



Synoptic scheme of grade systems and Manual for the correct transfer of grades between the involved institutions

Project reference Number 574099-EPP-1-2016-1-IT-EPPKA2-CBHE-JP
Grant Agreement 2016 – 3772 / 001 – 001

Deliverable Title	D4-4.3 Synoptic scheme of grade systems and Manual for the correct transfer of grades between the involved institutions
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Related Work package:	WP2
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Dissemination level:	International
Due submission date:	30/09/2019
Actual submission:	30/09/2019
Version	V 0.2
Project Number	574099
Instrument:	Specific Support Action (SSA)
Start date of Project:	15/10/2016
Duration:	36 months

Abstract	This document reports on the state-of-the-art report on EU FC programmes.
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Versioning and Contribution History

Version	Date	Modification reason	Modified by
V 1	17/10/2018	Creation of document	MU
V.2	30/09/2019	Finalisation of document	MU

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1. Executive Summary

As part of the WP4 responsibilities, the project outputs should include a manual for the correct transfer of grades and credits between the involved institutions in the pilot courses, including the synoptic scheme of grade systems is approved and published in the web site.

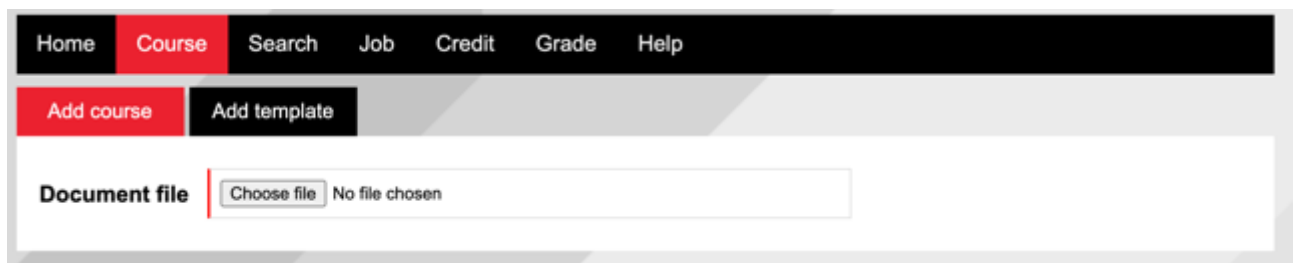
After it became apparent that most of the consortium members were not members of EGRA-CONS, it was agreed that MUHEC would work with a sub-contractor to adapt its MUSKET platform to support the PAWER consortium for credit recognition and grade conversion. The MUSKET tools support these processes and can be used after the successful completion of a student mobility.

2. Introduction

The MUSKET tool supports a number of functions as follows:

- Creating a course
- Searching for courses
- Searching for jobs
- Recognising credits
- Converting grades

The following figure shows the homepage of the MUSKET tool.



The mapping taking place in MUSKET is based on the use of the XCRI-CAP model. This is an information model used for eXchanging Course Related Information using Course Advertising Profiles. The principle is that each heading in a course description document (e.g. learning outcomes) is mapped onto an XCRI-CAP field. Below there is a representation of some CCRI-CAP fields.

catalog > provider > course > (identifier)
catalog > provider > course > (title)
catalog > provider > course > credit > (level)
catalog > provider > course > (credit)
catalog > provider > course > presentation > (start)
catalog > provider > course > presentation > (subject)
NO matching XCRI-CAP
catalog > provider > course > (objective)
catalog > provider > course > (learningOutcome)
catalog > provider > course > presentation > (subject)
catalog > (description)
catalog > provider > course > (assessment)
catalog > provider > course > (assessment)
catalog > provider > course > (assessment)
catalog > provider > course > (assessment)
catalog > provider > course > (assessment)
catalog > provider > course > (assessment)
catalog > provider > course > (assessment)
NO matching XCRI-CAP
NO matching XCRI-CAP
NO matching XCRI-CAP
catalog > provider > course > presentation > (studyMod

