



Spatial Data Infrastructure and Earth Observation Education and Training for North Africa

Results of the analysis of current SDI/EO education at the partner universities

T 1.1 Current status at partner universities – FINAL REPORT

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via

Microsoft Teams



25th February 2021

Final Report

Task T1.1: Current status at partner universities

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Name



SEED4NA_T1.1 FINAL REPORT_11-01-2021.pdf

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T1.1 - Current status at partner universities

- **Introduction – Project description**

- **SEED4NA - SDI and EO Education and Training for North Africa**
- As a contribution to the project application, the analysis of the HEI's (High Education Institution) sector offer in terms of SDI (Spatial Data Infrastructure) and EO (Earth Observation) in the North African region has been investigated
- The overview of the current status has been provided at the country's level involving Egypt, Morocco, Algeria and Tunisia
- Common findings can be summarized as to indicating the lack of education which leads to a request for update existing and creation of new courses that will address the challenges in SDI and EO domains.



T1.1 - Current status at partner universities

• Introduction – Project description

- **SEED4NA - SDI and EO Education and Training for North Africa**
- **General objective of SEED4NA:** improve the quality of higher education in the fields of SDI and EO, and to enhance its relevance for the labour market and society by improving the level of competences and skills through the development of new/innovative SDI/EO curricula.
- **Specific objectives of SEED4NA:** to investigate, determine and analyze the needs and requirements for SDI/EO education in North Africa and to develop, test and adapt new curricula, courses, learning material and tools within the field of SDI and EO.
- The most tangible results of the project will be a set of new and/or updated courses on SDI, EO and related topics in each of the four partner countries



T1.1 - Current status at partner universities

• Introduction - WP1

- The goal of WP1 is to conduct the necessary surveys and to perform an analysis of collected information aiming to create the environment and design in a systematic way the specifications for the SDI and EO (with emphasis on Copernicus) project or baseline curriculum
- WP1 has the following specific operational objectives:
 - ✓ to analyze the present curricula with regard to GI and EO at HEI's in partner countries
- To carry out all that is stated above, the activities within WP1 are organized into four tasks :
 - **T1.1 – Current status at partner universities**
 - T1.2 – Current status of learning material from program countries
 - T1.3 - Requirement analysis
 - T1.4 - Specification of the project curriculum.



T1.1 - Current status at partner universities

- **Introduction - WP1**

- In T1.4 the project or baseline curriculum will be designed based on T1.1, T1.2 and T1.3.
- The design will include the definition of the curriculum structure (building blocks), its content (the topics covered and a short description), the learning outcomes, the effort required (in time) and the number of ECTS (for academic education), the level(s) according to EQF, pre-and post requisites, and reference(s)



T1.1 - Current status at partner universities

Table 1. Logical Framework Matrix (LFM) concerning the T1.1

<p>Outputs (tangible) and Outcomes (intangible): <i>Please provide the list of concrete DELIVERABLES - outputs/outcomes (grouped in Work packages), leading to the specific objective/s.:</i></p>	<p>Indicators of progress: <i>What are the indicators to measure whether and to what extent the project achieves the envisaged results and effects?</i></p>	<p>How indicators will be measured: <i>What are the sources of information on these indicators?</i></p>
<p>D1.1: Detailed analysis of current status at the partner universities</p>	<p>I1.1: Partner universities response on current status survey</p>	<p>M1.1: Reports from partner universities and Status report</p>



T1.1 - Current status at partner universities

- **T1.1 activities evolution**

- Kick-off meeting in Leuven (18-20 February 2020)
- Meeting, presentations, consultations, e-mail communication, Zoom, Skype...
- Draft of T1.1 Questionnaire
- Revisions, improvements...
- Release of the T1.1 Questionnaire on Google Forms
- August-September-October 2020: Responses to T1.1 Questionnaire
- October 2020 – January 2021: compilation of the T1.1 Final Report



T1.1 - Current status at partner universities

- T1.1 Questionnaire

- Part 1: GENERAL INFORMATION

- Partner institution
 - Contributor
 - Name of the Course
 - To be updated and to what extent
 - Level of study programme
 - Obligatory/elective
 - Workload of the course
 - Language

- Part 2: COURSE SPECIFIC INFORMATION

- Abstract of the course (major topics)
 - Structure of the course
 - Learning outcomes
 - Hyperlink to a course
 - Teaching format
 - Type and format of learning materials

- The T1.1 questionnaire is foreseen to be filled individually for each course

Section 2 of 4

Part 1: GENERAL INFORMATION

General information about the Course and its environment.

