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619285-EPP-1-2020-1-FI-EPPKA2-CBHE-JP

# Multilevel Local, Nation- and Regionwide Education and Training in Climate Services, Climate Change Adaptation and Mitigation



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# Competence-based learning 4: Assessment Marek Frankowicz

# Graduate Attributes

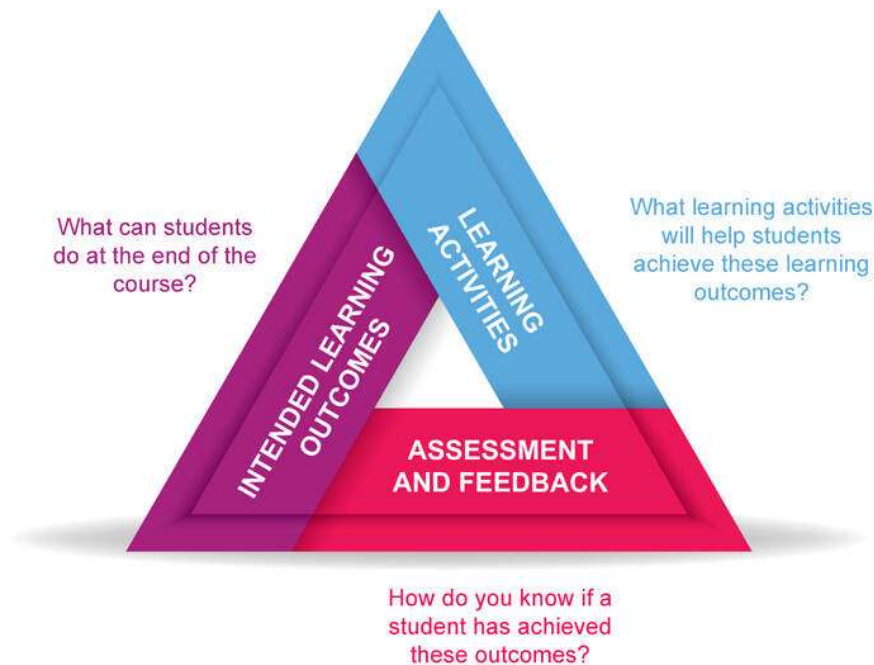
Engaged	Enterprising	Enquiry-Based	Effective	Expert
<ul style="list-style-type: none"> <li>• Socially responsible</li> <li>• Civically responsible</li> <li>• Curious</li> <li>• Motivated self-starters</li> <li>• Active team players</li> <li>• Reflective practitioners</li> <li>• Global citizens</li> </ul>	<ul style="list-style-type: none"> <li>• Independent thinkers</li> <li>• Creative</li> <li>• Career-educated</li> <li>• Self-starters</li> <li>• Innovators</li> <li>• Entrepreneurs</li> <li>• Well organised</li> </ul>	<ul style="list-style-type: none"> <li>• Critical thinkers</li> <li>• Digitally literate</li> <li>• Inquisitive</li> <li>• Problem solvers</li> <li>• Creators of new knowledge</li> <li>• Analytical</li> </ul>	<ul style="list-style-type: none"> <li>• Excellent communicators</li> <li>• Information literate</li> <li>• Self managers</li> <li>• Decision makers</li> <li>• Resilient</li> <li>• Reflective practitioners</li> </ul>	<ul style="list-style-type: none"> <li>• Experiential learners</li> <li>• Discipline knowledge</li> <li>• Practice-based learners</li> <li>• Work-based learners</li> <li>• Ethical</li> <li>• Leaders</li> <li>• Project managers</li> </ul>



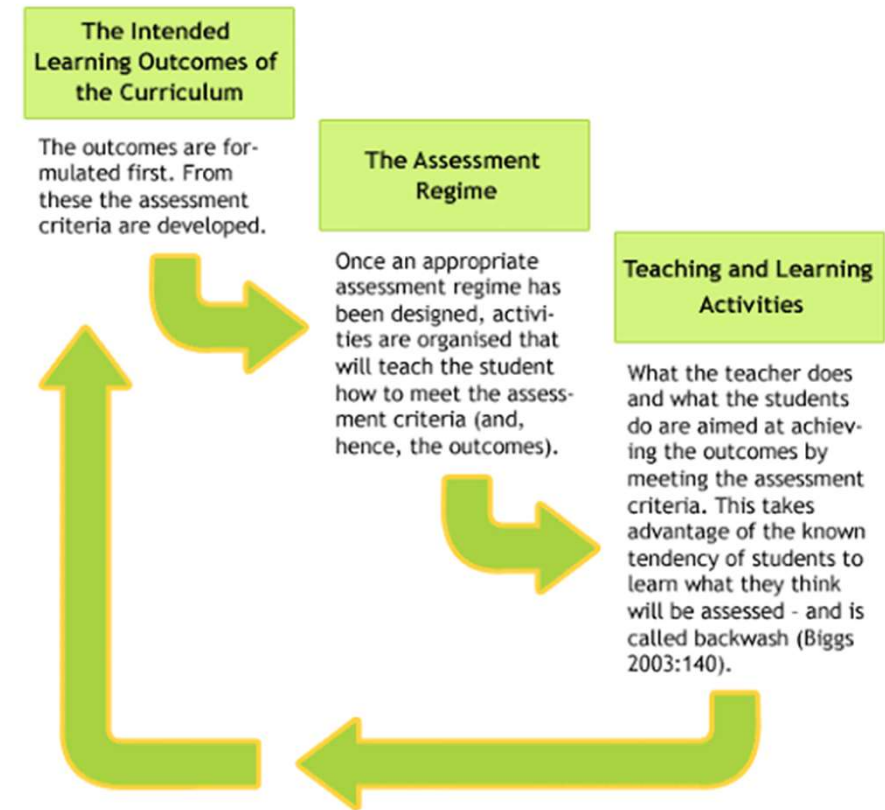
## ENHANCING EMPLOYABILITY

*from SUSDEV presentation in Krakow authored by colleagues from DUT, Ireland*

# Constructive Alignment



<https://www.google.com/url?sa=i&url=https%3A%2F%2Fotl.uoguelph.ca%2Fcourse-curricular-design%2Fcourse-design&psig=AOvVaw1KdlfvNDRZ62eP9gsnugbr&ust=1618917853724000&source=images&cd=vfe&ved=0CAIQjRxqFwoTCJD9spCZivACFQAAAAAABAD>



[https://lh3.googleusercontent.com/proxy/ZKm4zolunXiBKZ96n4ruivu4197r7NKS4F68IZuovT05boe3X3xN5\\_yVBKOKtLz4r8kUJE9IA1SY7la5MHPB-nxM2qkXb63X4Du3AewTyObzO0BPEA](https://lh3.googleusercontent.com/proxy/ZKm4zolunXiBKZ96n4ruivu4197r7NKS4F68IZuovT05boe3X3xN5_yVBKOKtLz4r8kUJE9IA1SY7la5MHPB-nxM2qkXb63X4Du3AewTyObzO0BPEA)

# Teaching & learning activities

- Teacher-controlled
- Peer-controlled
- Self-controlled

# Levels of assessment

- Classroom assessment
- Courses assessment
- Program assessment
- Institutional assessment

# Types of assessment



- Diagnostic
- Formative
- Summative



- Direct
- Indirect



- Qualitative
- Quantitative

# Methods of assessment (examples)

- Annotated bibliographies and literature reviews
- Behavioral observations
- Projects
- Reports
- In-class writing
- Informal interviews
- Oral examinations
- Written examinations
- Portfolios
- Short topic homework assignments
- Essays
- Simulations
- .....



# LO: Level of achievement

- What is a pass mark for an airline pilot? **100%!**
- Different requirements concerning different subjects (medicine, political sciences, chemistry, law etc.)

# Progression of competences:

## Subject Benchmark Statement (UK): Environment

### Excellent performance

Highly developed critical approach to academic literature and other sources of information.