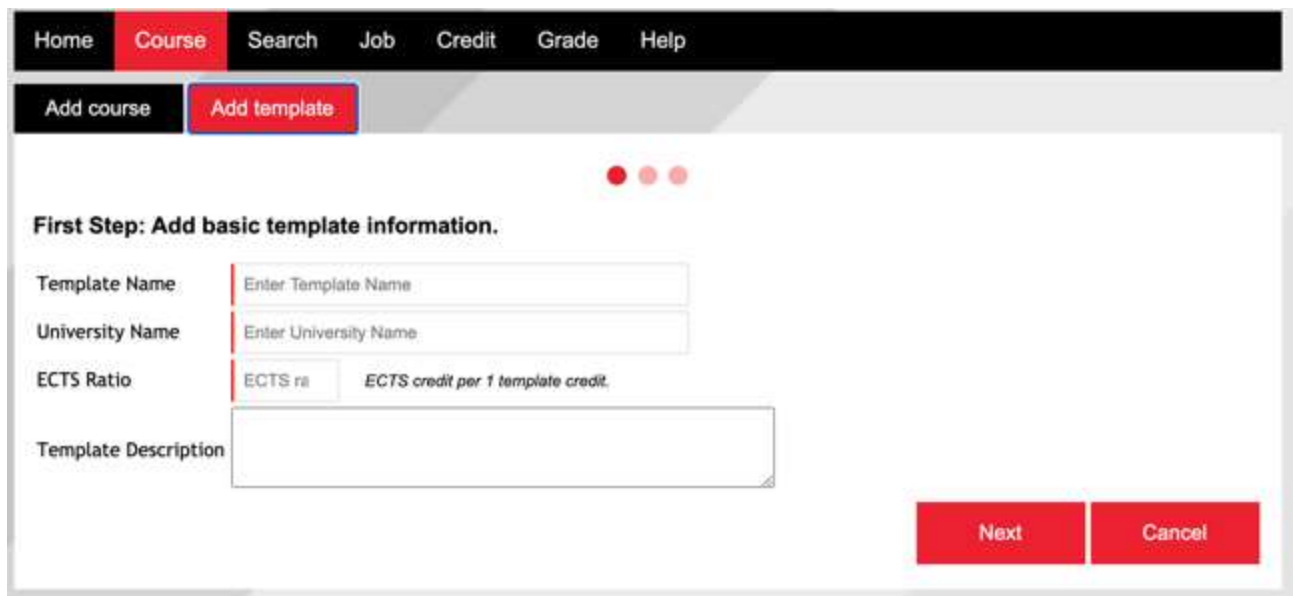
3. Functionality

The MUSKET tool supports the following functionalities.

Creating a course

New users need to create a template in the MUSKET tool. This means that they have to help the tool to understand the main headings of the document template used to provide their course information. After this is done for the first time, then the user can add a course by simply uploading a file with the course description.

The following figure shows how the user can create a new template and a course name from scratch. A critical step is to identify the ECTS ratio for this course as it will be needed for all future mappings.



The screenshot shows the MUSKET tool interface. At the top, there is a navigation bar with links: Home, Course (highlighted), Search, Job, Credit, Grade, and Help. Below this, there are two buttons: 'Add course' and 'Add template' (highlighted). The main content area is titled 'First Step: Add basic template information.' and contains the following form fields:

- Template Name: Enter Template Name
- University Name: Enter University Name
- ECTS Ratio: ECTS ratio (input field) and ECTS credit per 1 template credit (input field)
- Template Description: (text area)

At the bottom right, there are two red buttons: 'Next' and 'Cancel'.

Searching for courses

Once the institution has uploaded its courses online, it is possible to compare courses from different institutions as shown below. The user can select certain keywords and a simple search will show the instances of the search keywords in both course descriptions using the templates of each institution.

Keywords

Please add your keywords that are will be used in your search

 Add

- mathematics ✕

algebra ✕

statistics ✕

calculus ✕

Algorithm ✕

Universities and Courses selection

Please select the courses from the list to univesities.

