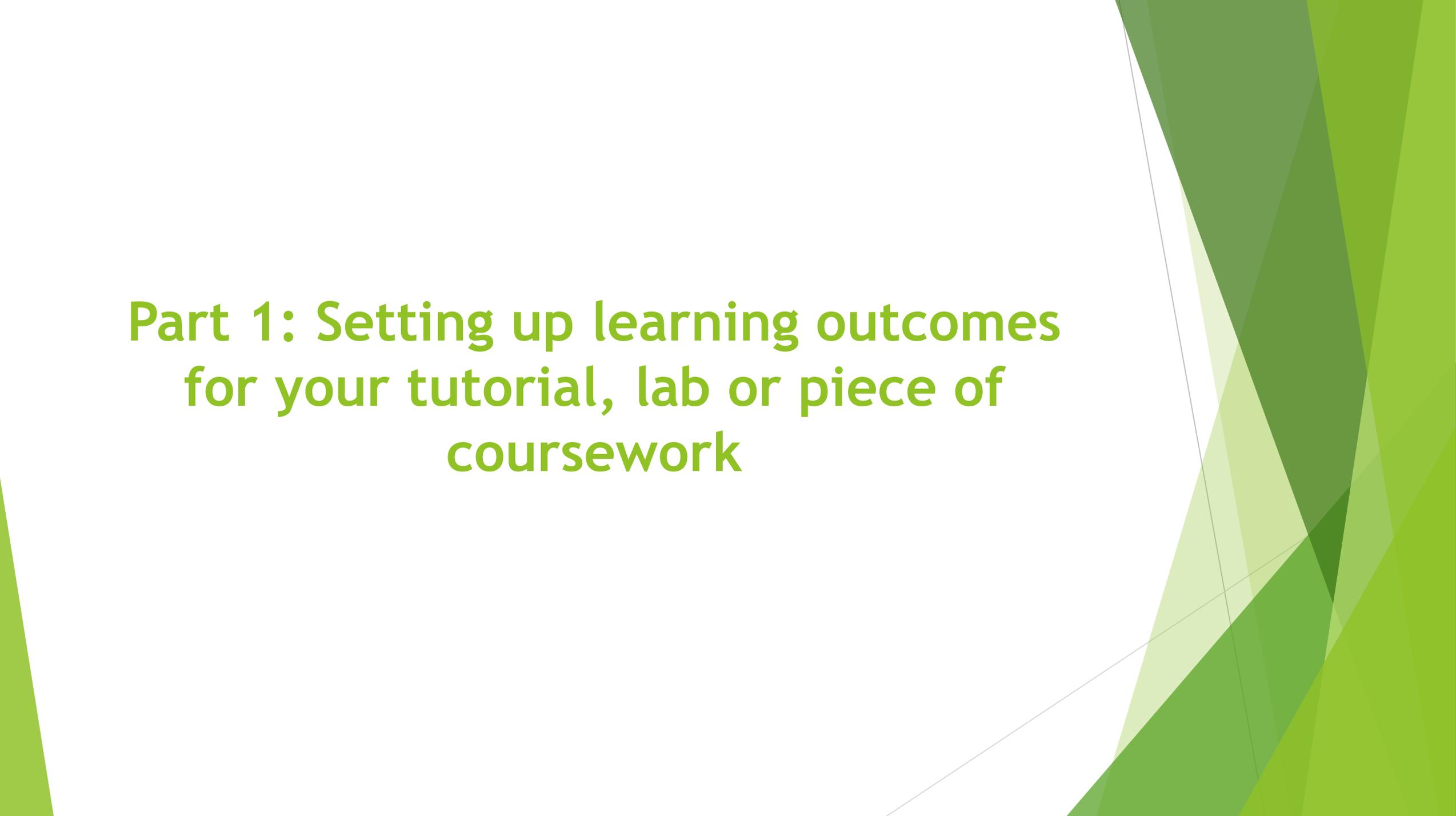


Teaching Assistant Special: Developing course material

Cristina Adriana Alexandru
Cristina.Alexandru@ed.ac.uk

Schedule

- ▶ **Part 1: Setting up learning outcomes for your tutorial, lab or piece of coursework**
 - ▶ The issue of surface vs. deep learning
 - ▶ The issue of employability
- ▶ **Part 2: : Choosing tasks**
 - ▶ Criteria for choosing tasks
 - ▶ Types of tasks, when to use them
 - ▶ Matching tasks to learning outcomes
 - ▶ Some advice for developing course material
 - ▶ Evaluating course material

The background features abstract, overlapping geometric shapes in various shades of green, ranging from light lime to dark forest green. The shapes are primarily triangles and polygons, creating a dynamic, layered effect. The overall composition is clean and modern, with the text centered on a white background.