Section 3 of 4

Part 2: COURSE SPECIFIC INFORMATION

Specific information about the Course.



T1.1 - Current status at partner universities

- Methodology



- BESTSDI

- The specific objectives of the Erasmus+ BESTSDI project were to develop, test, and adapt new curricula, courses, learning material and tools within the field of SDI
 - The main goal of T1.1 was to collect data about the current curriculum and existing courses which were subsequently analyzed to identify components that may become part of a project curriculum (general curriculum addressing the needs of the consortium as a whole)
 - Data about 220 courses related to GI (geoinformation) or SDI (spatial data infrastructure) were collected through the questionnaire. The focus of the analysis was the identification of those courses which were candidates to become part of the BESTSDI curriculum in its original or modified way
 - A tag cloud as a text analytical tool was used in the analysis of different collected metadata
 - remarks on: **Course abstracts** and **Learning outcomes**



T1.1 - Current status at partner universities

- Methodology



- SPIDER

- SPIDER project aims to promote and strengthen active learning and teaching towards Open SDI and to develop a Map of SDI Education in Europe
 - The mapping of SDI Education provides an in-depth description and investigation of existing courses on SDI, collecting and analyzing information on the programs in which SDI education is included, the topics addressed, the learning objectives and the teaching and learning activities that are adopted.
 - Based on the information collected through these data collection activities, 126 different courses were identified as SDI courses and proposed to be included in the analysis
 - The report is supplemented by the Appendix where is given a list of SDI related courses, each course is presented in a structured form addressing all 11 relevant metadata.



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Table 3. Partners in SEED4NA project with numbers of courses submitted through T1.1 Questionnaire

Partner institution	Respondent(s) to a T1.1 Questionnaire	Courses surveyed by T1.1 Questionnaire		
Alexandria Univ. (P6)	Dina M. Saadallah Hany Ayad	3	To be updated	3
			New	0
Fayoum Univ. (P7)	Prof. Mahmoud M. Shendi Mahmoud Abdelfattah	5	To be updated	5
			New	0
Univ. Ibnou Zohr (P8)	Adnane Labbaci	2	To be updated	2
			New	0
Hassan II (IAV) (P9)	Hajji Hicham Ait El Kadi Kenza Reda Yaagoubi	9	To be updated	1
			New	0
Carthage Univ. (P10)	Issam Nouri TARHOUNI Jamila	2	To be updated	?
			New	?
UN. of Jendouba (P11)	Slaheddine Khelifi Fatma Trabelsi	4	To be updated	3
			New	1
ORAN-1 (P13)	Mejdi Kaddour Aribi Nouredine BENAISSA Nouredine	4	To be updated	2
			New	2
USTHB (P14)	Assia Kourgli	10	To be updated	5
			New	5
TOTAL:		39	To be updated	21
			New	8

Data Analysis

Partner institution you are affiliated with:
39 responses

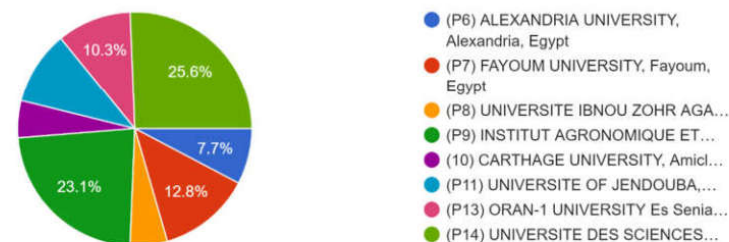


Figure 1. Partners in SEED4NA project with their relative participation in T1.1 Questionnaire



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Level of Study Programme:

