

# **Applying Constructive Alignment to Teaching Learning and Assessment**

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## ***Activity 1***

***Write down three outcomes that you would like to  
achieve in attending this workshop.***

## **The Intended Outcomes of This Workshop**

- 1. Explain constructive alignment.**
- 2. Identify intended learning outcomes for one of your courses.**
- 3. Design teaching/learning activities to best achieve one of the intended learning outcomes.**
- 4. Design tasks to assess how well the intended learning outcome has been achieved.**
- 5. Design means to evaluate your teaching.**
- 6. Reflect on the impact of this workshop on your role as a trainer for implementing constructive alignment in teaching and assessment.**

**Any other outcomes you would like to achieve?**

## ***Activity 2***

***Form groups of twos.***

***Group member A: explains the concept of constructive alignment to your partner.***

***Group member B: provides feedback to your partner on his/her explanation.***

## **Student-centred Learning**

**The focus of teaching and learning is not what we teach but what we would like our students to learn and how we can help them achieve that.**

**The first step therefore is to define the intended learning outcomes for our students.**

**Teaching and assessment are then designed and implemented to align to these outcomes.**

## **Intended Learning Outcomes (ILOs)**

- **Statements of what students are expected to be able to do as a result of engaging in the learning process (studying a programme/course).**
- **ILOs should reflect the level of the programme/course.**
- **Expressed from the students' perspective (as different from *objectives*).**
- **Expressed in the form of action verbs leading to observable and assessable outcomes.**
- **Related to criteria for assessing student performance.**

## The Verbs in the ILOs

- . It is useful to express ILOs by using appropriate *verbs*.
- . Teaching is specifically aimed at *activating* those verbs.
- . Students should be unable to complete the assessment tasks unless they enact the same verbs that are in the ILOs (criterion-referenced).
- . Generic high level verbs include: *apply, conceptualise, reflect, create original insights, solve unseen problems, generate new alternatives, critically review*. Such verbs might typically be used to define an A grade in meeting the ILOs, depending on the course. Low level verbs such as *describe, identify*, would be more frequent in defining a passing grade.

