

## FACULTY OF ENGINEERING STUDY COURSE DESCRIPTION

<b>Course Title:</b>	<b>The integration principles of database systems (basics)</b>				
<b>Course code (LAIS):</b>					
<b>Study programme:</b>	<b>Information Technology</b>				
<b>Level of Study programme:</b>	<input type="checkbox"/>	1st level professional higher education			
	<input checked="" type="checkbox"/>	Professional Bachelor			
	<input type="checkbox"/>	Professional Master			
	<input type="checkbox"/>	Academic Master			
	<input type="checkbox"/>	PhD level			
<b>Type of Study programme:</b>	<input type="checkbox"/>	Compulsory course (Part A)			
	<input checked="" type="checkbox"/>	Professional specialization courses (Part B, compulsory)			
	<input type="checkbox"/>	Professional specialization optional courses (Part B, optional)			
	<input type="checkbox"/>	Elective courses (Part C)			
<b>Course Workload:</b>	<b>Credits</b>	<b>ECTS</b>	<b>Academic hours</b>	<b>Contact hours</b>	<b>Independent work hours</b>
<b>Full time studies</b>	2	3	80	32	48
<b>Part time studies</b>	2	3	80	10	70
<b>Course Author/ Tutor:</b>	<b>Andris Lapans</b>				
	Visiting research assistant, Mg.				
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	Consultation: according to the schedule for each semester				
<b>Study Form:</b>	Full time studies/ Part time studies				
<b>Study year, semester:</b>	3 <sup>rd</sup> year, 6 <sup>th</sup> semester				
<b>Language:</b>	Latvian, English				
<b>Prerequisites for the Course:</b>	Database technologies				
<b>Course Summary:</b>	<p>The aim of the study course is to introduce students with the diversity of database systems and applicability of them. The most popular database management systems, data extraction, transformation and loading will be covered. Improvement of practical skills will be realized using Oracle software and tools. During lectures and practical classes, the students will be provided with information about the course topic materials and work environment. The main instructions for arranging the work environment will be given. The course work is coordinated and started, which is individual for everyone. The task of students is to master the course materials, to implement the course work in their own environment and create the final product during independent working hours.</p>				
<b>Assessment:</b>	Exam				
<b>Requirements for Credits:</b>	<p>Attendance of lectures and practical work.                  Successful implementation of independent coursework.                  The final mark in the study course consists of:                  - Evaluation of course work (60%);                  - Exam mark (40%)</p>				
<b>Abiding by the Academic Ethics</b>	<p>Students must abide by the academic and research ethics, Vidzeme University of Applied Sciences Ethics Regulations, incl.:</p> <ul style="list-style-type: none"> <li>– study papers must be independently developed;</li> <li>– the study work should reference all statements, ideas and data used that have been authored by someone else;</li> <li>– appropriate data acquisition methods should be used in the acquisition of data, the research ethics must be respected, empirical data must be collected independently and cannot be distorted or falsified;</li> <li>– the examination must be carried out by the student independently, without the use of supporting materials and/or consultations with other students, unless the lecturer states otherwise.</li> </ul> <p>In the event of non-compliance with the academic and research ethics, punishment is imposed in accordance with the ViA Ethics Regulations and the study course must be re-taken, unless the punishment is extramarital.</p>				
<b>Learning Outcomes; the</b>	<b>Learning Outcomes</b>			<b>The evaluation methods and criteria</b>	

<b>evaluation methods and criteria</b>	<b>Knowledge</b>	Data diversity, openness of database systems, storage, maintenance and publication of information. Data exchange capabilities between different systems, transformations.	Lectures, practical work, independent work, exam.
	<b>Skills</b>		
	Search and use of literature and other teaching resources		Formative assesment. Time spent on the task, learning speed
	Mastering the full system implementation cycle, starting with the arrangement of the work environment and ending with a workable system.		Practical classes and independent work
	Requirements and systems analysis		Individual, unsupervised work
	<b>Competency</b>		
	Ability to navigate in a very large field of available information, ability to find what is needed		Efficiency of the work results
	IT competence		Independency and sustainability
	Professional and academic abilities		
<b>Course Compulsory literature:</b>	<ol style="list-style-type: none"> <li>1. Andrew J. Opper. Databases: A Beginner's Guide. 2009. 497 lpp.</li> <li>2. Ralph Kimball, Joe Caserta. The Data Warehouse ETL Toolkit. 2004. 526 lpp.</li> <li>3. