

Technology in Rehabilitation (TechReh) 561621-EPP-1-2015-1-IT-EPPKA2-CBHE-JP

Deliverable D2.2 ECTS recognition of the master

The present document is a deliverable of the TechReh project, funded by the Erasmus+ Programme: Higher Education – International capacity building of the European Union, under grant agreement no. 2015-3676.

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The evaluation of the workload required to achieve the objectives of the master course program (objectives specified in terms of the learning outcomes and competences to be acquired) will be done in order to define the recognition of ECTS. A Diploma Supplement will be designed to provide a standardized description of the nature, level, context, content and status of the master

Authors:

UNIPEMC: Prof. Veronique Perdereau and Dr. Gérard Sou

Uzbekistan: Dr. Barno Ganieva, Prof. Marat Rakhmatullaev, Kamoliddin Shukurov (TUIT), Igor Vikhrov (TMPI), Sherbek Normatov (TUIT, Karshi branch).



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Véronique Perdereau, UNIPEMC, made a presentation entitled “Module approach and ECTS system for Master degrees in Bologna declaration signed countries, the UNIPEMC example” during the consortium meeting in Tashkent on November 2016 (presentation in Annex) to explain UZ partners how ECTS recognition and diploma supplement are implemented in Europe. UZ partners realized that their universities are still not ready to deliver credits.

UZ partners : please provide some further explanations

UZ partners presented during the same meeting the document their universities provide to the students on a regular basis. It looks already very similar to a diploma supplement as it details the list of courses taken by a student, the subjects and activities for each of them, the period (semester) they are taught, the nature of the teaching activities including self-preparation and the workload in hours corresponding to each unit of the Master degree they are delivered. A similar document was later prepared for the new Master programme and presented by UZ partners during the consortium meeting in Paris, in April 2017.



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Curriculum descriptor

The Tashkent university example



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THE MINISTRY OF ICT OF UZBEKISTAN TASHKENT UNIVERSITY OF INFORMATION TECHNOLOGIES

APPROVAL

Rector _____ T.Z. Teshabaev

2017 year «_»_____

M.ŷ.

CURRICULUM

Specialization: – *Master program for Engineering students*
(“Computer systems in Medicine”)

Academic degree – MASTER

Studying period – 2 year

Form of training – internal

I. TABLE OF TEACHING PROCESS

Course	Weeks																																																Total	Educational process (in weeks)									
	September				October				November				December				January				February				March				April				May				June				July				August					Theory and research	Manaka amaliyoti	Attestation (cert-n)	Preparation to writing Master Degree	Vacations	Altogether				
	1-4	5-8	9-12	13-16	17-20	21-24	25-28	29-32	33-36	37-40	41-44	45-48	1-4	5-8	9-12	13-16	17-20	21-24	25-28	29-32	33-36	37-40	41-44	45-48	1-4	5-8	9-12	13-16	17-20	21-24	25-28	29-32	33-36	37-40	41-44	45-48																							
I																																																44	40		4	8	52						
II																																																				42	20	8	7	7	6	48	
TOTAL:																																																86	60	8	11	7	14	100					

Theory and research
 State certification
 Professional practice
 Attestation
 Vacation
 Preparation Master degree thesis

