

| INTEGRATED LABORATORIES – PEDAGOGICAL DIMENSION I (MASTED-01-12) | | | | |
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| DEGREE PROGRAM: | | Master in integrated STEAM Education (MASTED) | | |
| SEMESTER: First | TYPE: Basic | CREDITS: 1 ECTS | WORKLOAD: 25 hours | MENTORING: 4 hours/week |
| LANGUAGE: Portuguese/English | | | | |

| OBJECTIVES | |
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| General | To understand and apply the theoretical framework of Problem-based Learning (PBL) |
| Specific | <ul style="list-style-type: none"> • Be able to implement PBL method in an authentic learning case. • To create a learning design according to PBL that is completed in various learning environments such as in classroom, online and utilizing new technologies even when these all learning environments are used in the same teaching and learning process. • To set a project with clear objectives, timetable and resources. • To design a learning process where their students solve real world problems. |
| SUBJECT MATTER | |
| <p>Problem-Based Learning (PBL) is a pedagogical model that promotes active, student-centred learning by presenting complex real-world problems to students. According to this pedagogical model, while finding answers to problems, students are led to problematize, reflect and attribute meaning to their learning.</p> <p>With this action, it is intended that participants have, through the theoretical model of Problem-Based Learning and the teaching methodologies addressed, contributions and structures for their teaching practices. Teacher evaluation, peer evaluation and self-evaluation are integral to this action. The subject will include: Teaching Paradigm versus Learning Paradigm; The teacher's role in PBL-based learning; how PBL works in practice and Canvas tools (online) to support the creation of a learning design.</p> | |
| COMPETENCES | |
| <ul style="list-style-type: none"> • C1: Developing knowledge and understanding in pedagogy. • C2: Developing advanced cognitive and procedural skills associated with knowledge development and creation. • C5: Developing of assess in order to evidence learning and to improve the learning process and the teaching practices. • C6: Developing the ability to pay attention to diversity and equality so as to favour the inclusion of all students. • C7: Developing the ability to establish effective relationships with families, to cooperate with colleagues and with other institutions from the community. • C9: Integrating the theoretical knowledge acquired throughout the course with field practice. • C14: Developing advanced digital competences. • C15: Developing digital pedagogy competences to use, plan and implement new technologies. • C19: Developing competences for intercultural communication. | |
| LEARNING OUTCOMES | |
| Knowledge | <ul style="list-style-type: none"> • Curricular knowledge. • Knowledge of the Problem-based Learning framework and their application in the classroom |
| Skills | <ul style="list-style-type: none"> • Ability for creating a learning design for their real-life teaching practices where they take into account their students' learning process in authentic learning situations (follow the PBL). • Ability to create clear objectives, timetable, and resources for the project itself. • Ability for setting a real-world development/production/research project as the context of PBL. |

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| Attitudes/values | <ul style="list-style-type: none"> • Commitment for promoting the learning of all students. • Disposition to examining, discussing, questioning one's own practices. • Improvement of attitudes of research, innovation, collaboration, autonomous learning. • Disposition to flexibility and ongoing learning. • Disposition to being critical, self-critical and reflecting on the ethical and professional aspects of the profession, as well as on the own practice. |
| TEACHING METHODS | |
| <p>The teaching methodologies follow the dialogical, digital and deep learning model (Ruhalahti, 2019). The design principles that are followed:</p> <ul style="list-style-type: none"> - Dialogical training to build a collaborative learning community. - Authenticity: defining questions about what is there to learn. - Self-paced orientation and reflection to topics. - Building a scaffolding process for participants. - Using digital tools and environments for the learning process. <p>The detailed learning design with scaffolding is created based on the extent of the curricula unit and learning objectives. The teaching and scaffolding activities are conducted in a classroom and online. Digital tools for learning are used based on the concept of the Personal Learning Environment (Wheeler, 2015).</p> <p>Participants will have by the chosen teaching methodologies inputs and frameworks for their own authentic teaching practices that they can utilize within the Problem-based learning method. Guidance and scaffolding is given also after the contact lessons. Teacher's assessment, peer-assessment and self-assessment is a fixed part of the training process. The training programme of pedagogy concerning this whole project proposal is in three phases and in the final phase the used teaching methodology is introduced as one of the future pedagogical design principles.</p> | |
| EVALUATION | |
| Assessment during the whole learning process. | |
| PRECONDITIONS | |
| None | |
| DEPARTMENT | Education sciences |
| LECTURERS | Sara Cruz |
| LITERATURE | <ul style="list-style-type: none"> • Ruhalahti, S. (2019). Redesigning a Pedagogical Model for Scaffolding Dialogical, Digital and Deep Learning in Vocational Teacher Education, Acta electronica Universitatis Lapponiensis 257. • Upola, S. (2019). Työelämäorientoitunut projektioppiminen ammatillisen koulutuksen kontekstissa. Acta electronica Universitatis Lapponiensis. • Wheeler, S. (2015). Learning with 'e's Educational theory and practice in the digital age. Llandysul: Gomer Press. |