Course	University	Course
Course A	Middlesex University ▼	Foundation Mathematics (BIO) ▼
Course B	UNIVERSITA DEGLI STUDI DELL'AQUILA ▼	Mathematical Methods ▼
Course C	TECHNOLOGICAL UNIVERSITY OF TAJIKISTAN ▼	Mathematics in economics ▼

The mapping compares those course description headings that are mapped to the same XCRI-CAP field. In this case the Learning Outcome field is used to compare three courses with regards to the keywords entered by the user.

learningOutcome	Knowledge On completion of this module, the successful student will be able to: 1. demonstrate familiarity with the basics of numbers and algebra ; 2. demonstrate an understanding of common algebraic operations; 3. identify and solve problems involving different types of functions; 4. understand the importance of good methodology when collecting data; 5. identify appropriate descriptive statistics for a simple data set . Skills This module will	3	Pre-Course di mathematical method: mathematics for economics and financial applications. Algebraic and literal calculation, MCD, mcm. Arithmetic and geometric progressions. Combination calculus : main formulas. equations And inequalities of first and second degree. Power Properties, Logarithms and exponentials. Equations and inequalities with exponentials and logarithms. Properties of radicals and absolute value. Equations and Inequalities with roots and absolute value. Equations and inequalities in the presence of products and Algebraic expressions. Systems of equations and inequalities. Trigonometry: Fundamental formulas and trigonometric functions. Analytical geometry:	2	As a result of discipline studying students should know: • the basic constructs, principles and mechanism of modern object-oriented language; be able: • to define and use classes; • to develop applications; • to use modern IDE . have an idea: • about memory volume and performance estimating	0

A summary of the keyword presence in each course is provided as a summary of the comparison and is illustrated below.

Keyword result ✕

Keyword	Number of hits
mathematics	5
algebra	4
statistics	3
calculus	0
Algorithm	0
Total	12

It is also possible to compare the similarity of the different courses against a set of keywords. This is a very helpful function for those students who need to search for courses that are similar to the ones they have at their own institution. This function can help academics when putting together a learning agreement for student mobility.

Compare

Similarity

Keywords Add

programming ✕

XCRI-CAP Field Add

Search for similarity

Course	Similarity percentage
Object-Oriented Programming KHAZAR UNIVERSITY - KHAZAR	8.33 %
Introduction to Programming ILIA STATE UNIVERSITY	4.04 %
Mathematics in economics TECHNOLOGICAL UNIVERSITY OF TAJIKISTAN	2.07 %

Searching for jobs

The MUSKET tool is connected to a number of job search websites, This means that every Friday it downloads the latest jobs that can be searched using the same keyword sets used for searching for a course. This is shown below.

Search
Comparison
Addition

Add

Data Scientist ✕

Advanced option
+


Search for job

35 job(s) were found.

[Data Science Consultant](#)

£ Salary: £60,000 - £80,000 per annum

Post date: 2020-02-15



The ability to compare actual jobs allows students to check current jobs relating to the courses they wish to study. Students can also check how a specific job relates to their course and see what aspects of the course are necessary for the job.

Document details

Course : Business Intelligence
 University : Middlesex University
 Template : [MDX Bis](#)

Heading	XCRI-CAP	Content
Module code	identifier	CST3340
Title	title	Business Intelligence
Credit points	value	30
Start term		2019/2020
Module leader		Joanna Loveday Accredited by: Module restrictions: Pre-requisite None Programme restrictions None Level restrictions None Other restrictions or requirements None
Aims	objective	This module aims to develop an understanding of the techniques and approaches used to capture, store and analyse data generated by organisations for purposes of business intelligence. In a digital age it is important for businesses to make use of data captured about its entities. You will learn about information retrieval, data presentation, pattern recognition techniques and data models

Therefore, students can see the relevance of their programme of study and specific courses to actual jobs. This can help them decide on course options according to their preferred career path.

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Recognising credits

The next step is to proceed with credit recognition. The following figure shows a list of countries and ECTS mappings.

Country

University

Course

Countries comparison

▼

▼

Compare

Comparison result

Hide all countries

Country	ECTS Credit for 1 credit
Australia 1	1.25
Australia 2	0.63
Australia 3	1.25
Brazil	2.5
Canada	2.0
China 1	1.67
China 2	2.0
China 3	2.5
China 4	1.7

Students can compare between specific countries to see the credit equivalence to ECTS.

Countries comparison

Rusian Federation ▼

Brazil ▼

Compare

Comparison result

1 credit in Rusian Federation equals 1.0 ECTS credit(s) which equals to 0.4 credit in Brazil

They can also compare different universities as in certain countries several credit systems exist.