II. CURRICULUM

№	Name of subjects and activities	Student's workload (hours)								
		Total workload		Auditory lessons						Self-preparation
				Total	Lecture	Practice	Lab	Seminar	Course works	
		Hours	%	5	6	7	8	9	10	11
1.00	General methodological subjects	528	35	360	130	220	10			168
1.01	Socio-economic development strategy of Uzbekistan	58		40	20	20				18
1.02	Methodology of scientific research	88		60	30	30				28
1.03	Pedagogical technologies	58		40	20	20				18
1.04	Practical English	148		100		100				48
1.05	Information systems	60		40	20	10	10			20
1.06	Culture of speech	58		40	20	20				18
1.07	Patenting, Licensing and Certification	58		40	20	20				18
2.00	Mandatory specialization subjects	668	44	380	180	140	60		1 cw	288
2.01	Biomechanics	142		80	40	40				62
2.02	Designing mechatronic systems for rehabilitation	126		60	20	40				66
2.03	Image processing for human analysis	122		80	40	20	20		cw	42
2.04	Programming real-time systems	122		80	40	20	20			42
2.05	Virtual reality	156		80	40	20	20			76
3.00	Elective subjects	316	21	260	140	60	60			56
3.01	Physical human-machine interaction	120		120	60	20	20			20
3.02	Introduction to neuro-sensori motor disorders	98		80	40	20	20			18
3.03	Introduction to musculo-skeleton disorders	98		80	40	20	20			18
	Total	1512	100	1000						512
4.00	Scientific activity	2700		1808						892
4.01	The scientific-research work and the preparation of a master dissertation	1890		1260						630
4.02	Research and teaching activity	378		260						118
4.03	Professional practice	432		288						144
	Total	4212		2808						1404



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Vice Rector for Academic Affairs _____ F. Agzamov

Head of the training department _____ A. Ergashev

Responsible for the direction _____ J. Djumanov



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**Module approach and ECTS system for Master degrees in Bologna
declaration signed countries, the UNIPEMC example**

Prof. Véronique Perdereau
Tashkent consortium meeting
November 2016



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Module approach and ECTS system for Master Degrees in Bologna Declaration signed countries
The UNIPEMC example
Prof. Véronique PERDEREAU
UNIPEMC

UPMC

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Degree programs

- UPMC has structured its institutional policy around the **LMD system** (Bachelor's, Master's, and Doctorate)

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Teaching activities

- Frontal lectures, practical exercises, laboratory work or autonomous project work
- 1 credit (ECTS) = 25-30 hours**
 - 10 hours with a teacher
 - 15-20 hours of personal work
- Learning outcomes are evaluated on written exams, practical work reports or research papers analysis.

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- Practical work**
 - Supervised lab works with computers or experimental set-ups in research labs or hospitals, or individual projects on case study or development of devices for rehabilitation
 - In the engineering for health area, practical work may be till 50% the total number of hours in some units that require practical implementation of the acquired knowledge

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- Internships**
 - Considered as a fundamental tool for counseling and employability of young people
 - More practical experience for students
 - Involvement of the labor market into education
 - Internship periods are seen as part of the training, supervisors at the host organization being the teachers.

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ACCREDITATION

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National rules

- The master's degree recognizes a level corresponding to obtaining **120 European credits** (ECTS) beyond the bachelor's grade (licence).
- The master's degree has a national name adopted by the Minister of Education that specifies its purpose and the concerned training field.
- In the context of international mobility, the master's degree is accompanied with a **diploma supplement** mentioning the institution that issued it.

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- The training includes:
 - theoretical, methodological and applied lessons
 - when required, one or more internships
 - an introduction to research and, in particular, the development of a thesis or other personal study
- The organization of the training and the methods for testing knowledge and skills are described in the diploma accreditation.
- The master's degree may be issued only after certification of the ability to master at least one foreign language.
 - Training courses include lessons for students to acquire this skill.

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- The master's degree is awarded by institutions of cultural, scientific and professional character empowered to do so, alone or jointly with other public higher education institutions authorized to issue national qualifications, by order of the Minister of Higher Education after the advice of the national Council for Higher Education and Research.
- The authorization is granted or renewed after a **periodic national assessment** as part of the contractual policy.
 - It specifies the name of the degree and the name of the head of training course.
- The master's degree allows universities to organize all of its training courses in a field of training.
 - For the accreditation, universities submit to the national assessment the organization of their training courses by field of training.