Part 1: Setting up learning outcomes for your tutorial, lab or piece of coursework

Focus on learning outcomes

Using Bloom's taxonomy (Bloom et al. 1956, from Butcher et al. (2006) p. 47) and working individually onto the 'Course design plan' handout, build a list of 3 learning outcomes for your next tutorial/lab

Surface vs. Deep Student Learning

▶ **Surface learning is:**

- ▶ Focused on meeting the demands of the course
- ▶ Strategy: remembering and reproducing information
- ▶ May not involve understanding
- ▶ Most students just want to pass, although some aim for high marks through the development of good time management.

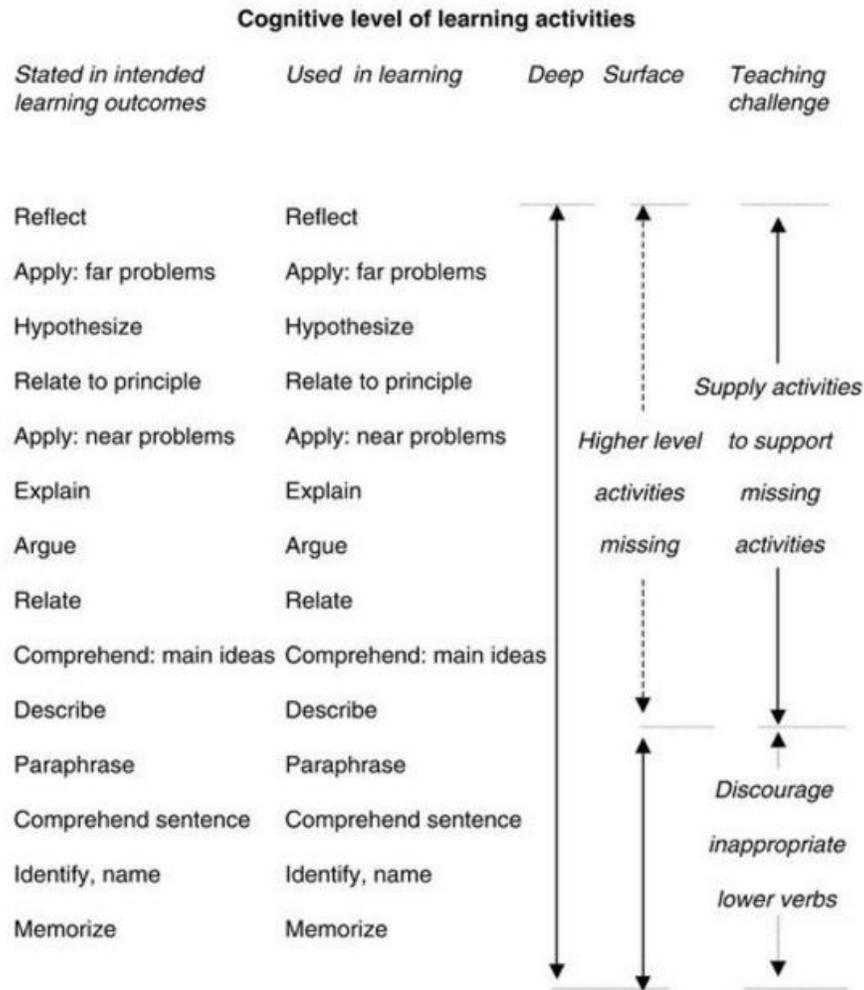
▶ **Deep learning is:**

- ▶ Focused on understanding
- ▶ Strategies: reading in depth, discussing with others, relating new to old knowledge
- ▶ Students may not be interested in high marks, unless achieving approach used.

Focus on learning outcomes 2

What kind of learning outcomes (you could think of verbs) would ensure your students passing from a surface to a deep learning approach?

