TAXONOMY & LEVEL
- T & L METHODS
- ASSESSMENT TOOLS
CO STATEMENT: Able to identify and discuss potential conflict of interest between financial, environment and social needs within the context of the course / subject learned.

GC5  Ability to understand the impact of socio-cultural, economic, environmental and politics on professional practices.
CO STATEMENT : Able to identify and discuss potential conflict of interest between financial, environment and social needs within the context of the course / subject learned

T&L ACTIVITIES :
Assignment given to students, working in groups of 3-4. Reading and searching for information on related issues & cases from various sources (internet, new papers etc). Brainstorming and discussion session within the group. Preparing presentation slide. Rehearsal session within the group.

SCHEDULE :
Week 3 : Briefing on the outcomes and assignment. Week 4 : Initial Brainstorming within the group. Week 5 - 8 : Searching for information. Week 9 -11 : Further Discussion. Week 12 : Preparing slides and rehearsal session

ASSESSMENT :
Based on group presentation and Q&A session in class. Assessed by lecturer and students of other groups. Mark will also be given to the group that asks questions during the Q&A session. Assessment done using rubric based on appropriate criteria.

IMPLEMENTING GS

IMPLEMENTING GS

GC5
AFFECTIVE DOMAIN
LEVEL 2 (RESPOND)

LEVEL 2 (RESPOND)

IMPLEMENTING GS

IMPLEMENTING GS

LEVEL 2 (RESPOND)
CLO 1 Write a Formal Report that describe relevant process in company according to standard technical report format within the given time

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

PO 4

Generic Skills

CS 1

Psychomotor

Level 4

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

Measured using Template with holistic rubric
## IMPLEMENTING GS

### CLO MAPPING

<table>
<thead>
<tr>
<th>NO</th>
<th>COURSE LEARNING OUTCOMES</th>
<th>PERFORMANCE CRITERIA</th>
<th>TK / GS</th>
<th>DOMAIN / ELEMENTS</th>
<th>LEVEL</th>
<th>PO</th>
<th>T&amp;L</th>
<th>ASSESSMENT</th>
</tr>
</thead>
</table>
| 1  | Work in team effectively by organizing, discussing, distributing and carrying out the design tasks | Able to;  
- Plan and Distribute the Job.  
- Perform individual task and share with others  
- Take responsibility as leader or member  
- Deliver the job and document the process | GS | A (TW 1 & TW 2 / TS 1 – TS 5) | 3 (Value) | PO XX | Cooperative Learning | Project Portfolio and Peer Assessment |
| 2  | | | | | | | |
| 3  | | | | | | | |
| 4  | | | | | | | |
| 5  | | | | | | | |
Concluding Remarks
CONCLUDING REMARKS

- GS are **essential students outcomes** / attributes that MUST be developed and measured.
- All of us are **collectively responsible** for developing and enhancing students GS.
- The T&L and assessment must be **aligned** to the intended learning outcomes.
- Need to **equipped ourselves with the knowledge** of GS and implement it in class.
The End

Credits to Tn. Haji Yahya Samian, UTM Engineering for contributing to most parts of the presentation