

Intended Learning Outcomes (ILOs)

The template for the formulation of the ILO is emphasizing the student perspective. All the ILO are formulated to address directly what is expected from the learner after following the related educational unit. Three are the key elements:

- **Short description:** ILOs has in general from 150 to 250 characters.
- **Bloom Verb Level:** detailing the action expected and referring to the expected level of understanding as expressed in the well-known Bloom taxonomy¹ selecting one of the following level:
 - o Level1_Recall facts and basic concepts "Remember": (define, duplicate, list, memorize, repeat, state)
 - o Level2_ Explain ideas or concepts "Understand": (classify, describe, discuss, explain, identify, locate, recognize)
 - o Level3_ Use information in new situations "Apply": (execute, implement, solve, use, demonstrate, interpret, operate)
 - o Level4_ Draw connections among ideas "Analyse": (differentiate, organize, relate, compare, distinguish, examine, test, analyze)
 - o Level5_ Justify a stand or decision "Evaluate": (appraise, argue, defend, judge, select, support, value, critique, weigh)
 - o Level 6_ Produce new or original work "Create": (design, assemble, construct, conjecture, formulate, author, investigate)
- **Content** to which the action indicated by the verb refer to and keywords enclosed in parentheses and in italics
- **Context** where the action for the related content must be applied and keywords enclosed in parentheses and in italics

Table 1: ILOs for the Course: Mechatronic Actuators, Partner: UNILJ

	Short description	Bloom Verb level	Content (<i>keywords</i>)	Context (<i>keywords</i>)
ILO1				
ILO n				

¹ For more info refer to: <https://doi.org/10.3390/educsci12070438>.

Teaching and Learning Activities (TLA)

The template for the formulation of the TLA is emphasizing the following dimensions:

- What is the teacher supposed to do to enact the underlying ILO
- What is the learner supposed to do to enact the underlying ILO
- How does the suggested activity relate to good teaching practices as expressed in the 7 principles of good learning²

Table 2.1: TLAs for the Course: Mechatronic Actuators, Partner: UNILJ

ILO reference (Highlight the Verb that need be aligned)	Teaching Activity (What the teachers do)	Learning Activity (What the students do)	How does this use the 7 Principles of good learning
ILO1	TA 1.1 TA1.2	LA1.1 LA1.2	
ILOn			

Table 2.2: TAs for the Course: Mechatronic Actuators, Partner: UNILJ

Course moment ³	Weekday, date and time slot ⁴	LA Type ⁵	Location ⁶	ILO Code	TLA Code ⁷	Course material ⁸	Keywords	Link to the material

² 7 principles of good learning:

- encourages contact between students and faculty,
- develops reciprocity and cooperation among students,
- encourages active learning,
- gives prompt feedback,
- emphasizes time on task,
- communicates high expectations
- respects diverse talents and ways of learning

Arthur W. Chickering and Zelda F. Gamson (1987)

³ Can be physical meeting or homework or any other kind of activity that need to be done in the course (e.g., visit). It shows the chronological flow of the course.

⁴ It helps understanding relative positioning and duration of different course moments.

⁵ referring to column 3 of the Table 3 (can be one of the listed examples). For more info refer to <https://doi.org/10.3390/educsci12070438>.

⁶ Class, home, lab, company

⁷ Follow the code of the previous template Table 2.1 (TA)

⁸ Material supporting each course moment. Can be: 3d models, www page, note, quizz, code, video lecture, book, chapter, task, video, slides, peer work

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Table 3: Learning activities examples (column 3)

Bloom Taxonomy	EGV	Learning Activities (Examples)
Remember	arrange, define, list, identify	Lecture, Reading materials
Comprehension	classify, discuss, present, rewrite	Mind map, Think-pair-share, Discussion, Reflection, Fishbowl
Apply	solve, calculate, demonstrate, organize, use	Case study in real-life situation, Problem-solving tasks, Roleplay, Group work, Laboratory
Analyze	categorize, contrast, compare, debate, inspect	Debates, Class discussion, Jigsaw method, Think-pair-share, Fishbowl, Laboratory
Evaluate	assess, conclude, justify, measure	Journal, Debates, Mind map, Peer evaluation
Create	design, develop, revise, formulate	Brainstorm, Design a presentation, Create a new report, Construct a roleplay

Assessment Task

The template for the formulation of the AT is emphasizing different assessment strategies for different verbs and different learning style.

Table 4: TAs for the Course: Manufacturing processes, Partner: UNILJ

ILO reference (Highlight the Verb)	Assessment task 1	Assessment task 2	Assessment task n
ILO 1	Bloom level: Type***: Short description:		

Table 5: AT examples

Bloom Taxonomy	EGV	Assessment Task (Examples)
Remember	arrange, define, list, identify	Multiple choice, quiz/ test, question banks, take-home examinations
Comprehension	classify, discuss, present, rewrite	Concept/ mind maps, interview, debate, problem sheet, minutes, forum posts, open-book, individual presentation, group presentation, viva-voce
Apply	solve, calculate, demonstrate, organize, use	Abstract, case study, problem-solving tasks, roleplay, group work, portfolio, workbook, project
Analyze	categorize, contrast, compare, debate, inspect	Thesis, annotated bibliography, literature review, debates, class discussion, jigsaw method, think-pair-share, fishbowl, laboratory
Evaluate	assess, conclude, justify, measure	Report, reflection, journal, debates, mind map, peer evaluation, group work, teamwork
Create	design, develop, revise, formulate	Project, thesis, article, essay, creative work, demonstration, performance, roleplay, recorded/ rendered creative work,