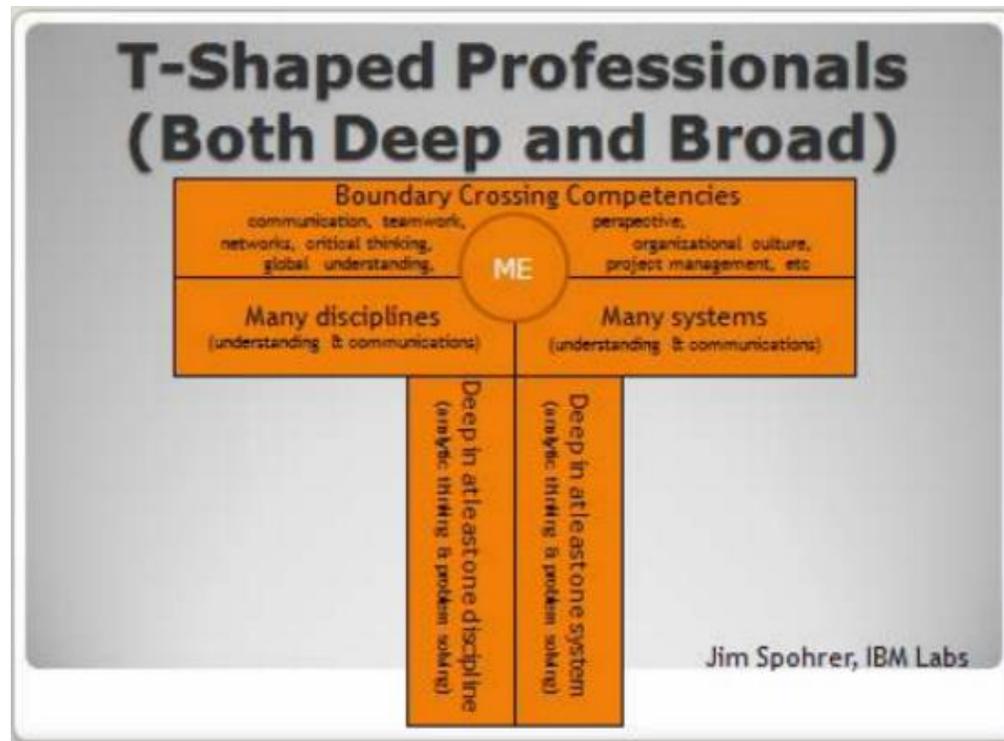
Relationship learning objectives-learning



From Biggs (2003) p. 27

The issue of employable students

- ▶ Employers looking more and more for “T-shaped” people (i.e. people with both depth and breadth in their skills)



Employability in the University of Edinburgh

- *Employability= “a set of achievements - skills, understandings and personal attributes - that make graduates more likely to gain employment and be successful in their chosen occupations, which benefits themselves, the workforce, the community and the economy” (Prof. Mantz Yorke 2004)*

| Employability is not: | Employability is: |
|--|--|
| <ul style="list-style-type: none">• simply getting a job | <ul style="list-style-type: none">• ongoing success for now and in the future, whatever career or career(s) a student chooses |
| <ul style="list-style-type: none">• a list of skills that can be 'taught' | <ul style="list-style-type: none">• drawing on a range of skills, abilities and attributes that are developed in a whole range of settings and that vary from individual to individual |
| <ul style="list-style-type: none">• the sole responsibility of the Careers Service and the Employability Consultancy | <ul style="list-style-type: none">• a University-wide responsibility |
| <ul style="list-style-type: none">• the same as Personal Development Planning (PDP) | <ul style="list-style-type: none">• an ongoing developmental process that benefits from active reflection |
| <ul style="list-style-type: none">• something new | <ul style="list-style-type: none">• more important now than ever before in light of the world graduates are entering |

Employability and the Graduate Attributes of the University of Edinburgh

- ▶ Define what it means to be a graduate of our university, including skills, abilities, attitudes, approaches that were developed through learning and reflection.
- ▶ Must be considered in the design of programmes and courses
- ▶ Are governed by the HEA “Student employability profiles”

