## EUROPEAN UNION HORIZON 2020 RESEARCH & INNOVATION PROGRAMME

D4.3

# Electronic material upload on eplatform





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#### LIST OF ABBREVIATIONS

Abbreviation	Description
D	Deliverable
DMS	Document Management System
Fraunhofer IFF	Fraunhofer Institute for Factory Operation and Automation IFF
GNU	General Public License
LMS	Learning Management System
LTI	Learning Tools Interoperability
SCORM	Sharable Content Object Reference Model
STIP	Sustainable Transport Interchanges Program
STSE	Short-Term Staff Exchanges
TTI	Transport and Telecommunication Institute
UTH	University of Thessaly
WP	Work Package

#### ABSTRACT

The present deliverable reports the upload of the electronic materials on ALLIANCE e-platform. The deliverable presents the generic workflow for the development of e-courses for ALLIANCE e-platform and gives an overall overview of the uploaded materials.

## 1 Introduction

### **1.1 Contents of the deliverable**

The present deliverable reports the upload of the electronic materials on ALLIANCE e-platform. The deliverable presents the generic workflow for the courses' development for ALLIANCE e-platform and gives an overall overview of the uploaded materials. The main objective of the e-platform as stated in D4.1 is to provide public access to the "Sustainable Transport Interchanges Program (STIP)" course material developed in the framework of WP2 and digitized in frame of WP4. The e-platform technically is based on the learning management system (LMS) Moodle. The digitized content of the courses is technically developed with the help of Moodle standard tools. Thus, iSpring software was used for producing sharable content object reference model (SCORM) packages, which allow integrating the presentation and narration in a user-friendly environment.

The outcome of deliverable D4.3 is materials produced by ALLIANCE consortium and uploaded into ALLIANCE e-platform, which is publicly available in the domain: <u>http://e-alliance.tsi.lv/</u>. The platform is accessed by a direct link or as a section in official webpage of the ALLIANCE project (<u>http://alliance-project.eu/</u>). The e-platform will be supported by TTI at least 5 years after the end of the project.

### 1.2 **Project overview**

ALLIANCE aims at developing advanced research and higher education institution in the field of smart interconnecting sustainable transport networks in Latvia, by linking the Transport and Telecommunication Institute – TTI with two internationally recognized research entities – University of Thessaly – UTH, Greece and Fraunhofer Institute for Factory Operation and Automation – Fraunhofer, Germany. The close collaboration of TTI with UTH and Fraunhofer will enable the achievement of the goals through the following activities:

- Organization of young researchers' seminars.
- Organization of workshops.
- Organization of summer schools for trainers and young researchers.
- Development of an educational programme for graduate and post-graduate students.
- Development of a training programme for trainers and practitioners.
- Provision of grants for participation as authors of peer-reviewed publications in conferences.
- Facilitation of Short-Term Staff Exchanges (STSE's) with the aim of international collaboration, mainly publications.
- Establishment of a guidance strategy for preparing scientific publications.
- Creation of an educational forum as an online tool for distance learning and knowledge sharing.

The overall methodology of the project is built around the analysis of the needs of Latvia and the surrounding region of the Baltic sea (Lithuania, Estonia, Poland) on knowledge gain about intermodal transportation networks and the development of the tools to attain this knowledge, providing at the same time excellence and innovation capacity. The analysis to be conducted during the first stages of the project, steps on the overarching relations among policymakers, industry and education/research.

Structured around three main pillars, organizational/governance, operational/services and service quality/customer satisfaction, ALLIANCE will deliver a coherent educational/training program, addressed to enhancing the knowledge of current and future researchers and professionals offering their services in Latvia and the wider region.

The expected impacts on the overall research and innovation potential of TTI and Latvian research community will be of high importance and TTI will benefit from ALLIANCE by:

- Improving its knowledge in methodologies for preparing, writing and publishing scientific papers.
- Strengthening its research capacity.
- Establishing international research teams in specific areas of interest.
- Generating new innovative ideas for future research work through the project's activities.
- Setting up the fundamentals for the young generation of researchers.
- Being integrated into a number of existing international transportation research networks.
- Being incorporated in the European research system of transport and logistics.

In addition, the cooperation of TTI with UTH and Fraunhofer will induce benefits into several domains of everyday life at regional, national and international scope. New bases will be established concerning knowledge transfer procedures, education and interdepartmental collaboration amongst research institutes. The innovative organizational framework, which will be structured for this purpose during the project, is expected to constitute a best practice application with tangible and well-estimated progress results, which will be disseminated and communicated through social events to the research community and to the respective business sector as well.

Lastly, an important benefit will be the configuration of an integrated framework pertaining to the knowledge transfer techniques and the generic upgrading of the educational system with use of networking, staff exchange, webinars and other knowledge transfer methods and techniques based on a well-structured and well-tried schedule.

# 2 Generic workflow for materials preparation and e-Courses development

The current section of this deliverable provides an overview of the generic forkflow adopted by ALLIANCE consortium to produce electronic material for the development of the e-Courses.

### 2.1 Courses for e-platform

The courses for e-platform and the respective ALLIANCE partners' responsibility are presented in Table 1. The Table shows the responsible ALLIANCE partner that prepares the materials for e-Courses, while TTI has a responsibility to e-Courses development based on provided materials. The examples of the developed e-Courses with reference to Table 1 could be found in Annexes A-N.

	Core	Passenger transport	Freight transport	Responsibility
C0. Research methodology and teamwork setup	x			ТТІ
Governance				
C1. The European policy on intermodal transportation	x			UTH
C2. Building business models for intermodal transport interchanges	x			Fraunhofer IFF
C4. Operation and management of intermodal transport systems		x	x	UTH
Smart solutions				
C6. Intelligent services for passenger transportation		x		Fraunhofer IFF
C8. Design of passenger transport interchanges		x		UTH
C9. Design of freight transport interchanges			х	UTH
C10. Smart equipment for freight transshipment			х	Fraunhofer IFF
Decision making				
C11. Decision making methodologies	x			UTH
C12a. Data collection methods: surveys		х	х	UTH

#### Table 1: ALLIANCE digitalized courses

	Core	Passenger transport	Freight transport	Responsibility
C12b. Data collection methods: historical and observed data		х	х	Fraunhofer IFF

### 2.2 Generic workflow description

Figure 1 demonstrates the generic workflow adopted by ALLIANCE consortium to provide the ecourses.