## Intended Learning Outcomes (ILOs)

### ***Institutional* level (HEI Learning Outcomes)**

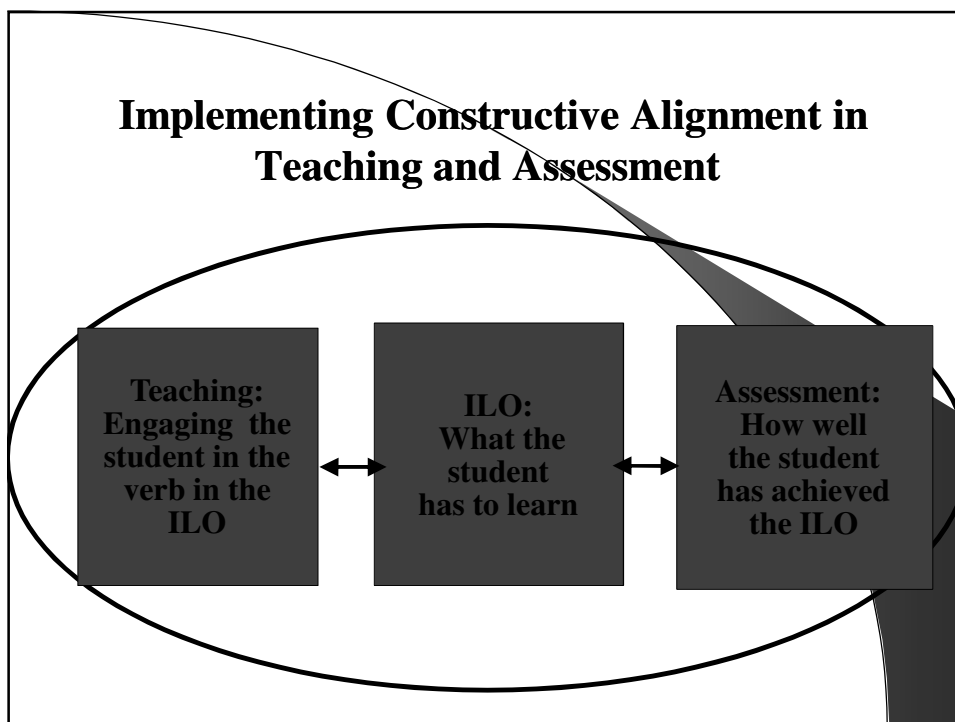
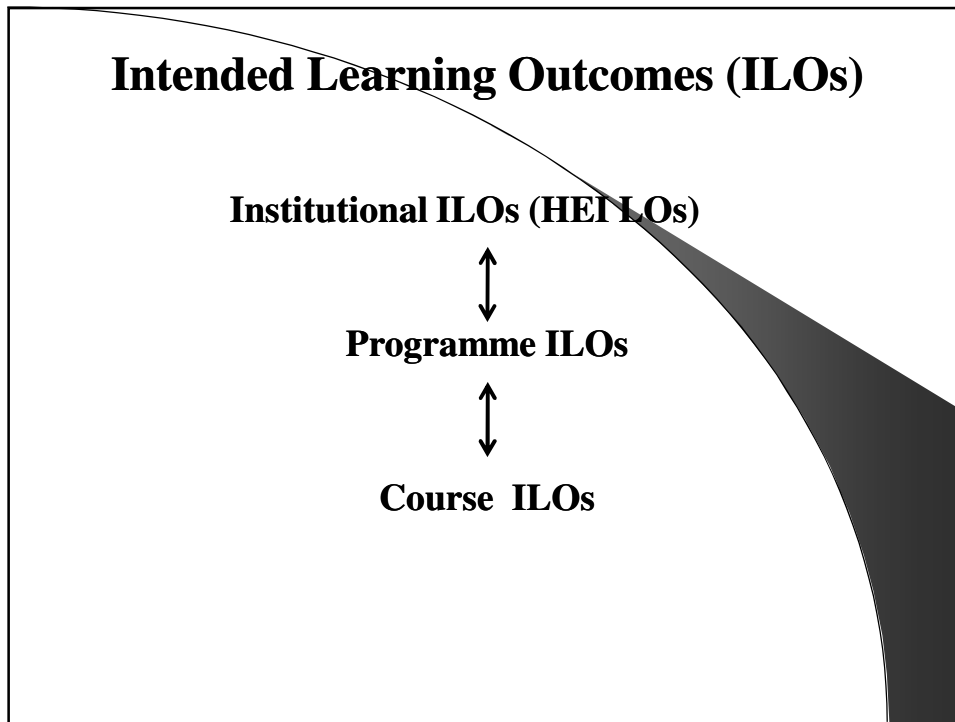
What are the intended outcomes that a graduate of the Higher Education Institute should achieve?

### ***Programme* level**

What are the intended learning outcomes for students enrolled in the programme?

### ***Course* level**

What are the intended learning outcomes for students taking a particular course at a particular level within the programme?



## **Designing Constructively Aligned Teaching and Assessment**

**There are four steps in designing such teaching and assessment:**

- 1. state the *intended outcomes* in the form of *standards* students are to attain using appropriate learning verbs.**
- 2. create a *learning environment* likely to bring about the intended outcomes.**
- 3. use *assessment tasks* to enable you to judge if and how well students' performances meet the outcomes.**
- 4. develop *grading criteria (rubrics)* for judging the quality of student performance.**