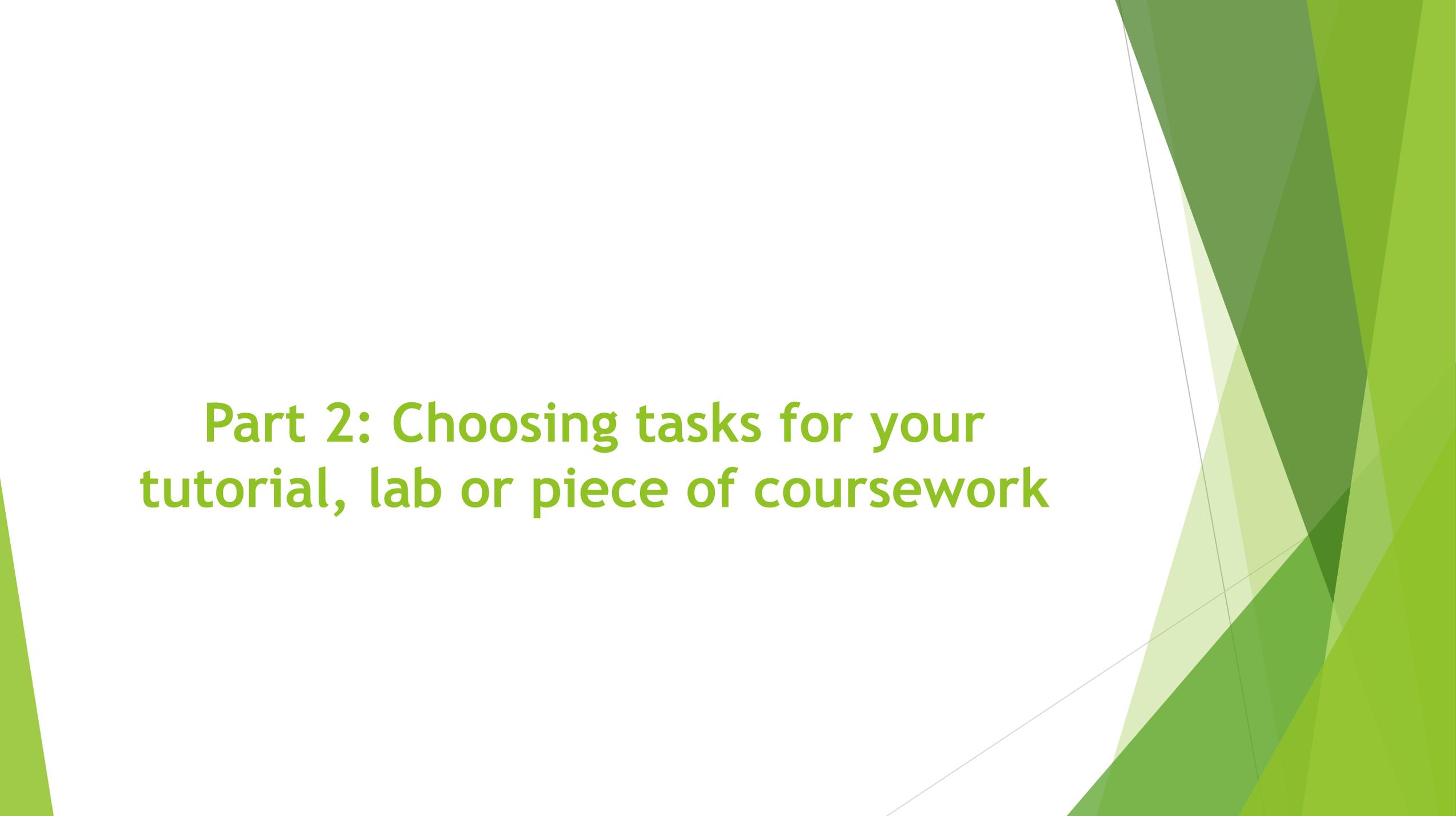
Spend a few minutes to browse through the [Graduate attributes website](#) and the [Graduate attributes summary](#) document

Employability & Graduate Attributes in the University of Edinburgh Strategic Plan 2016

- ▶ One of the missions is to ‘enable our graduates and staff to be exceptional individuals equipped to address global challenges’. Some key steps:
 - ▶ ‘be a place for independent, creative and critical thinkers to develop as innovators, researchers and explorers
 - ▶ ‘create opportunities for our students to exchange ideas, share their values and shape the world in which they live’
 - ▶ ‘ensure that our degree programmes remain current and support student employability’
 - ▶ ‘seek employers’ input to course content and degree programme development and delivery’
 - ▶ ‘provide meaningful work-related learning for students’
 - ▶ ‘ensure that graduates are equipped with the abilities and commercial skills that employers need, through digital and data-related learning opportunities’

Focus on learning outcomes 3

With the above in mind, refine your learning outcomes to encourage a deep learning approach, and develop some of the necessary skills for more employable students.