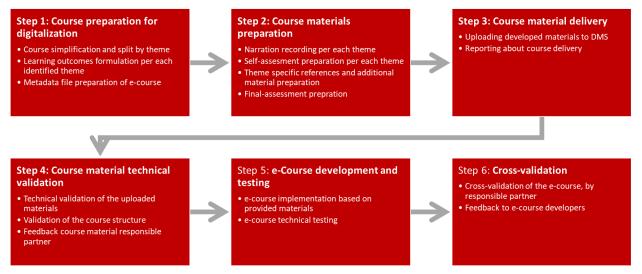
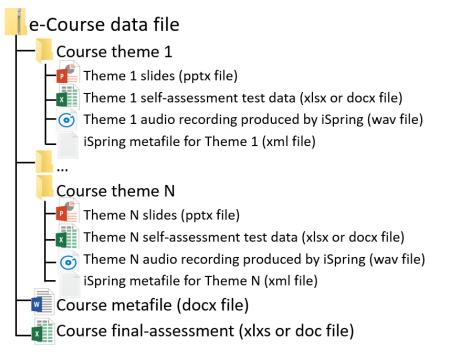


Figure 1. Generic workflow description

As it can be seen in Figure 1, the proposed workflow is simple and clear, but at the same time contains specific quality assurance steps. Moreover, additional materials, instructions and templates were provided to the responsible ALLIANCE partners for the material preparation. Below, additional details per workflow step are provided:

• Step 1: Course preparation for digitalisation. The main task of this step is to adopt earlier developed STIP materials in frame of WP2 and approbated in frame of WP3 for digitalisation. Adaptation in this case means the simplification of the course content and the split of the materials into themes. More details and instructions regarding this process are provided in D4.2. The most important outcome of this step is a metafile of the e-course, which defines general information about the course. The template for metafile was developed and provided to all responsible partners. The template can be seen in Annex O.

- Step 2: Course materials preparation. The main tool used for material preparation is iSpring software<sup>1</sup>, which allows to create SCORM<sup>2</sup> packages (Sharable Content Object Reference Model). Additional materials regarding the use of the iSpring software were provided to the partners in form of YouTube official videos. At the same time a pre-structured Excel file was provided to partners to develop the self-assessment tests. The file allows generating the tests in Moodle compatible format, so self-assessment test can be easily imported into the e-platform. Additional instructions and recommendations about the preparation of the materials are highlighted in D4.2.
- Step 3: Course materials delivery. Considering the size of the produced materials, all course materials after they were finished they were submitted to ALLIANCE project DMS as zip file. After the successful submission, TTI staff received a notification. The internal structure of the zip file for submission is presented below in Figure 2. The notification about upload was provided using e-mail.





• Step 4: Course material technical validation. Before implementation of the e-Course based on submitted materials, an internal technical validation was performed according to the presented workflow. The technical validation mainly concerned the evaluation of the quality of the narration, the review of self-assessment and final-assessment tests, and the checking that all provided materials work appropriately. Validation was

<sup>&</sup>lt;sup>1</sup> <u>https://www.ispringsolutions.com</u>

<sup>&</sup>lt;sup>2</sup> <u>https://scorm.com/scorm-explained/</u>

performed by TTI experts. After the successful validation, the materials were ready for the e-Course implementation, and in case of any issues the responsible partner was notified accordingly. Technical validation is an important step in workflow as it allows to avoid the situation that materials with some technical problems are uploaded to e-Course.

- Step 5: e-Course development and testing. After the course material technical validation, the materials were ready to be used for the e-Course development. The development in this step means preparation of all materials for uploading to e-platform of ALLIANCE project:
  - Provided theme presentations are converted to pdf format in form of handouts and are used in course as handouts file (could be printed and used for notes), as in the example demonstrated in Figure 3.

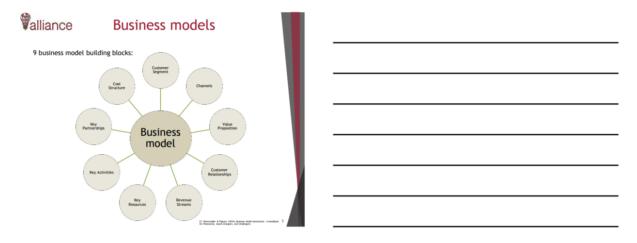


Figure 3. Example of handouts

 Provided theme presentation, iSpring files are used to convert presentations into SCORM packages, which are uploaded directly into e-platform. An example can be seen in Figure 4.

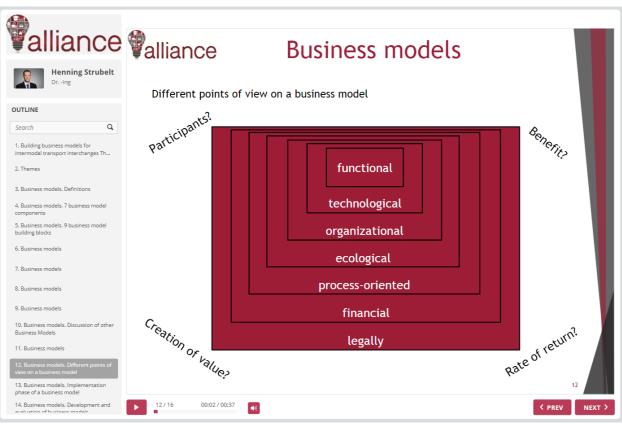
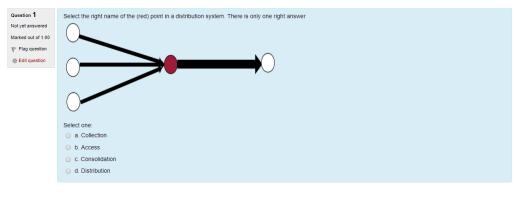


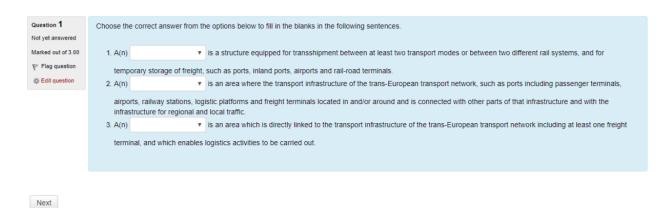
Figure 4. Example of SCORM package generated by iSpring

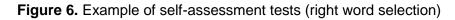
 Provided self-assessment and final assessment data files were converted into Moodle compatible format in case any data was provided in Excel file. Examples can be seen in Figures 5-7.



Next

Figure 5. Example of self-assessment tests (single answer)





QUIZ NAVIGATION		
	Started on	Friday, 21 December 2018, 11:07 AM
1 2 3 4 5 6 7 8 9 10	State	Finished
Show one page at a time	Completed on	Friday, 21 December 2018, 11:12 AM
Finish review		1 5 mins 6 secs
	Marks	\$ 18.00/30.00
Start a new preview	Grade	6.00 out of 10.00 (60%)
	 Question 1 Ple	ease state whether the following statements are true or false
	 Partially correct	ep: Identify a research problem. Quantitative research attempts to describe the trends and explain the relationships of the variables. Faice 🔻 🗙
ADMINISTRATION	Mark 1.00 out of	
Quiz administration	4.00	ep: Specify the purpose. Quantitative research is general and broad and seeks to understand the participants' experiences. True 🔻 🗙
Edit settings	♥ Flag question	p. specify the purpose. Quantitative research is general and bload and seeks to understand the participants experiences. The
<ul> <li>Group overrides</li> </ul>		ep: Collect data. Qualitative research collects information from a small number of individuals or sites. True
User overrides	Secon question Ste	
🍄 Edit quiz	5 to	ep: Analyze and interpret data. Quantitative research analyzes the text, the description of the themes and states the larger meaning of findings. True 🔻 🗙
Q Preview	516	p. Analyze and interpret data. Quantitative research analyzes the text, the description of the interest and states the larger meaning of infutings.
Results		
Locally assigned roles		
Permissions	 Question 2 Nat	me the three basic parts of a travel survey. For each part name one of its characteristics:
Check permissions	 Partially correct	Kar V
Filters	 Mark 3.00 out of	
Logs	 6.00	1.1 Gender – age
Backup	♥ Flag question	L. Genuel - aye
Restore		fdfdf
Question bank	to Eait question 2.	
Course administration		2.1. Trip purpose departure time and arrival time
Switch role to	3	fatar X
Site administration	0.(	
Search		3.1. Possession of private car