39 responses

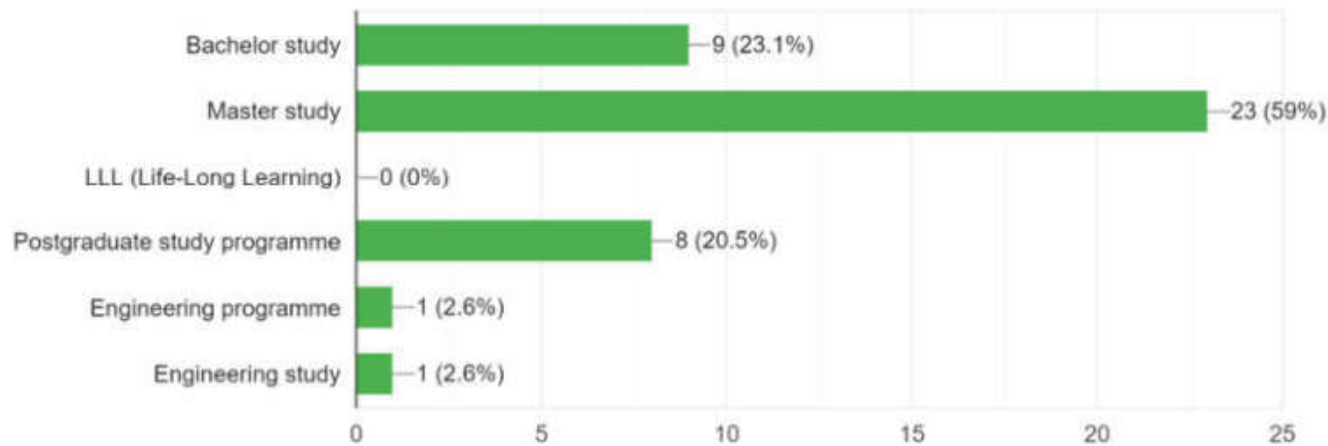


Figure 2. Distribution of courses by different study levels (Engineering programme and Engineering study most likely belong to a Master study level)



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Teaching format(s):

39 responses

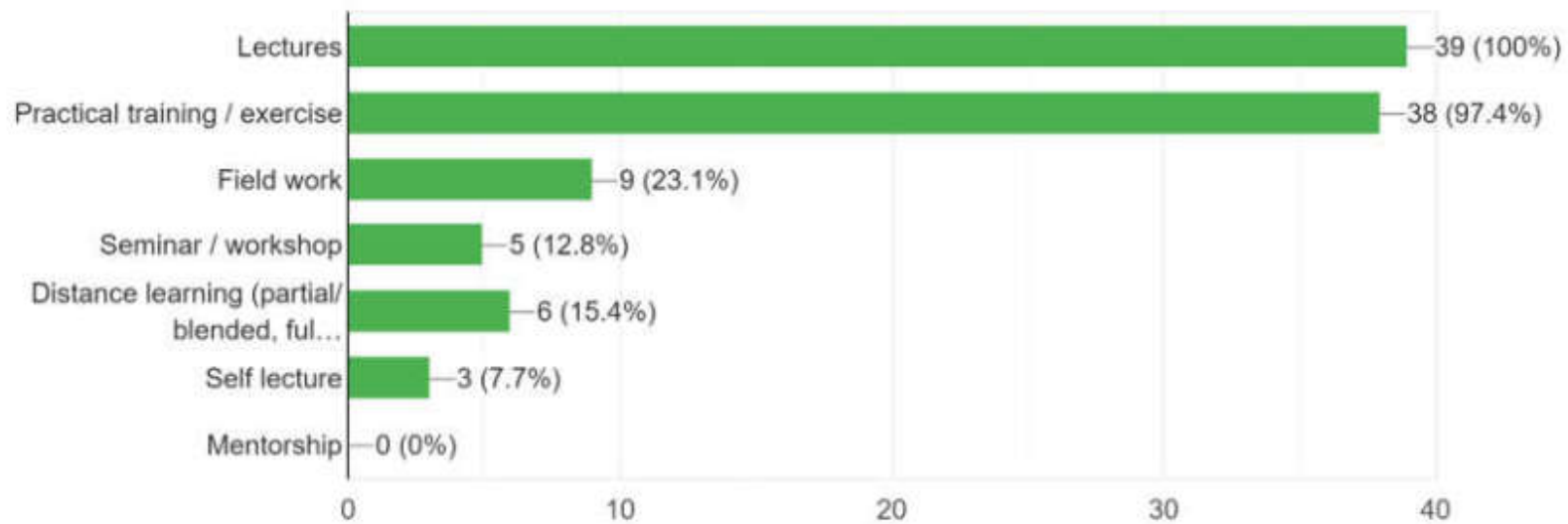


Figure 6. . Usage of different teaching formats for the execution of courses



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T1.1 - Current status at partner universities

- **Data analysis per each country**

- Since similar rules are applied in each partner country and similar situations are seen there, the data analysis about courses was carried out per each country.
- Analysis of the courses offered by each partner is given per different aspects: to be updated/new; Abstract (major topics); Structure; Learning outcomes.