## **Procedures in Designing Course ILOs**

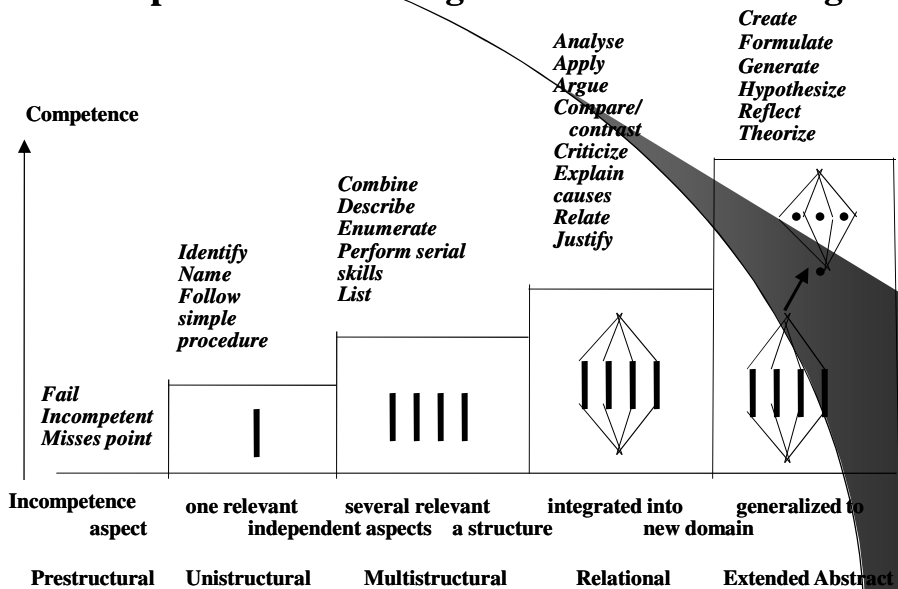
- 1. Select the topics to be taught.**
- 2. Decide the levels of understanding/performance the students are expected to achieve for the different topics.**
- 3. Consider if all the ILOs are of equal importance.**
- 4. Ensure a clear understanding and agreement of the ILOs within the teaching team and other relevant parties e.g. External Reviewer.**
- 5. Communicate the ILOs to students.**

## Some vague ILO verbs – to be avoided

*Appreciate*  
*Become aware of*  
*Familiarise with*  
*Know*  
*Learn about*  
*Understand*

These verbs don't tell the student or the teacher how they would know if the ILO has been met. ILOs need to specify a standard of performance.

## The SOLO Taxonomy with sample verbs indicating levels of understanding



## Programme and Course ILOs

### Alignment between the programme and course ILOs

Programme ILOs	Course ILOs		
	Course 1	Course 2	Course 3

1. Are the ILOs aligned?
2. Do the Course ILOs appropriately address the programme ILOs?
3. Are there any gaps?

### Activity 3a - Writing Course ILOs

**Group activity:** *Take a the course that your group has chosen. Consider the course aim and write the course ILOs by identifying:*

1. *The content or topic to be learned.*
2. *The intended level of understanding/performance to be achieved.*

<i>Content / topic</i>	<i>Intended level of understanding/performance</i>

*Now go across the rows and write out the course ILOs by stating the content and the intended level of understanding/performance.*

**Course ILOs:**

- 1.
- 2.
- 3.



### ***Activity 3a***

***Each group is to choose one member who is going to be the first spokes-person for the group for the second part of Activity (3b).***

### ***Activity 3b***

- . The spokes-person of each group now goes to another group (the next group in the clock-wise direction) to explain the course ILOs that the group has written.***
- . Members of the group listening to the explanation of the ILOs are to provide comments/suggestions on the ILOs.***
- . The spokes-person now goes back to his/her own group and relates comments/suggestions received to the group members.***
- . The group makes revision to the ILOs as appropriate.***

## Designing Teaching/Learning Activities to Align to Intended Learning Outcomes

Having designed course ILOs, we now need to activate the verbs or learning activities embedded in the ILOs by designing suitable Teaching/Learning Activities (TLAs) that will facilitate students achieving the ILOs.

### Remember:

There are many alternatives to lectures and tutorials, even in large classes.

## Four common teaching situations and associated teaching and learning activities

Situation	Teaching activities	Learning activities
LECTURE	Talk, explain, clarify	Listen, take notes, accept, query, discuss with peers, one-minute paper
TUTORIAL	Set/answer questions provide feedback	Pre-read, prepare questions, learn from peers, critique, analyse
PROJECT	Set brief, provide ongoing feedback	Apply, create, self-monitor, communicate, teamwork
PBL	Set problems provide feedback	Set learning goals, design, apply, access desired content and skills, integrate, solve problems

What teaching /learning activities will best facilitate your ILOs?

<b>Typical ILO</b>	<b>Possible TLAs</b>
<b>Describe</b>	Set reading, lecture, report on field trip, write essay
<b>Explain</b>	Tutorial, activities, write essay
<b>Integrate</b>	Project, assignment
<b>Apply</b>	Project, case study
<b>Solve problem</b>	PBL, case study
<b>Design, create</b>	Project, poster
<b>Hypothesise</b>	Experiment, project
<b>Reflect</b>	Reflective diary

*The point is not how you are going to teach but how and what you want your students to learn.*

*NOTE! Many of these TLAs can be assessments tasks as well. Then you have excellent alignment.*

**Activity 4a – Designing Teaching and Learning Activities**

**Group activity:** Refer to one of the course ILOs that you have identified in Activity 3a, design TLAs to align to the ILO.