Figure 7. Example of the report about final assessment

Course general data was used to fill-in the e-Course in e-platform manually.
 The result of file uploading, and manual data insertion is an e-Course, and an example is demonstrated in Figure 3. During the e-Course development the following approved structure of e-Course was used:

- General information about the course
  - o Course title
  - Course id
  - Course aim and scope
  - o Course learning outcomes
  - Recommended information sources

- Collaboration forum
- o News forum
- Sections per each theme
  - $\circ$  Title of the theme
  - Learning outcomes of the specific theme
  - Theme SCORM<sup>3</sup> package: narrated presentation
  - o Theme handouts
  - o Specific references to additional materials regarding topic
  - o Self-assessment tests
- Final-assessment
- Feedback about course
- Certificate

The above-presented structure is common for all digitalised courses, but deviations are possible depending on the specific course and the responsible tutor.

Design of freight tran	nsport i	nterchanges		
Home ► Courses ► Sustainable Transport Int	terchange Program	n (STIP) 🕨 eC9	т	urn editing on
ACTIVITIES Conficates I Feedback Potatos Restances SCORM packages ONLINE USERS		Design of freight transport interchanges course title: Design (freight transport interchanges course to: = co	LOGGED IN USER Minals Savrasovs Capitry Latvia Capitry Latvia Capitry Latvia Capitry Latvia Capitry Latvia Capitry Latvia Capitry Latvia	
(last 5 minutes) None		Course author:	SEARCH FORUMS	
COURSE COMPLETION STATUS Completion is not enabled for this course		Prof. Efhila Nathanail Troffic, Transportation and Lagistics Laboratory, University of Thessaly, Greece	Advanced search (2)	
ADMINISTRATION ▼ Course administration P <sup>*</sup> Turn editing on 和 Edit settings		Course author bio Course aim and scope Course lawning outcomes Course lawning outcomes Recommended information sources Recommended shows sources Course form Course form Course form	LATEST NEWS Add a new topic (No news has been posted yet)	- 1
Los senars     Ues     Ues     Filters     Reports     Gradebook setup     Badges			UPCOMING EVENTS There are no upcoming events Go to calendar New event	
ి. Backup ది. Restore ది. Import @ Publish D Reset ▶ Question bank		Theme 1: Introduction The theme will focus on the companents of an intermodal freight terminal and will analyse the parameters that have to be estimated and assesses. An order to provide the input data for designing the terminal. If Theme 1: Introduction	MESSAGES No messages waiting Messages	
Switch role to     Site administration     Search		Teams 1 Handouts Self-assessments: Theme 1	RECENT ACTIVITY Activity since Wednesday, 26 December 20 Full report of recent activity No recent activity	118, 5:33 PM
		Theme 2. European legal framework - guidelines It will present the European regulation framework for designing and interconnecting freight transport interchanges and will require the reducerses or transportation plannou will require and units development procedures.		
		<ul> <li>Theme 2: European legal framework - guidelines</li> <li>Theme 2 Handous</li> <li>Theme 2 References</li> <li>Self-assessments: Theme 2</li> </ul>		
		Theme 3. Background This theme will focus on the background and on relevant information about the current state of practice of Intermodal themes themes and practice.		
		intermodal Height terminal itselites around Europe.		

Figure 8. Example of e-Course with uploaded materials

<sup>&</sup>lt;sup>3</sup> <u>https://scorm.com/scorm-explained/</u>

• Step 6: Cross-validation. Cross validation is the last step of the workflow. The main goal of this step was validate the developed e-Course by the developer of the materials and to ensure technical mistakes during e-Course development. The access to the e-Course is granted to the assigned person from ALLIANCE partners side. In case of some problems the issue is reported to e-Course developer.

## 3 Description of tools used to develop e-Courses

This section describes in brief the software tools used during the e-Courses development in frame of ALLIANCE project.

### 3.1 Moodle environment

The developed e-platform is organised as a website, based on the Moodle<sup>4</sup> environment (https://moodle.org). Moodle is a learning platform designed to provide educators, administrators and learners with a single robust, secure and integrated system to create personalised learning environments. With over 10 years of development guided by social constructionist pedagogy, Moodle delivers a powerful set of learner-centric tools and collaborative learning environments that empower both teaching and learning. Moodle is provided freely as Open Source software, under the GNU General Public License. Anyone can adapt, extend or modify Moodle for both commercial and non-commercial projects without any licensing fees and benefit from the costefficiencies, flexibility and other advantages of using Moodle. Moodle provides the most flexible tool-set to support both blended learning and 100% online courses. Moodle has a complete range of built-in features, including external collaborative tools such as forums, wikis, chats and blogs. Because it is open-source, Moodle can be customised in any way and tailored to individual needs. Its modular setup and interoperable design allow developers to create plugins and integrate external applications to achieve specific functionalities. Moodle is web-based and can be accessed from anywhere in the world. With a default mobile-compatible interface and cross-browser compatibility, content on the Moodle platform is easily accessible and consistent across different web browsers and devices. Moodle has achieved and is compliant with the following international standards: An Open Source Initiative; IMS LTI™; SCORM-ADL; Open Badges.

### 3.2 iSpring software

iSpring<sup>5</sup> is a well-known software in the market of tools, which supports online courses development. iSpring has different suites and therefore different functionality, but the most important functionality of the iSpring is ability to create SCORM packages, based on Power Point presentations. This allows to create from standard Power Point presentation, the online environment, which user-friendly and device-friendly. By user-friendly we do understand here the simple and clear way to follow the presentation, by the device-friendly we do understand ability to show the content on all types of devices starting from PC ending by mobile phones. iSpring can integrate in SCORM package: presentation, narration, video, online quizzes, etc. This makes iSpring useful for development online courses. In the same time iSpring has a number of opportunities related to the security issues, like protection from copying the SCORM packages or unrestricted downloading the materials. The deep integration with mentioned above Moodle

<sup>&</sup>lt;sup>4</sup> <u>https://moodle.com/about/</u>

<sup>&</sup>lt;sup>5</sup> <u>https://www.ispringsolutions.com</u>

platform throw SCORM packages, allows to use iSpring materials in the same way as Moodle standard features.

## 4 Results and statistics

This section demonstrates some results and statistics of e-platform development and the electronic material uploading. Figure 9 demonstrates the list of e-Courses implemented during ALLIANCE project, which is in-line with the list of courses in Table 1 of this deliverable. The Annex A-N of current deliverable has examples of each e-Course mentioned in the list below.