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Part 2: Choosing tasks for your tutorial, lab or piece of coursework

Criteria for choosing tasks

In small groups, discuss what criteria would you use for deciding on tasks

Some criteria for choosing tasks

- ▶ Course learning outcomes, to help students achieve/check their goals
- ▶ (for lab/tutorial tasks) Intended assessment, to offer clear progression opportunities
- ▶ Course content (lectures, past tutorial/lab tasks) and activities, to maintain consistency and -for coursework- be fair
- ▶ The academic profile of the students (year, specialism, knowledge of prerequisites and related courses, etc.)
- ▶ The skills intended to develop in the students
- ▶ (for lab/tutorial tasks) The average number of students in a lab/tutorial
- ▶ Your perceived difficulty of the different notions of the course

Some criteria for choosing tasks

- ▶ (for lab/tutorial tasks) The duration of a tutorial/lab
- ▶ Realistic preparation time at home vs. usefulness
- ▶ The availability of current research and industrial/commercial applications in the area
- ▶ Expectations on student progress given by time in the semester
- ▶ (for coursework tasks) Whether the assessment is formative or summative
- ▶ Difficulties that students had according to feedback from tutors, demonstrators, markers in the current and past years
- ▶ Your own collected feedback through communication with students
- ▶ Skills, abilities, attributes that you would like to help students develop

Choosing the breadth and depth of the content (Harden's guides)

- ▶ Mainstream
- ▶ Precursor (to later part of the course)
- ▶ Opportunistic (develops both core knowledge and additional skills)
- ▶ Supportive (illustrates/enhances other course aspects through realistic examples)

Adapted from Butcher, C., Davis, C. & Highton, M. (2006) *Designing Learning. From module outline to effective teaching*. Key Guides for Effective Teaching in Higher Education. Routledge, pp. 56-57.

Choosing usefulness vs. time available

- ▶ Essential (the basics)
- ▶ Should (broader and deeper grasp of the topic)
- ▶ Could (more detail, examples, applications)
- ▶ Nice

Adapted from Butcher, C., Davis, C. & Highton, M. (2006) *Designing Learning. From module outline to effective teaching*. Key Guides for Effective Teaching in Higher Education. Routledge, pp. 59-60.

Possible types of tasks in tutorials, labs and coursework

In small groups, make a list of possible types of tasks in tutorials OR labs OR coursework

Some possible types of tasks in tutorials

- ▶ Theoretical questions (open ended, multiple choice, T/F, filling gap, etc.)
- ▶ Problem solving exercises (with variations that problems presented before class, in early stages of class, as preparation for class)
- ▶ Mini presentations
- ▶ Springboard seminars (discussing an explanation, video/audio recording, demonstration with some questions in mind)
- ▶ Post-lecture tutorials (students asking questions about the lecture, maybe by bringing their annotated lecture handouts)
- ▶ Case studies (based on actual practice, could be complex, interdisciplinary)

Some possible types of tasks in tutorials

- ▶ Simulation (less detailed versions of actual practice)
- ▶ Games (even less detailed, with precise rules)
- ▶ Syndicate (different groups working on different sections on a topic and presenting their views)
- ▶ Commenting on a colleague's work
- ▶ Summarising lessons learned

Any others? USE YOUR CREATIVITY

Adapted from Brown & Atkins (1988) *Effective teaching in Higher Education*. Routledge. Pp. 62-67.

Some possible types of tasks in labs

- ▶ Programming exercises (problem solving)
- ▶ Individual use of pen and paper to e.g. plan solution (problem solving)
- ▶ Projects, with topics offered to student and/or chosen by student
- ▶ Watching online videos
- ▶ Student demonstrations

Any others? USE YOUR CREATIVITY

Adapted from Brown & Atkins (1988) *Effective teaching in Higher Education*. Routledge. Pp. 62-67.

Some possible types of tasks in coursework

- ▶ Theoretical questions (open ended, multiple choice, T/F, filling gap, etc.)
- ▶ Problem solving
- ▶ Projects
- ▶ Case studies
- ▶ Simulation
- ▶ Games
- ▶ Essays
- ▶ Literature reviews
- ▶ Blogs

Some possible types of tasks in coursework

- ▶ Opinion argumentation
- ▶ Presentations
- ▶ Commenting on other colleagues' work
- ▶ PeerWise questioning

Any others? USE YOUR CREATIVITY

Matching tutorial, lab or coursework tasks to learning outcomes

Using the “Course design plan” handout, start from each of your 3 learning outcomes to individually decide on tasks for a tutorial OR lab OR piece of coursework. Share your ideas within your small group.