Universities comparison

Sh. Ualikhanov KOKSHETAU STATE UNIVERSITY - KokSU Middlesex University| ▼ Compare

Comparison result

1 credit at Sh. Ualikhanov KOKSHETAU STATE UNIVERSITY - KokSU equals 0.6 ECTS credit which equals to 0.6 credit at Middlesex University

Once students have identified the University they wish to have a mobility exchange with they can start adding courses in order to reach the intended number of ECTS for their learning agreement.

Country	University	Course	Credit	ECTS Credit	
KHAZAR UNIVERSITY - KHAZAR	Please Select a course				Show Credit
Middlesex University	Business Intelligence	30	30		✘
Sh. Ualikhanov KOKSHETAU STATE UNIVERSITY - KokSU	Agronomy	7	4.2		✘
S. Seifullin KAZAKH AGRO TECHNICAL UNIVERSITY	Plant breeding	5	3		✘
Total		42	37.2		Delete all

Converting grades

Each institution has an online form to enter grades for the past 3-5 years of a course's assessment. This requires to define its assessment system and map it to ECTS grades.

Compare
Add
Define

University

Country

Please list passing grades used from highest to lowest with total number of of time students obtained each grade

Grades <small>From highest to lowest passing grade</small>	ECTS equivalent	+
<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	✗
<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	✗
<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	✗

Add grade
Reset
Submit

Once they have defined their grade system, universities need to provide the full grades for each course. This is done using the form below.

Compare
Add
Define

Grade Template [Not found? Define a new template](#)

Course

Faculty

Department

Academic year - From /to /

Please list passing grades used from highest to lowest with total number of of time students obtained each grade

Grades / ECTS equivalent:	Total Number <small>Number of time students obtained each grade</small>
Grades / ECTS equivalent 1 / A	<input style="width: 95%;" type="text" value="0"/>
Grades / ECTS equivalent 2 / A	<input style="width: 95%;" type="text" value="0"/>
Grades / ECTS equivalent 3 / A	<input style="width: 95%;" type="text" value="0"/>
Grades / ECTS equivalent 4 / A	<input style="width: 95%;" type="text" value="0"/>
Grades / ECTS equivalent 5 / B	<input style="width: 95%;" type="text" value="0"/>
Grades / ECTS equivalent 6 / B	<input style="width: 95%;" type="text" value="0"/>
Grades / ECTS equivalent 7 / B	<input style="width: 95%;" type="text" value="0"/>

The final step is to compare specific grades between two Universities, therefore providing advice for the grade conversion after a student mobility has taken place.

Universities comparison

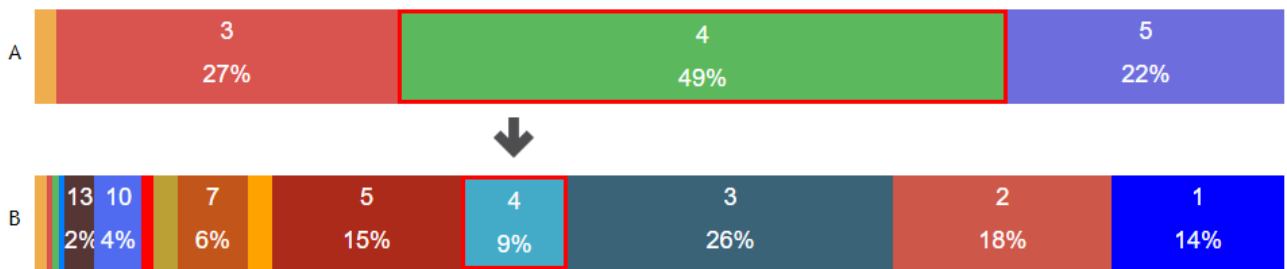
University A: Uzbekistan | ANDIJAN AGRICULTURAL INS | Biology and genetics

University B: United Kingdom | Middlesex University | Strategic Management Informat

Grade: 4

In grade overlap: Avg Min Max Convert

Grade 4 (ECTS=B) in "Biology and genetics" at ANDIJAN AGRICULTURAL INSTITUTE - AAI is equivalent to grade 4 (ECTS=A) in "Strategic Management Information System" at Middlesex University.



4. Conclusions

This report provided an overview of the MUSKET tools and how it can support the PAWER consortium with its various functions including credit transfer and grade conversion support.