		Course categories:		
	Sustainable Transport Interchange	Program (STIP)	•	
	Search courses:		Go	
				✓ Collapse all
- Core courses				
The European policy on intermodal transp	ortation			
Building business models for intermodal tr	ansport interchanges			
Decision making methodologies				
<ul> <li>Passenger transport bloc</li> </ul>	k courses			
Design of passenger transport interchange	S			
Operation and management of intermodal	transport systems: passenger intercha	anges		
Intelligent services for passenger transport	ation			
Data collection methods: Historical and ob Collection	served data (Public transport)			
Data collection methods: Travel Surveys				
<ul> <li>Freight transport block c</li> </ul>	ourses			
Design of freight transport interchanges				
Operation and management of intermodal	transport systems: freight interchange	es		
Smart equipment for freight transshipment				
Data collection methods: Historical and ob Data collection	served data (Freight transport)			
Data collection methods: Freight Transport	ation Surveys			
Research methodology	and teamwork setup			

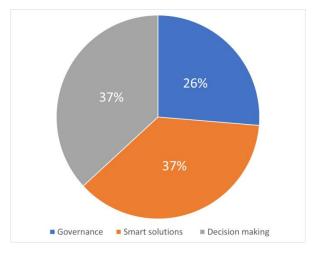
#### Figure 9. List of implemented e-Courses

The Table 2 demonstrates some statistics about the developed e-Courses and the materials used for e-Course development.

Course	Materials file size, Mb	Course narration length, min	Number of themes	Total number of slides
C0. Research methodology and teamwork setup	279	45	6	50
	Govern	ance		
C1. The European policy on intermodal transportation	179	26	4	41
C2. Building business models for intermodal transport interchanges	253	36	4	53
C4. Operation and management of intermodal transport systems: public transport	190	27	4	38
C4. Operation and management of intermodal transport systems: freight transport	179	26	4	43
Subtotal:	801	115	16	175
	Smart so	lutions		
C6. Intelligent services for passenger transportation	313	45	4	38
C8. Design of passenger transport interchanges	238	42	4	48
C9. Design of freight transport interchanges	223	31	5	58
C10. Smart equipment for freight transshipment	119	43	4	47
Subtotal:	893	161	17	191
	Decision	making		
C11. Decision making methodologies	319	47	6	74
C12a. Data collection methods: freight transport	151	22	4	32
C12a. Data collection	154	22	4	32

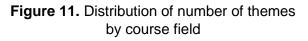
Course	Materials file size, Mb	Course narration length, min	Number of themes	Total number of slides
methods: public transport				
C12b. Data collection methods: historical and observed data: freight transport	151	40	3	47
C12b. Data collection methods: historical and observed data: public transport	76	30	2	19
Subtotal:	851	161	19	204
Total:	2824	482	58	620

Table 2 shows statistics about the developed materials for the e-Courses implementation. As it can be seen, the total size of the developed materials is around 2.8 Gigabytes. Significant part of this size is audio narration of the slides. The total amount of narration is around 8 hours. In total e-Courses cover 58 themes and are supported by more than 600 slides. Figure 10 and Figure 11 represent the narration length and number of themes by the field of the course (excluding C0).



36% 31% 33% 33% Occurrance Smart solutions Decision making

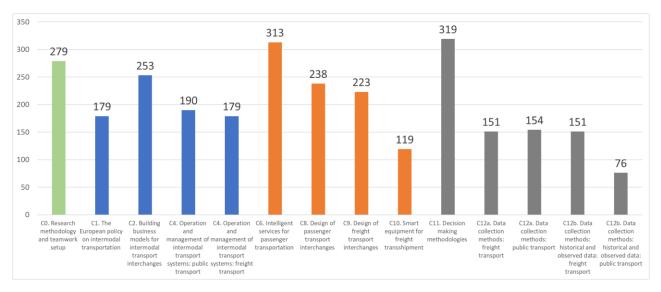
Figure 10. Distribution of narration length by course field



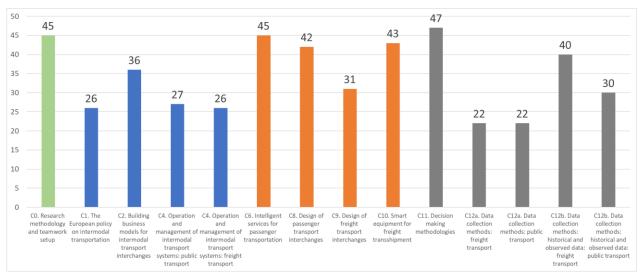
As it is observed in Figure 10 and Figure 11, the e-Courses of STIP are well balanced across the three thematic areas (Governance, Smart solutions, Decision making) by the total length of the

provided narration and the total number of themes. To note, the same distribution as for number of themes (Figure 11) is also observed for the total number of slides.

Figure 12 shows the volume of provided materials per e-Course, with coloring based on course thematic area. It is indicated that, the volume of materials deviates a lot, while the length of narration does not have such significant deviation as demonstrated in Figure 13.



**Figure 12.** Volume of provided materials per course, Mb (green-C0; blue – Governance courses; orange – Smart solutions courses; grey – Decision making)



**Figure 13.** Narration length per course, min (green-C0; blue – Governance courses; orange – Smart solutions courses; grey – Decision making)

To wrap-up, ALLIANCE consortium believes, that the digitalized STIP program (c-Courses) is well balanced by the three thematic areas (Governance, Smart solutions, Decisions making), and at the same time particularities of each course are appropriately considered. The developed e-Courses could be treated as a core of the STIP programme, which could be adopted, extended or modified by any institution, apart from ALLIANCE partners. Moreover, the e-Courses are dynamic, meaning, that each e-Course has a feedback form, which can be used to upgrade the e-Courses continuously.

#### 5 Annexes

Annex A: Screenshot of the course "The European policy on intermodal transportation"

**Annex B:** Screenshot of the course "Building business models for intermodal transport interchanges"

**Annex C:** Screenshot of the course "Operation and management of intermodal transport systems: freight interchanges"

**Annex D:** Screenshot of the course "Operation and management of intermodal transport systems: passenger interchanges"

Annex E: Screenshot of the course "Intelligent services for passenger transportation"

Annex F: Screenshot of the course "Design of passenger transport interchanges"

Annex G: Screenshot of the course "Design of freight transport interchanges"

Annex H: Screenshot of the course "Smart equipment for freight transshipment"

Annex I: Screenshot of the course "Decision making methodologies"

Annex J: Screenshot of the course "Data collection methods: Freight Transportation Surveys"

Annex K: Screenshot of the course "Data collection methods: Travel Surveys"

**Annex L:** Screenshot of the course "Data collection methods: Historical and observed data (Freight transport)"

**Annex M:** Screenshot of the course "Data collection methods: Historical and observed data (Public transport)"

Annex N: Screenshot of the course "Research methodology and teamwork setup"