1) Some advice for developing course material for tutorials/labs

- ▶ Always start from the course learning outcomes (which you may need to break down into more specific ones) and NOT from what you know
- ▶ Read lectures to be aware of how things were presented to students
- ▶ Be aware of (plans for) how the coursework will look
- ▶ Use **language** which is adapted to the level of the students: for beginners, introduce any new jargon first, give examples, provide templates in labs, repeat information from lectures/tutorials or at least reference them; do less of this as they progress
- ▶ Consider the **level of difficulty** of the tasks and adapt it to the students
- ▶ Aim for more practice and less memorisation of information, to develop deep learning (avoid having too many theoretical questions)

1) Some advice for developing course material for tutorials/labs

- ▶ For practical exercises, make them as related to real life as possible to maintain interest; keep them varied
- ▶ Depending on preparation requirements (before, during), consider limiting **amount of tasks** to available time or separating compulsory from optional tasks
- ▶ Think about the **presentation of the tasks** on paper:
 - ▶ The aims of the task should be visible at a glance (think of structuring the text, using bold or capital letters to indicate important information)
 - ▶ The size of a task should not be overwhelming or encourage missing information (think of limiting the amount of text, having white space, using bulleted lists to simplify, referencing other documents rather than repeating, using appendices)
 - ▶ Ordered lists can help with problem solving

2) Some advice for developing course material for coursework

- ▶ Also start from the course learning outcomes
- ▶ Prepare the marking scheme in advance so that it gives more credit to important learning outcomes and less to less important ones
- ▶ Consider how the coursework will fit with the rest of the course components (do the necessary reading of lectures, tutorial and lab sheets)
- ▶ Develop broad statements about general expectations (marking scheme, if possible, grade descriptors, expected working time, word limits, deadlines, penalties, feedback etc.)
- ▶ Regarding the **amount of tasks**, consider the students' available time (what is realistic, considering course aims and learning outcomes but also time of deadline)

2) Some advice for developing course material for coursework

- ▶ Regarding **language**, it's even more critical to be clear in order for students to understand requirements: keeping phrases short, introducing new terms
- ▶ Consider the **level of difficulty** of the tasks and adapt it to the students
- ▶ Aim for more practice and less paraphrasing of information, to encourage deep learning
- ▶ For practical exercises, make them as related to real life as possible to maintain interest
- ▶ Offer varied types of tasks
- ▶ Same advice for the presentation of tasks

Evaluating course material

- ▶ Courses should undergo a continuous development
- ▶ Be available for student questions and feedback on material
- ▶ Communicate with the course team to identify tasks which:
 - ▶ Have language problems: lack of clarity, ambiguity
 - ▶ Are too difficult for the students (unrealistic), may need to be split into more tasks, have more examples, be explained more in lectures.
 - ▶ Are too easy for the students, and maybe should be skipped for the future
 - ▶ Are not considered interesting enough
- ▶ Observe coursework results and attendance rates in tutorials and labs
- ▶ Be prepared to improve material before and after tutorials/labs/cw deadlines

Resources

- ▶ [Informatics Teaching Support](#)
- ▶ [Informatics Teaching Support Staff Policy](#)
- ▶ [Informatics Teaching Support training webpage](#)
- ▶ “Designing courses”, “Designing and delivering lectures” material on the [“IAD Resources on Tutoring and Demonstrating” channel in Learn](#)
- ▶ [IAD course “Designing and Delivering Lectures”](#), Wed 6th Nov
- ▶ General texts on course material development and course design:
 - ▶ Butcher, C., Davis, C. & Highton, M. (2006) *Designing Learning. From module outline to effective teaching*. Key Guides for Effective Teaching in Higher Education. Routledge.
 - ▶ Toohey, S. (1999) *Designing Courses for Higher Education*. Buckingham, Society for Research into Higher Education and Open University Press

Resources

- ▶ Morss, K. & Murray, R. (2005). *Teaching at University: A guide for postgraduates & researchers*. London: SAGE Publications Ltd.
- ▶ Biggs, John (2003, 2nd Ed) *Teaching for Quality Learning at University: What the student does*. Buckingham: Society for Research into Higher Education and Open University Press
- ▶ Atkins, M., & Brown, G. (1988). *Effective teaching in higher education*. Routledge.
- ▶ On Employability:
 - ▶ University of Edinburgh [Employability Information for Staff](#) with sublinks [What is Employability?](#), [Strategic Implementation](#) (including [University of Edinburgh Strategic Plan 2016](#)) and [Employability in the Curriculum](#).
 - ▶ University of Edinburgh [Graduate Attributes website](#) and the [Graduate attributes summary](#) document.