Table 5. Summary of courses at Alexandria University (P6) per Abstract (major topics); Structure of the course and Learning outcomes

Course	To be updated (%) / new	Abstract (major topics)	Structure of the course	Learning outcomes
geographical Information system	25 %	Too general; details missing	Details missing; Partially addressing SDI	Appropriate use of Dublin descriptors
Application of GIS / Remote sensing in Environmental Indicators	50 %	Too general; details missing	Details missing; Partially addressing EO	Too general; details missing
Introduction to Remote sensing	70 %	Too general; details missing	Details missing; Partially addressing EO	Too general; details missing

General remark: Abstract of the courses (major topics) are too general, with details missing. Similar findings apply to the structure of the course.

T1.1 - Current status at partner universities

After the survey has been carried out, data about courses gathered through a T1.1 Questionnaire were compared with data which was available before the survey

Table 13. Comparison of information about courses as stated in the Project Description document VS. data gathered through a T1.1 Questionnaire

UNIVERSITY	As stated in the PROJECT DESCRIPTION	To be updated/New	Data gathered through a T1.1 Questionnaire	To be updated/New
Alexandria University (P6)	Spatial Modelling and Applications for SDI (Master's degree)	New		
	Web GIS and Geoportals for SDI (Master's degree)	New		
	Introduction to GIS for SDI (Master's degree)	To be updated		
	Database Management Systems for SDI (Master's degree)	To be updated		
			Geographical Information System (Bachelor study)	To be updated
			Application of GIS / Remote sensing in Environmental Indicators (Postgraduate study programme)	To be updated
			Introduction to Remote sensing (Postgraduate study programme)	To be updated



Conclusions and Recommendations

- Even though the metadata about courses is structured, most of the metadata fields were in the form of a free text which made the analysis of the dataset collected through a T1.1 Questionnaire a nontrivial task
- Through a questionnaire, data were requested about the following key features of the existing courses:
 - Abstract (major topics)
 - Structure of the course
 - Learning outcomes
- Course outcomes are frequently poorly documented i.e. they are frequently not written according to the guidelines on how the learning outcomes have to be written
- Bearing in mind the deliverables of the 'T1.4 Specification of the project curriculum', course descriptions (Abstract of the course and learning outcomes) will have to be designed to better represent the course itself
- course-specific information (Abstract, Structure of the course and Learning outcomes) are frequently poorly documented making a comprehensive analysis looking for elements belonging to EO and/or SDI domain hardly feasible



Conclusions and Recommendations

- The courses assessed through the T1.1 Questionnaire mostly belong to a 'Master study' level, then comes the 'Bachelor study level' and 'Postgraduate study level'
- The majority of assessed courses are obligatory ones: out of 39 surveyed courses, 35 are Obligatory and the remainder of 4 is not obligatory (elective).
- When it comes to the languages of courses, at P6 they are given in the English language, at P7 there is a combination (English and Arabic), at other partner universities, the courses are taught in the French language
- Major findings and remarks about courses are given for each partner university
- The comparison of information about courses available before the launch of the T1.1 Questionnaire with information gathered through a survey, have shown great differences: a good match between that two datasets was found only at P7
- Generally, hyperlinks to the online resources about courses were not provided
- A general recommendation for subsequent activities, more specifically within the T1.4 would be to pay great attention to the definition of the curriculum structure (building blocks), their content (the topics covered and a short description), and the learning outcomes as well.



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- **Appendix – factsheets of courses assessed via T1.1 Questionnaire**

factsheets – a structured outline of the most important facts about courses.

Course name	geographical information system
University	Alexandria University, Faculty of engineering Architectural Department
Country	Egypt
Info provided by:	Dina M.Saadallah/ dina.saadallah@alexu.edu.eg
Study Programme:	undergraduate course
Level of Study Programme:	Bachelor study
Language(s)	English
Course to be updated/ new:	to be updated , 25 %
Abstract of the Course:	Principles of Geographical Information Systems and their application in urban studies- Methods of establishing statistical databases- Geographical data collection Computer applications linking statistical and geographical databases- use of software in studying the change in built environment- Applied software.
Structure of the Course:	Introduction and Overview of Geographic Information Systems GIS and Maps, Map Projections and Coordinate Systems Spatial Data Models Data Sources, Data Input and Data Quality Database Concepts Spatial Analysis
Learning outcomes:	Understand principles of Geographical Information Systems and their application in urban studies. Explain Methods of establishing statistical databases Define methodologies of Geographical data collection and interpretation. Explain computer applications linking statistical and geographical databases Develop skills for selecting and appraising appropriate GIS tools to a variety of urban problems Apply software in studying the change in built environment Prove the skills to prepare and present technical reports. Apply to use GIS applications in urban studies - Present urban projects using an appropriate range of media and software.
Link to course description:	

Thank you for your attention!



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