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Master graduation at UPMC

- For his master's degree, the student takes a training course consisting of a coherent set of teaching units (EU). This course is divided into **four training semesters** (S1, S2, S3 and S4).
- The training offered by UPMC is **broken down into units** (UE). Each unit corresponds to a coherent set of teaching courses, and represents a set of skills, knowledge and/or expertise.
 - Each unit is assigned a value in European credits (ECTS). This value is proportional to the total volume of activities (lectures, tutorials and practical works, homework, thesis, project, etc) a student must follow in the unit.
 - Each semester corresponds to 30 credits. Four semesters of 30 credits or 120 credits in total are needed to be awarded a Master.

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- The training is adapted to the professional and personal project of the student for his future while fulfilling the requirements defined in the accreditation of each Master
 - The composition of the semesters of the training course is defined by the student during his progression, in consultation with the Education Department from which he depends.
 - It is determined by specifying in a learning agreement the units chosen among those proposed by the Department.

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Course registration

- In each period of the academic year, students must register to the Education Department corresponding to the master's degree he wants to get.
- The first period runs from September to January and the second period from February to June of the academic year

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- In consultation with the Education Department from which he depends, the student defines his learning agreement for the semester:
 - The list of the units for the training semester (S1, S2, S3 or S4) on which the marks will be compiled to validate the semester,
 - The list of the units he will follow during the period.
- The student can follow the teaching units of one semester on one or more periods.** A student cannot be enrolled in more than two training semesters simultaneously. A unit can take part in one semester only.

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Validation of teaching units

- UPMC believes that the assessment of student (s) must validate the acquired knowledge and skills, and also be an integral part of the training course. This implies that the assessment of student (s) corresponds to a set of procedures designed to measure learning progress in terms of acquired knowledge and integration of knowledge and skills. The latter can be specific or general, or cross disciplinary. They are defined by each Education Department

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- General principles
 - A unit can be validated every time it is taught.
 - A unit is **definitively acquired** when the average (10 out of 20) is obtained in the unit; the student no longer has the opportunity to register.
 - The evaluation process and the nature of the tests are proposed by the teachers in charge of teaching units. Processes specific to each unit and the corresponding rates are defined each year by the Board of the Education Department, reviewed by the Advisory Teaching Commission and approved by the UPMC CEVU.

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- A unit may include mandatory learning activities, that is to say, assessment is seen as a tool for students to regularly assess the progress of their knowledge acquisition and the effectiveness of their own work.
 - It consists of a set of tests left to the discretion of the teacher responsible for the unit in the form of written or oral examinations, reports on practical works, homework, presentations, etc.
 - It covers the set of knowledge or skills to acquire, or part of it. It is not included in the examination that the student must have participated to them to validate the unit.
 - These, as well as the terms of the assessment of specific knowledge in the unit are given to students at the beginning of each period.
- In each period when the unit is taught, the assessment of knowledge is organized twice.

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- Evaluation processes
 - Marks should reflect excellence, satisfactory or inadequate acquisition of knowledge, know-how and/or skills.
 - Evaluation of a unit is either a terminal evaluation process, with or without a continuous assessment, or a distributed process.
 - All of these assessments serve as the first session. The second evaluation session will focus on the knowledge and skills of the unit.

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- Terminal evaluation
 - The terminal evaluation is designed as an evaluation of an entire period of learning and takes place at the end of it.
 - It is organized during exam sessions in accordance with the schedule voted by UPMC CEVU.
 - It is a test of the same type for all students to the same degree, under the same training course and pace of study. It is subject of an appropriate notice.
 - The nature of the tests may vary between the two sessions. The scoring scale of each unit and the terms of each session are provided before the lessons start. When this terminal evaluation includes written tests, copies are anonymous and available for consultation at the Education Department.

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- Continuous assessment
 - Continuous schedule and can take place during teaching hours.
- Distributed evaluation
 - Assessment during the semester that punctuates the end of a well-defined unit part.
 - The schedule for the tests (two or three per semester) and nature is determined by the Education Department and brought to the attention of the students within one month after the start of lessons.
 - Events are subject to an appropriate notification.
 - When the evaluation process includes written tests, copies are anonymous and available on request from the student.