**Course ILO:** \_\_\_\_\_

<i>Teaching situation</i>	<i>Teaching activities (What the teacher does)</i>	<i>Learning activities (What the students do)</i>

**Now double-check if the student learning activities are aligned to the verbs nominated in the course ILO.**

**Each group to choose a second spokes-person.**

### ***Activity 4b***

- . The spokes-person of each group (for the TLAs) now goes to another group (the second next group in the clock-wise direction) to explain the TLAs and how they are aligned to the course ILO chosen.***
- . Members of the group listening to the TLAs are to provide comments/suggestions on the TLAs.***
- . The spokes-person now goes back to his/her own group and relates comments/suggestions received to the group members.***
- . The group makes revision to the TLAs as appropriate.***

### **Assessment Tasks (ATs)**

- . Provide students the opportunity to demonstrate whether or not they have achieved the ILOs and what level their performance is in those ILOs.**
- . Should be appropriately designed or selected to address the ILOs that we want to assess.**
- . Different assessment methods (tasks) address different ILOs. There should therefore be different types of task as appropriate.**
- . Provide the evidence allowing teachers to make a judgment about the level of a student's performance against the ILOs and to award a final grade.**
- . Provide constructive feedback to students on their learning.**

## Constructive Alignment of ILOs and Assessment Tasks

Assessment Tasks Course ILOs	AT 1	AT 2	AT 3
<b>Course ILO 1</b>			
<b>Course ILO 2</b>			
<b>Course ILO 3</b>			
<b>Course ILO 4</b>			
<b>Course ILO 5</b>			

Consider if : all ILOs are being addressed?  
 there is a balanced coverage of the ILOs?  
 the more important ILOs are given appropriate assessment emphasis.

## Designing Assessment Tasks (ATs)

### Steps:

- 1. Select a practicable task that embodies the target ILO verb. (Try using the TLA as an AT first).**
- 2. Make a judgment on how well the ILO has been met by the students' performance in the ATs – developing grading criteria (rubrics).**

## Selecting Assessment Tasks

A range of different assessment tasks may be required to address the range of ILOs of a subject.

Questions to be asked in selecting assessment tasks:

1. Are the assessment tasks aligned to their appropriate ILOs? Are the students required to engage in the verbs identified in the ILOs?
2. Do the assessment tasks reflect the relative importance of the subject ILOs?
3. Are the assessment tasks practicable with respect to available time and resources?
4. Is the assessment workload realistic for teachers and students?

<b>Common ILOs</b>	<b>Possible Assessment Tasks</b>
<b>Describe</b>	Assignment, essay question exam
<b>Explain</b>	Assignment, essay question exam, oral presentation
<b>Integrate</b>	Project, assignment
<b>Analyse</b>	Case study, assignment
<b>Apply</b>	Project, case study, experiment
<b>Solve problem</b>	Case study, project, experiment
<b>Design, create</b>	Project, experiment, poster
<b>Reflect</b>	Reflective diary, portfolio, self-assessment
<b>Communicate</b>	A range of oral, writing or listening tasks addressing the ILOs, e.g. presentation, debate, role play, reporting, assignment, précis, paraphrasing, answering questions

**Examination is a very commonly used assessment task especially for large classes. We need to consider if**

- 1. examinations involving answering essay type of questions under invigilated conditions are able to assess students' performance in some high level ILOs, e.g. apply, reflect, create etc.**
- 2. there are other alternative assessments tasks which will more appropriately address those high level ILOs, and could be implemented as continuous assessments.**

**If we must have an invigilated "exam":**

- . Note that there are better formats than the conventional written essays; for example gobbets, critical incidents (e.g. comment on a video segment), letter-to-a-friend, and so on.**
- . Consider if the weighting (usually 50% or more) is appropriate to reflect the relative importance of the ILOs being addressed.**

## **Assessments Tasks for Large Classes**

### **Some ATs**

- Exam**
- Multiple choice**
- Ordered outcome items**
- Poster**
- Concept maps,  
Venn diagrams**
- Three minute essay**
- Gobbets**
- Short answer**
- Letter-to-a-friend**

