

## 4.2 Activity: Introduction of ECTS

The M. Sc. curriculum in e-learning is created by performing an analyses of the content of e-learning courses syllabi that are available all over the world. As a result of those analyses, the e-learning curriculum is determined. The following categories of courses in e-learning are determined, as necessary to be included in the programme: general (G) courses, learning & teaching (L&T) courses, design (D) courses, technology (T) courses, and project management (P) courses. The curriculum covers all the mentioned areas, including at least one course per area. Additionally, all the courses are divided into core and elective types.

M. Sc. in e-learning courses are designed as a blended delivery model – mixture of face-to-face lectures and exercises and independent study with online interaction. Some lessons and exercises are performed face-to-face in hypermedia laboratory. The complete teaching material (lectures, exercises, assignments) for all courses is available electronically at Moodle system. The lessons discussions are performed via discussion forums of the Moodle LCMS and direct consulting with teacher and associates through e-mail or video-conference.

Since ECTS credits are a measure of student workload within a curriculum, credits were used as a planning tool when this M. Sc. curriculum has been defined.

Workload for blended courses contains time required in class activities and time for virtual (e –learning) activities.

Time required in class activities is the time required for contact teaching modules connected with the course

Virtual activities contain:

- time for completing learning assignments
- time for communication with tutors and other course participants
- time for reading course literature of other study material
- time for material search
- time required to learn how to operate the software, learning environments and other special tools,

Time provided for electronic communication is estimated according to messages produced by a student - 100-200 words/hour.



In each new software application, at least 8 hours is needed for learning how to use it.

The experience gained in the pilot run of an international lecture in Human-Computer Interaction (HCI) and Usability Engineering (UE) at the Faculty of Electrical Engineering and Computer Sciences, University of Maribor, is very useful for calculation of student workload for blended courses in frame of the M. Sc. Curriculum in e-learning.

Table 1. presents activities in Moodle environment performed by the student in each phase. Each activity is ranked as compulsory (c) or non-compulsory (n) and the recommended length of time is given. As seen from the table, each phase may last 24 to 32 hours, which gives an average of 150 hours for 5 phases. This matches the requirement for students by the Bologna process (15 weeks at 10 hours equals 5 credit points (ECTS)).

Step	Activity	n/c	Duration (hours)
1	Reading relevant slides	n	4-6
2	E-material reading	n	
3	Answering abc questions in e-material	n	
4	Reading the book	n	
5	Reading additional scientific material	n	
6	Search for examples, adding own contribution to the discussion forum	c	4-6
7	Reading answering school mate's answers	n	
8	Reading exercise, task solving and end report writing	C	6-8
9	Completion of current project work and report writing	c	8-10
10	Answers to exam preparation	n	2

Another useful example of calculation of student workload for an online course is given in M.Sc. program Master of distance education at University of Maryland University Collage and Carl von Ossietzky University of Oldenburg, Germany.

Their courses are only offered in the online mode. Students must be prepared to invest an average 10 hour workload in each week of the course. The 150 hours workload during the course consists of:

- 50 hours of reading,
- 50 hours of active, visible participation in the discussion groups,
- 50 hours for assignments.

Experts identify three different methods of credit allocation. These are:

- The top-down method
- The bottom-up method



- Credit allocation by reference to learning outcome.

The courses included in the M. Sc. curriculum in e-learning were determined first, so the top-down method is the easiest method and most suitable for credit allocation. To achieve (arithmetical) coherence of credits for different courses the credits for all modules are multiples of a given basic size. The basic size of a course is chosen to be 5 credits and all courses are awarded credits that are multiples of 5. In fact all courses are awarded 5 credits.

On the other aspect, the best way to calculate the number of student hours for successfully completing a new module, is to identify and enumerate the learning outcomes and competences. The advantages of this method of credit allocation are:

- The use of learning outcomes in describing programmes and individual modules helps to establish programme equivalence.
- Learning outcomes indicate equivalence in terms of both the volume and the level of those contents.
- This method enables the curriculum developer to look at exactly how much student effort is necessary to achieve the specified outcomes.

In theory, this method of credit allocation is excellent and it is consistently used by those who design open and distance learning modules.

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