Annex O: Template of e-Course metadata file

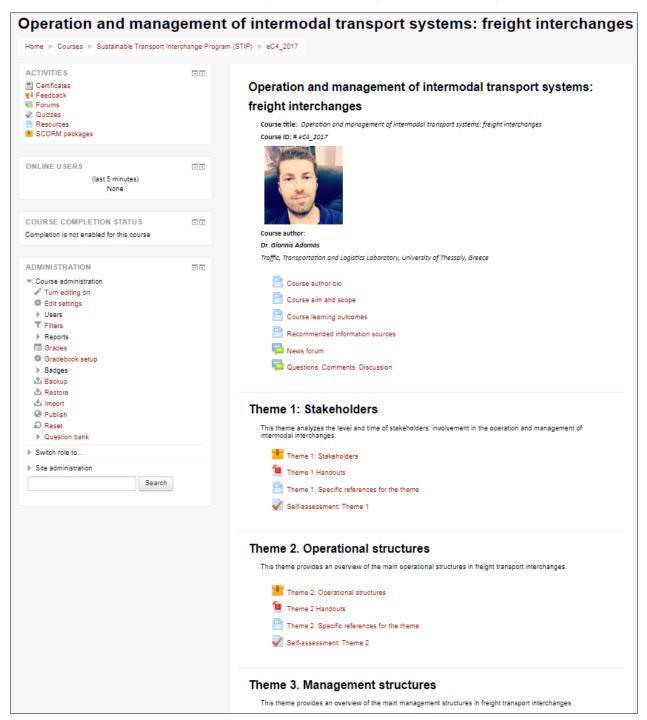
# 5.1 Annex A: Screenshot of the course "The European policy on intermodal transportation"

lome ▶ Courses ▶ Sustainable Transport Interchange Program (STIP) ▶ eC1				
CTIVITIES Certificates Feedback Forums Quizzes Resources SCORM packages	- 3	The European policy on intermodal transportation         Course title: The European policy on Intermodal transportation         Course ID: # eCI		
ONLINE U SERS (last 5 minutes) None	- 6			
COURSE COMPLETION STATUS Completion is not enabled for this course	- 4	Course author: Dr. Giannis Adamos Troffic, Transportation and Logistics Laboratory, University of Thessaly, Greece		
ADMINISTRATION Course administration Course administration Turn editing on Edit settings Users T Filters Reports Grades Gradebook setup Cradebook setup		<ul> <li>Course author bio</li> <li>Course aim and scope</li> <li>Course learning outcomes</li> <li>Recommended information sources</li> <li>News forum</li> <li>Questions, Comments, Discussion</li> </ul>		
Badges     Backup     Backup     Restore     Import     Publish     Reset     Question bank      Switch role to		Theme 1: Background This theme introduces some basic principles of the European policy and indicative statistical data. Theme 1: Background Theme 1 Handouts		
Site administration     Search		Theme 1. Specific references for the theme Self-assessment: Theme 1		
		Theme 2. Trends in intermodality         This theme will help students to understand some basic terminology and it will introduce current and future trends in passenger and freight transportation.         Image: Theme 2: Trends in intermodality         Theme 2 Handouts         Theme 2. Specific references for the theme         Self-assessment: Theme 2		
		Theme 3. EU legal and institutional framework		
		This theme explains how transport has become one of the main concerns of the European policy.		

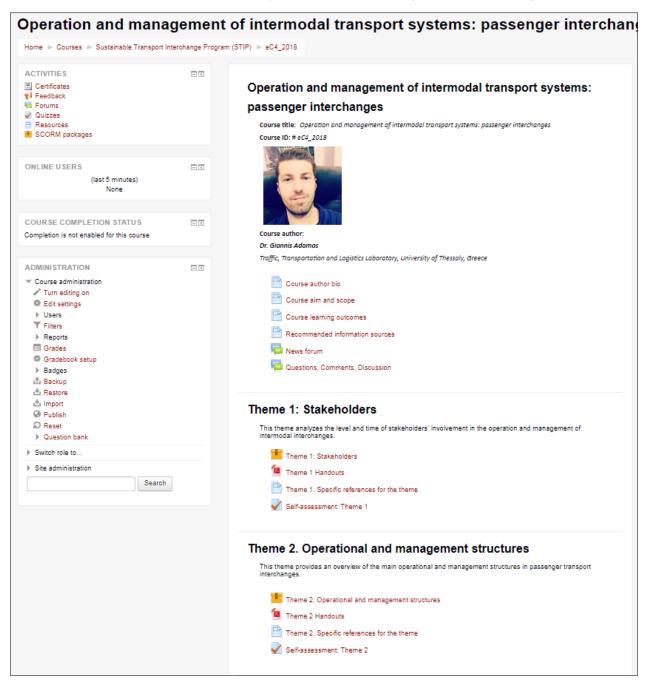
## 5.2 Annex B: Screenshot of the course "Building business models for intermodal transport interchanges"

ome 🕨 Courses 🕨 Sustainable Transport Ir	terchange Progra	im (STIP) ► #eC2
CTIVITIES Certificates Feedback Forums Quizzes Resources SCORM packages		Building business models for intermodal transport interchanges Course title: Building business models for intermodal transport interchanges Course ID: # eC2
NLINE USERS (last 5 minutes) None	- 4	Course author:
OURSE COMPLETION STATUS ompletion is not enabled for this course	- 4	DrIng. Henning Strubelt Otto von Guericke University Magdeburg (OvGU) Faculty of Mechanical Engineering Institute of Logistics and Material Handling Systems (ILM)
DMINISTRATION Course administration Course administration Course adding on Course adding on Course Users Users Visers Fitters Reports Grades Grades Gradesok setup Badges		<ul> <li>Course author bio</li> <li>Course aim and scope</li> <li>Course learning outcomes</li> <li>Recommended information sources</li> <li>News forum</li> <li>Questions, Comments, Discussion</li> </ul>
th Backup the Restore the Import the Publish € Reset ▶ Question bank		Theme 1: Business Models Introducing business models. Theme 1: Business Models Theme 1: Business Models Theme 1: Handouts
Switch role to Site administration Search	]	Theme 1. Specific references for the theme Self-assessment: Theme 1
		Theme 2. Intermodal Transport Acquire basic knowledge of intermodal transport.
		<ul> <li>Theme 2: Intermodal Transport</li> <li>Theme 2 Handouts</li> <li>Theme 2. Specific references for the theme</li> <li>Self-assessment: Theme 2</li> </ul>
		Theme 3. Interchange Zones
		Acquire basic knowledge of intermodal transport interchange zones.