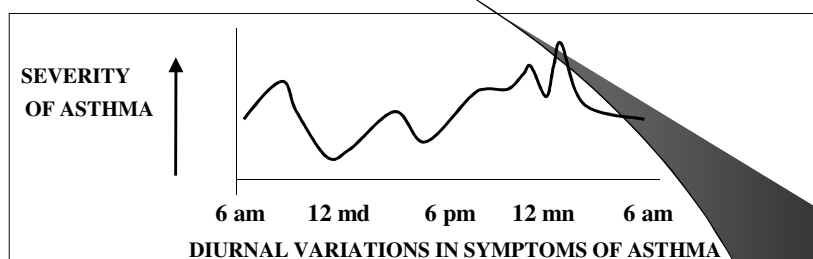
### **Useful for**

- Ensuring work is student's own, mostly multistructural ILOs**
- Recognition, strategy, coverage**
- Hierarchies of understanding**
- Integration, application, creativity**
- Coverage, relationships**
- Different levels of understanding, sense of relevance**
- Interpret significant detail, explain**
- Recall units of information, coverage**
- Integration, application, reflection**

## Ordered-outcomes Items

- Consists of a stem and 4-5 sub-items.
- The stem provides sufficient information (can be a figure, a diagram or a piece of written information) for a range of questions to be asked in the sub-items.
- The sub-items are ordered into a hierarchy of complexity that reflect the successive stages of learning of the concept or skill embedded in the stem.
- The SOLO taxonomy can be used as a guide for constructing the sub-items.
- Students' task is to answer all the sub-item questions based on the information given in the stem.
- Students' answers to the sub-item questions indicate the level of competence in that topic.

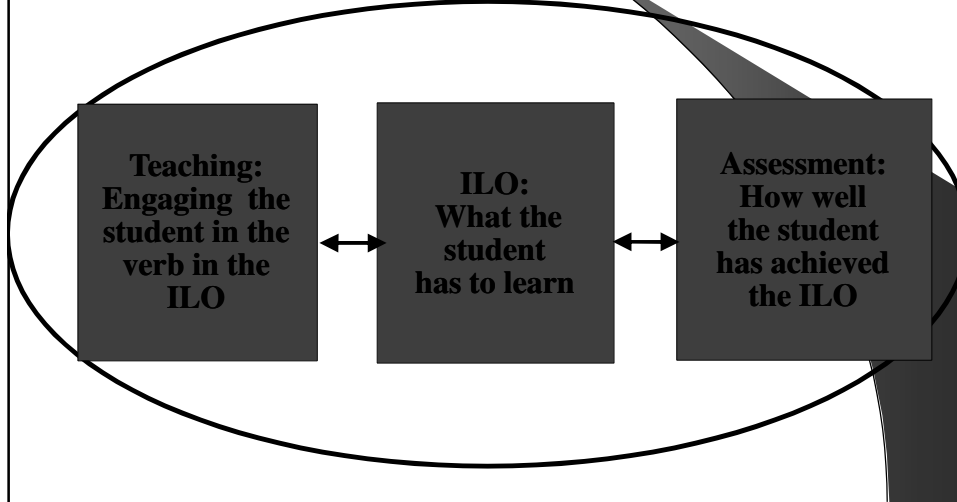
## Example of an ordered-outcome item for physiotherapy students



- When is the asthma attack most severe during the day?
- Is an asthmatic patient physically fitter at 1 p.m. or 8 p.m.?
- Do you expect a patient with asthma to sleep well at night? Give your reasons.
- Advise a patient with asthma how to cope with diurnal variation in symptoms.

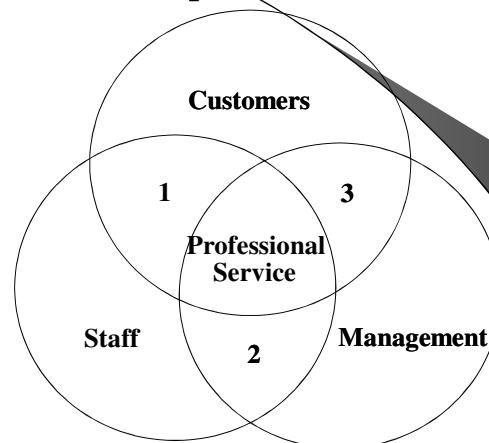


### Example of a Concept Map: Implementing Outcomes-based Teaching and Learning using Constructive Alignment



### Example of a Venn Diagram

Provision of professional service



*Explain the interaction that would occur in sites 1, 2 and 3 in relation to providing professional service.*