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- Types of tests
 - Each of the tests prescribed in the evaluation method specific to each unit is recorded and affected a coefficient.
- Oral tests
 - Oral questions may be individual or group assessment. The topic may be different for each student.
- Written tests
 - As part of a continuous process of assessment, forms and modalities of written tests are specified by the teacher responsible for the unit no later than one month after the start of the lessons.
 - Written procedures involved in terminal or distributed evaluation events must be organized to ensure the copies remain anonymous.

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- Assessment of practical work
 - Evaluation of practical work takes into account not only technical skills and the acquisition of knowledge during the sessions (reports), but also the attendance and student behavior.
 - This assessment may be a lab practice exam, or a written or oral exam on the analysis of experimental data.
- Assessment of internships, projects and literature searches
 - This assessment may be based on written reports, defenses, presentations, posters, etc..

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- Unit validation
 - A unit is validated when:
 - the average of all scores assessing knowledge of the unit affected their respective coefficients is greater than or equal to 10 out of 20.
 - after a decision of the biannual compensation Committee.
 - no score is eliminatory.
 - Two evaluation sessions are organized for all units.
 - The unit average is the average score obtained by taking into account all obtained marks and their respective coefficients as determined by the Education department and told to the student no later than one month after the start of the lessons.

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- Units are validated for good.
 - When the credits corresponding to a unit were obtained by semester compensation, the marks of the unit can be ironed.
 - The student may re-examine and when he is successful, the unit is validated and the corresponding credits allocated but the average remains unchanged. In contrast, the newly acquired score appears on the diploma supplement.
- If the period is not validated, any non-acquired unit should be evaluated in the second session.
 - Upon approval of the minutes of the first examination session, the marks obtained at terminal or distributed assessment are reset, except the marks from an assessment of practical work, projects and bibliographic research.
 - In case of no attendance to the second session, zero is stored and replaces the score obtained after the first session examination.

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Validation of courses and progression in the curriculum

- Semester validation
 - A biannual compensation committee meets after each session. It decides whether the training semester is validated or not. A semester can be validated in three different ways:
 - Acquisition of all units composing the training semester for 30 credits,
 - Compensation, when at least one unit of the training semester is not acquired, but the average score for all units of the training semester affected their respective coefficients is greater than or equal to 10 out of 20; 30 credits are then acquired by compensation.
 - By decision of the committee, when the average score for all units of the training semester is less than 10/20

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- **Compensation**
 - Compensation is made at the end of a period on the 30 credits corresponding to the units of the semester.
 - All units listed in the learning agreement take part of the compensation.
 - In case the student, in accordance with the Education department, prepared during this period units for more than 30 credits, compensation is then on the 30 credits of the learning agreement, the additional units out the learning agreement are not taken into account in the compensation.
 - A student may waive the compensation in order to improve his score.
 - In this case, his semester is not validated and he must reexamine for all units non-acquired at the first session.

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- When a unit is not acquired after both examination sessions, the score is reset.
 - Marks scoring practical skills can be retained for a next period when they are greater than or equal to 12 out of 20 if the student wishes.
 - The student may re-enroll in this semester at a later time, or make a different choice, which requires a change in the learning agreement. The limit of 30 credits prepared by period still applies.

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- When a student is again attending a unit that was not validated in an earlier period, he must make a new registration.
 - He is entitled to two new examination sessions.
 - Consequently, all the marks acquired from a terminal or distributed evaluation during a previous registration are dropped out, except marks scoring practical skills when they are greater than or equal to 12 /20 and if the student wishes.
- In order to reorient, in agreement with the Education department that he depends, a student who failed to validate a semester of his curriculum at a period can modify the composition of the semester for the next period.
 - If, in the second period a student exchanges free or optional units, compensation can only be done with the marks of these newly selected units, including the second examination session if it occurs. The unit chosen in the previous period is considered additional and if it is acquired, is not participating in the compensation.