## 5.3 Annex C: Screenshot of the course "Operation and management of intermodal transport systems: freight interchanges"



## 5.4 Annex D: Screenshot of the course "Operation and management of intermodal transport systems: passenger interchanges"



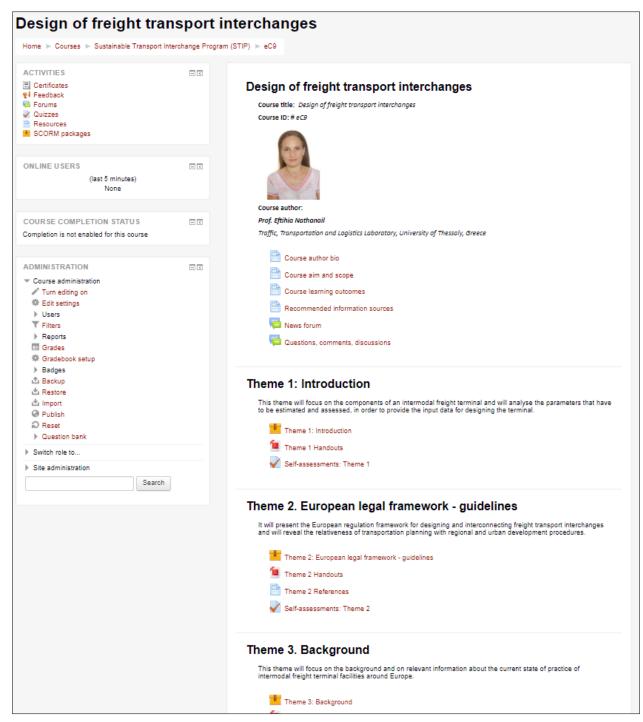
## 5.5 Annex E: Screenshot of the course "Intelligent services for passenger transportation

ome ► Courses ► Sustainable Transport Interchange Program (STIP) ► eC8				
CTIVITIES Certificates Feedback Forums Quizzes Resources SCORM packages		Intelligent services for passenger transportation Course title: Intelligent services for passenger transportation Course ID: # eC6		
NLINE USERS (last 5 minutes) None	- 4	Course author:		
OURSE COMPLETION STATUS ompletion is not enabled for this course	- 6	DrIng. Henning Strubelt Otto von Guericke University Magdeburg (OvGU) Faculty of Mechanical Engineering Institute of Logistics and Material Handling Systems (ILM)		
DMINISTRATION Course administration Turn editing on Course administration Users Users Filters Reports Grades Course Cours		<ul> <li>Course author bio</li> <li>Course aim and scope</li> <li>Course learning outcomes</li> <li>Recommended information sources</li> <li>News forum</li> <li>Questions, Comments, Discussion</li> </ul>		
Badges Backup Restore Publish Reset Reset		Theme 1: Transport Modes		
Question bank     Switch role to     Site administration     Search	]	<ul> <li>Theme 1 Handouts</li> <li>Theme 1. Specific references for the theme</li> <li>Self-assessment: Theme 1</li> </ul>		
		Theme 2. Information Technology         Get an overview of information technologies for the passenger transport market.         Image: Theme 2: Information Technology         Theme 2: Information Technology         Theme 2 Handouts         Theme 2. Specific references for the theme         Self-assessment: Theme 2		
		Theme 3. IT Application Fields		
		This theme will focus on the places of transshipment with their interacting devices.		

# 5.6 Annex F: Screenshot of the course "Design of passenger transport interchanges

ne 🕨 Courses 🕨 Sustainable Transport In	terchange Program	n (STIP) ⊨ eC8
CTIVITIES Certificates Feedback Forums Quizzes Resources SCORM packages		<b>Design of passenger transport interchanges</b> Course title: <i>Design of passenger transport interchanges</i> Course ID: # eCB
(last 5 minutes) None		Course author:
OURSE COMPLETION STATUS ompletion is not enabled for this course	- 4	Dr. Giannis Adamos Dr. Giannis Adamos Traffic, Transportation and Logistics Laboratory, University of Thessaly, Greece
ADMINISTRATION  Course		Course author bio Course aim and scope Course learning outcomes Recommended information sources News forum Questions, Comments, Discussion Theme 1: Components of passenger transport interchanges
Import     Publish     Reset		This theme introduces the components of passenger transport interchanges.
Question bank     Switch role to     Site administration     Search		<ul> <li>Theme 1 Handouts</li> <li>Theme 1. Specific references for the theme</li> <li>Self-assessment: Theme 1</li> </ul>
		Theme 2. Guidance and recommendations This theme provides to students some guidelines and recommendations of the efficient design of passenger
		transport interchanges.  Theme 2: Design typologies and requirements  Theme 2 Handouts  Theme 2. Specific references for the theme  Self-assessment: Theme 2
		Theme 3. Design typologies and requirements
		This theme introduces a methodology for an interchange typology and the respective design requirements.

## 5.7 Annex G: Screenshot of the course "Design of freight transport interchanges"



# 5.8 Annex H: Screenshot of the course "Smart equipment for freight transshipment"

CVINTES   Consections	Home ► Courses ► Sustainable Transport Interchange Program (STIP) ► eC10				
(ist 5 minutes)   OURSE COMPLETION STATUS   melation is not analysis of this course   melation is not analysis of this course   NUMSTRATION   Course administration   Y the definition of this course   Y the definition of this course <t< th=""><th>Certificates Feedback Forums Quizzes Resources</th><th>- 2</th><th>Course title: Smart equipment for freight transshipment</th></t<>	Certificates Feedback Forums Quizzes Resources	- 2	Course title: Smart equipment for freight transshipment		
OURSE COMPLETION STUDS       Image: Completion is not enabled for this course         DININSTRATION       Image: Course administration         Course administration       Image: Course administration surves         Priters       Proports         Course administration       Image: Course administration surves         Priters       Proports         Course administration       Image: Course administration surves         Priters       Proports         Course administration       Image: Course administration surves         Proports       Proports         Course administration       Image: Course administration surves         Proports       Proports         Course administration       Image: Course administration surves         Proports       Proports         Strates       Course administration surves         Proports       Course administration surves <td>(last 5 minutes)</td> <td></td> <td>Course author:</td>	(last 5 minutes)		Course author:		
Institute of Logistics and Material Handling Systems (LLM) Course administration Course			Yves Cohen Otto von Guericke University Magdeburg (OvGU)		
▲ Restore         ▲ Restore         ▲ Publish         > Rest         > Question bank         Switch role to         Site administration         ■ Search         Cheme 1: Challenges of transshipment         > Question bank         Switch role to         Site administration         ■ Search         Cheme 1: Challenges of transshipment         ■ Theme 2: Transshipment technologies         ■ Theme 2: Transshipment technologies         ■ Theme 2: Handouts         ■ Additional information section (optional): Theme 2         ■ Self-assessments: Theme 2         ■ Self-assessments: Theme 2         ■ Self-assessments: Theme 2         ■ Self-assessments: Theme 2	Course administration Turn editing on Edit settings Users Filters Reports Grades Gradebook setup Badges		Course author bio Course aim and scope Course learning outcomes Recommended information sources		
Switch role to         Ste administration         Search         Image: Search	☆ Import @ Publish ② Reset		Introducing in the transshipment topic with theoretical basics.		
Transshipment technologies is about the theoretical basics and well-known examples from the industry.  Theme 2: Transshipment technologies  Theme 2 Handouts  Additional information section (optional): Theme 2  Self-assessments: Theme 2  Theme 3. Places of transshipment	Site administration	]	Theme 1 Handouts		
			Transshipment technologies is about the theoretical basics and well-known examples from the industry.  Theme 2: Transshipment technologies  Theme 2 Handouts  Additional information section (optional): Theme 2		
This theme will focus on the places of transshipment with their interacting devices.			Theme 3. Places of transshipment		
			This theme will focus on the places of transshipment with their interacting devices.		