## **Gobbets**

- **Single chunks of content which students are familiar with. It could be a paragraph of a standard text, a portion of a diagram, or a specific detail of a design product.**
- **Students' task is to identify the gobbet, explain its context and its importance, its relationship to the overall picture, or whatever you would like them to comment on in relation to the big topic itself.**
- **Assess different levels of ILOs, multi-structural and relational – 'describe', 'explain', 'analyse', 'apply', 'predict' etc.**
- **Gobbets should access a bigger picture. Three gobbets can be completed in the time it takes one essay exam question, so that to an extent you can assess both coverage and depth.**

**Brown, S. and Knight, P. (1994) *Assessing learners in higher education*. London: Kogan Page.**

## **Example of a Gobbet**

**(For assessing the ILOs “identify” and “explain”)**

### **Law**

***A piece of legislation is provided. Students are asked to identify the context of the legislation, explain its importance, and its possible impact on a current legal crisis.***

**Example of a Gobbet**  
 (For assessing the ILOs “analyze” and “recommend”)

**Occupational Health and Safety**

*Students are given a photograph of a section of a construction site in function.*

*Students are asked to analyze the situation, identify any potential health and safety hazards and recommend measures to improve the situation.*

**Activity 5a – Designing Assessment Tasks**

**Group activity:** *Refer to one of the course intended learning outcomes you have written in Activity 3, design assessment task(s) to assess this ILO.*

**Course ILO:** \_\_\_\_\_

<i>Assessment Task</i>	<i>Student activities to complete the task</i>

**Now double-check if the student activities are aligned to the verb(s) nominated in the course ILO.**

**Each group to choose a third spokes-person.**

### ***Activity 5b***

- . The spokes-person of each group (for the ATs) now goes to another group (the third group down in the clock-wise direction) to explain the ATs and how they are aligned to course ILO chosen.***
- . Members of the group listening to the ATs are to provide comments/suggestions on the ATs.***
- . The spokes-person now goes back to his/her own group and relates comments/suggestions received to the group members.***
- . The group makes revision to the ATs as appropriate.***

**Assessing by marks or grades?**

## Assessing by Marks

### For:

- Used to it.
- Seems to be the logical way to assess in certain subjects.
- Logistically easy.

### Against:

- Defines quality in terms of accumulating small quantities.
- Measurement error also accumulates, thus invalidating fine discriminations. E.g. there is no valid difference between 74 and 75, yet to the student it can make a BIG difference - an A or a B! Or worse, the difference between pass or fail.
- Sends undesirable messages to students (backwash).

## Assessing by Grades

### For:

- Student's performance is appropriately assessed against what they are intended to learn – *criterion-referenced*.
- Backwash is positive.
- The final grade tells students what they have achieved and what they need for a better grade.

### Against:

- Requires a different mind set for some teachers.
- Initially more work in designing suitable assessment tasks and grading criteria, but once established there is no extra work.

**Qualitative assessment involves making judgment against criteria (*rubrics*), not by counting 'marks'**

**If ILOs are to reflect workplace or 'real world' standards it is not appropriate to state and assess them in terms of marks obtained.**

**Assessment tasks should likewise reflect the 'real world' ILOs.**

### ***Grading Criteria (rubrics)***

**ILO**

**Assessment task**

<b>Some Rubrics for Direct Grading of ILOs</b>								
	<b>Marginal Pass</b>	<b>Satisfactory</b>			<b>Good</b>			<b>Excellent</b>
	<b>D</b>	<b>C-</b>	<b>C</b>	<b>C+</b>	<b>B-</b>	<b>B</b>	<b>B+</b>	<b>A- A</b>
<b>Grade</b>	<b>1.00</b>	<b>1.70</b>	<b>2.00</b>	<b>2.30</b>	<b>2.70</b>	<b>3.00</b>	<b>3.30</b>	<b>3.70 4.00</b>
<b>point/percent</b>	<b>45 - 49</b>	<b>50 - 64</b>			<b>65 - 79</b>			<b>80 - 100</b>
<b>ILOs</b>								
<b>Explain</b>	Able to identify and briefly write about limited points. Very little evidence of using these points to provide reasoning to why they are inter-related.	Able to identify a number relevant points with some details. Uses these points to provide a fair reasoning or causality. No evidence of a comprehensive overview of reasoning or causality.			Able to identify a full range of relevant Points with details. Supported by relevant literature. Points are organized to provide a comprehensive and cohesive reasoning or causality.			As in "Good" but provides views on possible alternative causes and/or results under changing conditions. Able to link current reasoning to situations in real-life professional contexts.
<b>Reflect</b>	Able to use available information to self-evaluate and identify limited aspects of own strengths and weaknesses in a general sense. No evidence of suggestions of ways to improve performance. No evidence of theory being used in self-evaluation.	Able to use available information to self-evaluate and identify more aspects of own strengths and weaknesses in a general sense. Little application of theory in self-evaluation and limited suggestions of ways to improve performance.			Able to use available information to self-evaluate and identify the full range of own strengths and weaknesses. Self-evaluation is based on theory. Increasingly able to suggest ways to improve performance in a specific context.			As in "Good". Able to generalize self-evaluation to beyond existing context. Suggest ways of improving performance to real-life professional context.

<b>Grading of Assessment Tasks in a Portfolio (addressing whatever ILOs apply)</b>								
	<b>Marginal</b>	<b>Adequate</b>			<b>Good</b>			<b>Excellent</b>
	<b>D</b>	<b>C-</b>	<b>C</b>	<b>C+</b>	<b>B-</b>	<b>B</b>	<b>B+</b>	<b>A- A</b>
<b>%</b>	<b>45 - 49</b>	<b>50 - 64</b>			<b>65 - 79</b>			<b>80 - 100</b>
	The pieces of evidence are relevant and accurate, but are isolated, addressing one aspect of the course. Demonstration of understanding in a minimally acceptable way. Poor coverage, no originality, weak justification of portfolio items. Inappropriate self-evaluation.	The evidence is relevant, accurate and covers several aspects of the course. Little evidence of an overall view of the course. Demonstrates declarative understanding of a reasonable amount of content. Able to discuss content meaningfully. Good coverage but little Application or integration. Fair justification of items. Attempted realistic self-evaluation			The evidence presents a good appreciation of the general thrust of the course. Good coverage with relevant and accurate support. A clear view of how various aspects of the course integrate to form a thrust or purpose. Good evidence of application of course Content to practice. Portfolio items well justified. Realistic self-evaluation.			As in "B" but with higher degree of originality and evidence of internalization into personalized model of practice. Good evidence of reflection on own performance based on theory. Generalizes course content to new and unfamiliar real-life contexts.

## ***Activity 6***

***In your group, choose ONE course ILO or ONE assessment task and write the grading criteria for it.***

## **Deriving a Final Grade (Quantitatively)**

- **Award individual grades based on the grading criteria.**
- **Convert grades to numerals e.g. using the grade point scale.**
- **Combine (average) the individual grade points to arrive at a final grade point.**
- **Convert the final grade point back to a final grade.**



## **Constructive Feedback**

- . **Should address the ILOs being assessed or the assessment task .**
- . **Provides qualitative information to students of their current performance and ways to improve. A single grade or mark is not helpful.**
- . **The grading criteria (or rubrics) are useful guideline in providing constructive feedback.**
- . **Should be positive as far as possible and constructive to provide suggestions for improvement.**
- . **Consider building future learning and assessment on students' action/response to feedback.**
- . **Should be given timely.**

## **Activity 7**

***(Individually) Take a few minutes to reflect on the following:***

- 1. One important point that you have gained from this workshop.***
- 2. One question you still have on designing constructively aligned teaching/learning and assessment.***
- 3. One action you will take to share with the teaching staff at your institution on what you have gained in this workshop.***

***As a group, discuss and identify:***

- (a) one new or important thing that you have gained from this workshop that would help you implement your staff development programme at your own institution.***
- (b) one question or concern that you have in implementing the staff development programme.***

***Please share with all of us through your groups' spokes-person.***

## References

**Biggs, J. & Tang, C. (3rd Ed) (2007) . *Teaching for Quality Learning at University*. Maidenhead: Open University Press/McGraw Hill.**