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Certification

- **Master degree**
 - The degree of Master in Science and Technology can be obtained either by validating all units of a training course in the chosen specialty or by validating each of the four semesters of the training course using compensation rules, and after certification of the ability to master a foreign language.
 - The Master's degree committee meets at the end of the training course and awards the Master degree in Science and Technology with the indication of specific specialty attended, ensuring that the entire course meets the requirements set out in the master accreditation.

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- **Distinctions:**
 - « passable », « assez bien », « bien », « très bien », are awarded by the degree committee on the basis of the average score of all units of the last two semesters of the training course.
- **Designation of committee members**
 - The President of the University designates by a decree the President and members of the degree committee after consultation of the person in charge of the concerned master.
 - The head of the Education Department chairs the biannual compensation committee, appoints the members and informs the President of the University.

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Organization of exams

- The head of the Master is responsible for the organization of the knowledge assessment.
- Interruption of classes and continuous assessment for a week before the final exams is mandatory.
- Absence to a test leads to a 0. Compensation is still possible.
- Any unjustified absence to a mandatory training activity prevents the student from validation of the relevant unit and the score of the unit is set to 0.
- **Plagiarism detection**
 - The Master in engineering sciences has access to the compilatio.net website to analyze all the work performed by students and quickly detect plagiarism.

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- To be enrolled in courses leading to a master's degree, students must have a national diploma conferring the bachelor's degree (licence) compatible with the field of the national master's degree or an accreditation certificate of prior learning or experience.
- Example: Provided they have the necessary pre-requisites, the curriculum in engineering for health is open to students holding a Bachelor degree in Mechanics, Electronics, Computer science, Physics, or Mechatronics. It is also open to medical students who would like to complete their training.

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- A level B1 is required at the end of the training course to be awarded the master degree since the master's degree may be issued only after certification of the ability to master at least one foreign language.
 - English, generally
 - French when teaching is English

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Accreditation of prior learning

- Student applications are evaluated by the person in charge of the training course and pre-requisites carefully checked.
 - For the recognition of prior studies and credit transfer, UPMC applies the European Credit Transfer and Accumulation System (ECTS).
 - Course descriptions contain 'learning outcomes' (i.e. what students are expected to know, understand and be able to do) and workload (i.e. the time students typically need to achieve these outcomes).
 - Each learning outcome is expressed in terms of credits, with a student workload ranging from 1 500 to 1 800 hours for an academic year, and one credit generally corresponds to 25-30 hours of work.

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- The admission officer has a clear image in terms of hours and content of what is required as skills and knowledge for the admission to the training course and can identify their equivalent in the student curriculum.
- Anyone may also request the validation of higher education he has done, especially abroad. The validation is decided by a committee whose members are appointed by the president of the university or the head of the higher education institution depending on the nature of the requested accreditation.

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Accreditation of prior experience

- Anyone who has worked for at least three years as a professional, earning wage or not, volunteer or unpaid helper, in connection with the topic of the application, may apply for accreditation of prior experience to support all or part of the knowledge and skills required for a diploma or certificate issued on behalf of the State by a higher education institution.
- The validation is decided by a committee whose members are appointed by the president of the university or the head of the higher education institution depending on the nature of the requested accreditation.
 - For the validation of acquired experience, the committee shall consist of academic staff members for its major part, and also of other competent people including professionals to appreciate the nature of the acquired knowledge and skills whose validation is requested.
 - The committee is composed so as to obtain a balanced representation of women and men.


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- The committee makes the decision
 - on the basis of an application file prepared by the candidate,
 - after an interview with him and, if applicable, a real or simulated professional real-playing, when this procedure is prescribed by the authority issuing the certification.
- It also decides on the extent of validation and, in case of partial validation, on the nature of knowledge and skills to be additionally evaluated.
- Validation has the same effect as passing the tests of knowledge and skills it replaces.

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