Recognition and discussion of the moral and ethical dimensions of issues and investigations and the need for professional codes of conduct.

Highly developed ability to describe and record materials in the field and laboratory.

Ability to interpret practical results with flair.

### Typical performance

Critical approach to academic literature and other sources of information.

Recognition of the moral and ethical dimensions of issues and investigations and the need for professional codes of conduct.

Ability to describe and record materials in the field and laboratory.

Ability to interpret practical results in a logical manner.

### Threshold performance

Basic approach to academic literature and other sources of information.

Ability to describe the moral and ethical dimensions of issues and investigations and the need for professional codes of conduct.

Basic ability to describe and record materials in the field and laboratory.

Basic ability to interpret practical results.

# Program assessment

- Systematically gathering, analysing and using information about a program
- Measuring program outcomes:
  - What the program's graduates know
  - What they can do with this knowledge
  - What they value as a result of the knowledge
- Direct and indirect methods

# Matching Learning Outcomes to Assessment Types

Types of Learning: Learning outcomes	What is required from students?	Examples of Assessment
Thinking critically and making judgments	Development of arguments, reflection, judgment, evaluation	Essay, Report, Book review
Solving problems/ developing plans	Identify problems, define problems, analyse data, review, design experiments, plan, apply information	Problem scenario, Group Work, Work-based problem, Analyse a case, Conference paper (or notes for a conference paper plus annotated bibliography)

*Adapted from Nightingale et al. ,1996*

# Matching Learning Outcomes to Assessment Types

Types of Learning: Learning outcomes	What is required from students?	Examples of Assessment
Performing procedures and demonstrating techniques	Take readings, use equipment, follow laboratory procedures, follow protocols, carry out instructions	Demonstration, Role Play , Make a video (write script and produce/make a video) , Produce a poster , Lab report
Demonstrating knowledge and understanding	Recall, describe, report, identify, recognise, recount, relate, etc.	Written examination, Oral examination, Essays, Reports, Short answer questions, Mini tests

*Adapted from Nightingale et al. ,1996*

# Matching Learning Outcomes to Assessment Types

Types of Learning: Learning outcomes	What is required from students?	Examples of Assessment
Managing/developing yourself	Work co-operatively and, independently, be self- directed, manage time, manage tasks	Learning journal Portfolio Learning Contracts Self-evaluation Group projects Peer assessment
Designing, creating, performing	Design, create, perform, produce, etc.	Design project, Portfolio, Presentation, Performance

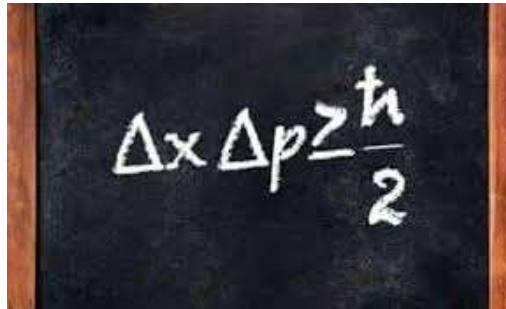
*Adapted from Nightingale et al. ,1996*

# Matching Learning Outcomes to Assessment Types

Types of Learning: Learning outcomes	What is required from students?	Examples of Assessment
Assessing and managing information	Information search and retrival, investigate, interpret, review information	Annotated bibliographies, Use of bibliographic software, Library research assignment, Data based project
Communicating	Written, oral, visual and technical skills	Written presentation, Oral presentation, Discussions/ Debates/ role plays, Group work

*Adapted from Nightingale et al. ,1996*

# „Heisenberg's uncertainty principle”


$$\Delta x \Delta p \geq \frac{h}{2}$$

- The more precise assessment, the more we perturb learning process (assessment-driven program/courses); we do not check real capacities of students, but their way to fulfill our wishes...
- A variation: it is not possible to determine accurately the assessment level of a student and simultaneously increase his motivation. The more accurately we try to determine his assessment level, the lesser will be his motivation. The more we try to motivate the student towards his goal, the lesser would be the accuracy of assessment level.





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# Thank you!