# 5.9 Annex I: Screenshot of the course "Decision making methodologies"

łome ► Sustainable Transport Interchange	e Program (STIP) 🕨 e	C11	
CCTIVITIES Certificates Feedback Forums Quizzes Resources SCORM packages		Your prop Decision making methodologies Course ID: # eC11	gress
DNLINE USERS (last 5 minutes) Mihails Savrasovs	- 4	Course author:	
COURSE COMPLETION STATUS	- <	Prof. Eftihia Nathanail	
Status: Not yet started		Traffic, Transportation and Logistics Laboratory, University of Thessaly, Greece	
All criteria below are required:		Course author bio	
Required criteria	Status	Course aim and scope	
Activity completion	0 of 1	Course learning outcomes	
More details View course report		News forum	
view course report		Guestions. Comments. Discussion	
ADMINISTRATION			
<ul> <li>Course administration</li> <li>Turn editing on</li> <li>Edit settings</li> </ul>		Theme 1: Background This theme will provide a smooth introduction to the relevant terminology and basic information about the need	for
<ul> <li>Course completion</li> <li>Users</li> </ul>		evaluating a system and decision making methodologies.	
Lunenrol me from eC11		Theme 1: Background	0
▼ Filters ▶ Reports		Theme 1 Handouts	
Grades		Theme 1 References	
<ul> <li>Gradebook setup</li> <li>Badges</li> </ul>		Self-assessments 1	
🗅 Backup			
📩 Restore		Thoma 2 Deposit cost and posial cost honefit analysis	
Publish		Theme 2. Benefit cost and social cost benefit analysis	
<ul> <li>Reset</li> <li>Question bank</li> </ul>		This theme will help students to understand the basic decision making methodologies by exploring different characteristics and features of each one.	
Switch role to			
<ul> <li>Site administration</li> </ul>		Theme 2. Benefit cost and social cost benefit analysis	
Searc	h	Theme 2 Handouts	
		Theme 2 References	
		Self-assessments 2	
		Thoma 2. Multi atakahaldar multi aritaria analusia	
		Theme 3. Multi-stakeholder multi-criteria analysis	
		This theme will help the student to understand the problem building given alternatives and different stakeholder	5.

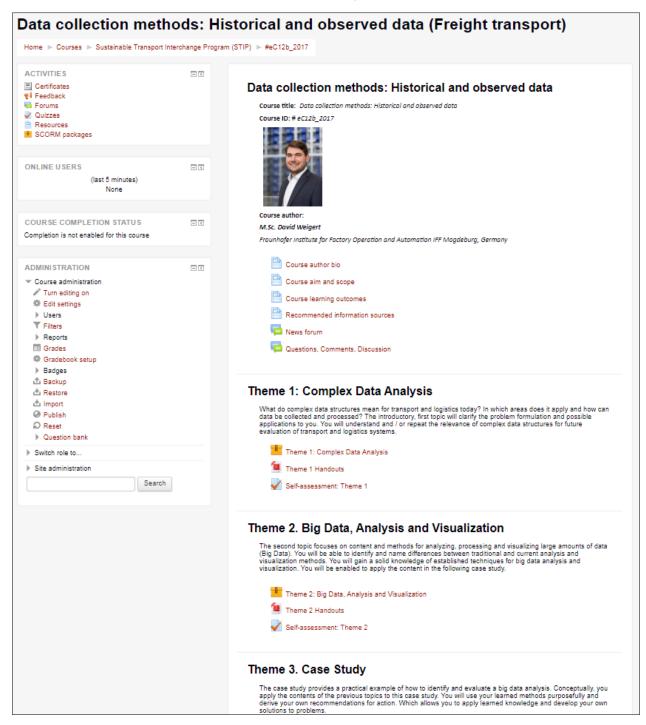
### 5.10Annex J: Screenshot of the course "Data collection methods: Freight Transportation Surveys"

lome ▶ Courses ▶ Sustainable Transport In		eight Transportation Surveys m(STIP) ⊨ eC12a_2017
CTIVITIES Certificates Feedback Forums Quizzes Resources SCORM packages		Data collection methods: Freight Transportation Surveys Course title: Data collection methods: Freight Transportation Surveys Course ID: # eC12a_2017
NLINE U SERS (last 5 minutes) None	- 6	Course author:
OURSE COMPLETION STATUS ompletion is not enabled for this course	- 6	Prof. Eftihia Nathanail Traffic, Transportation and Lagistics Laboratory, University of Thessaly, Greece
DMINISTRATION Course administration Turn editing on Edit settings Users Tilters Reports Grades Grades Gradebook setup		<ul> <li>Course author bio</li> <li>Course aim and scope</li> <li>Course learning outcomes</li> <li>Recommended information sources</li> <li>News forum</li> <li>Questions, Comments, Discussion</li> </ul>
<ul> <li>▶ Badges</li> <li>✿ Backup</li> <li>✿ Restore</li> <li>✿ Publish</li> <li>&gt; Reset</li> <li>&gt; Question bank</li> </ul>		Theme 1: Introduction This theme will provide a smooth introduction and understanding of qualitative research and the differences between qualitative and quantitative research. Theme 1: Introduction
Switch role to Site administration	]	<ul> <li>Theme 1 Handouts</li> <li>Specific references for the Theme 1</li> <li>Self-assessments 1</li> </ul>
		Theme 2. Sampling & Statistical analysis         This theme will focus on the understanding of the role of sampling in data collection.         Theme 2: Sampling & Statistical analysis         Theme 2 Handouts         Specific references for the Theme 2         Self-assessments 2
		Theme 3. Data collection methods This theme will provide the students with an understanding of qualitative methods in data collection along with the

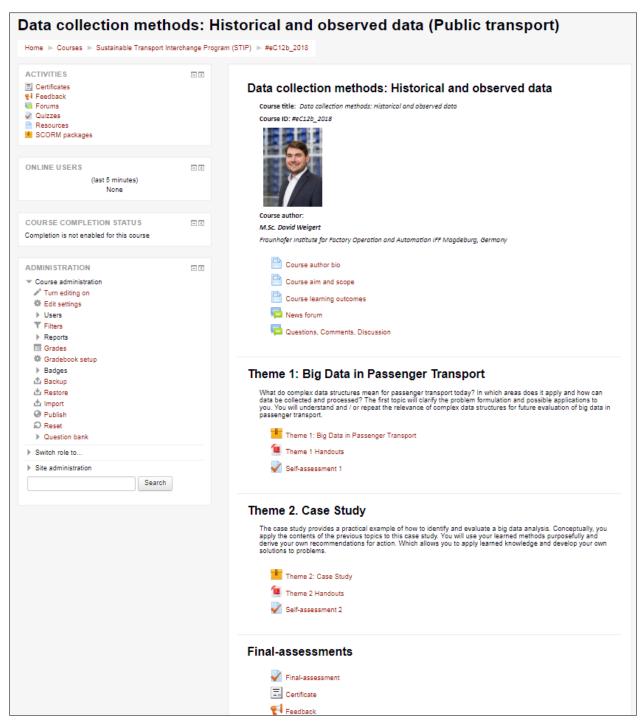
### 5.11 Annex K: Screenshot of the course "Data collection methods: Travel Surveys"

(jest 3 minutes)   None     OURSE COMPLETION STATUS   Image: Completion is not enabled for this course   OMINISTRATION   Image: Completion is not enabled for this course   Image: Completion is not enable	ome 🕨 Courses 🕨 Sustainable Transport In	terchange Program (	STIP) ▶ eC12a_2018
(gat 3 minutas)   OURSE COMPLETION STATUS   projection is not enabled for this course   Immunity is not enabled for this not enabled for this not enable for this not to the this not	) Certificates I Feedback I Forums   Quizzes Resources		Course title: Data collection methods: Travel Surveys
COURSE COMPLETION STATUS   Course administration   Course administr		- 4	
NDMINISTRATION     Course administration   Course administ	COURSE COMPLETION STATUS Completion is not enabled for this course	- <	Prof. Eftihia Nathanail
<ul> <li>Backup</li> <li>Backup</li></ul>	<ul> <li>Edit settings</li> <li>Users</li> <li>Filters</li> <li>Reports</li> <li>Grades</li> </ul>	- 1	Course aim and scope Course learning outcomes Recommended information sources
<ul> <li>Switch role to</li> <li>Site administration</li> <li>Search</li> <li>Theme 1 Handouts</li> <li>Specific references for the Theme 1</li> <li>Self-assessments 1</li> </ul> This theme will help the students to understand how to set up a travel survey from A to Z and analyze survey results in order to draw useful conclusions. <ul> <li>Theme 2: Setting up a travel survey</li> <li>Theme 2: Setting up a travel survey</li> <li>Theme 2: Setting up a travel survey</li> <li>Self-assessments 2</li> </ul>	<ul> <li>▲ Backup</li> <li>▲ Restore</li> <li>▲ Import</li> <li>④ Publish</li> <li>Q Reset</li> </ul>		This theme will provide a smooth introduction and understanding of qualitative research and the differences between qualitative and quantitative research.
This theme will help the students to understand how to set up a travel survey from A to Z and analyze survey results in order to draw useful conclusions.  Theme 2: Setting up a travel survey  Theme 2 Handouts  Self-assessments 2  Theme 3. Sampling & Statistical analysis	Switch role to  Site administration		Specific references for the Theme 1
			This theme will help the students to understand how to set up a travel survey from A to Z and analyze survey's results in order to draw useful conclusions.  Theme 2: Setting up a travel survey Theme 2 Handouts
This theme will focus on the understanding of the role of sampling in data collection.			Theme 3. Sampling & Statistical analysis
			This theme will focus on the understanding of the role of sampling in data collection.

### 5.12 Annex L: Screenshot of the course "Data collection methods: Historical and observed data (Freight transport)"



### 5.13 Annex M: Screenshot of the course "Data collection methods: Historical and observed data (Public transport)"



# 5.14Annex N: Screenshot of the course "Research methodology and teamwork setup"

fome I⊫ Courses I⊫ Sustainable Transport Interchange Program (STIP) I⊫ c0				
CTIVITIES Certificates Feedback Forums Quizzes Resources SCORM packages		Research methodology and teamwork setup Course title: Research methodology and teamwork setup Course ID: # eCO		
NLINE U SER S (last 5 minutes) None				
OURSE COMPLETION STATUS ompletion is not enabled for this course		Course author: Prof. Irina Yatskiv (Jackiva) Transport and Telecommunication Institute, Latvia		
DMINISTRATION Course administration Turn editing on Course administration Course Cours	. 3	<ul> <li>Course author bio</li> <li>Course aim and scope</li> <li>Course learning outcomes</li> <li>Recommended information sources</li> <li>Recommended information sources</li> <li>News forum</li> <li>Questions, Comments, Discussion</li> </ul>		
Import  Publish  Reset  Question bank		Theme 1: Research process: definition, phases, methods This theme will provide a smooth introduction to the research process, clarify definitions and puts attention to phases and methods of the research.		
Switch role to Site administration Search	]	Theme 1: Research process: definition, phases, methods  Theme 1 Handouts  Theme 1 Handouts  Self-assessment: Theme 1		
		Theme 2. Scientific document types This theme will help students to understand the scientific documents types, their purpose and also clarify generic structure for each type of the document		
		<ul> <li>Theme 2: Scientific document types</li> <li>Theme 2 Handouts</li> <li>Theme 2 References</li> <li>Self-assessment: Theme 2</li> </ul>		
		Theme 3. Guidelines for good research work		

## 5.15 Annex O: Template of e-Course metadata file

#### e-Metadata

Course title:	{text - Building business models for intermodal transport interchanges}
Course id:	{text #eC2}
Course author photo:	{any graphical format}
Course author	{text - DrIng. Henning Strubelt}
academic title, name,	
surname	
Course author	{text- Otto-von-Guericke-University Magdeburg, Germany}
affiliation:	
Course author CV:	{short text up to 200 words - with information to educational background,
	current working place and position, research field, other ALLIANCE course
	responsibilities}
Course thematic area	{text – Governance, Smart Solutions, Decision Making}
Course classification	{text – Core, Passenger, Freight}
Course key words	{text – Logistics, business models, intermodal interchanges, modal split,
	transport modes}
Course aim and scope	{text - see example below}
Course learning	{bulleted text}
outcomes:	
Recommended	{text in Harvard style}
information sources	
Course duration	{Minutes – 45 to 60 min maximum}
Number of themes	{number}

#### e-Metadata theme n and selfassessments n

(copy paste the table below according to the number of themes you have created for your course)

Theme 1 title	{text}
Theme learning	{short text up to 100 words}
outcomes	
Theme presentation	{as ppt or pptx file in directory – belonging to presentation, e.g. title}
Theme iSpring data	{as files in directory belonging to presentation, e.g. title }
Theme assessment	{text – Location planning}
title	
Theme duration	{Minutes}
Additional information	- files (should be
section (optional):	-links
	-youtube video
	-other
-files	{file name}

	{file title (as it will be presented to user}}
-links	{link}
	{link title (as it will be presented to user}}
-youtube	{link}
videos	{link title (as it will be presented to user}}
Specific	{list using Harvard style}
references for	
the theme	

Theme 2 title	{text}
Theme learning	{short text up to 100 words}
outcomes	
Theme presentation	{as ppt or pptx file in directory – belonging to presentation, e.g. title}
Theme iSpring data	{as files in directory}
Theme assessment	{text – Location planning}
title	
Theme duration	{Minutes}
Additional information	- files (should be
section (optional):	-links
	-youtube video
	-other
-files	{file name}
	{file title (as it will be presented to user}}
-links	{link}
	{link title (as it will be presented to user}}
-youtube	{link}
videos	{link title (as it will be presented to user}}
Specific	{list using Harvard style}
references for	
the theme	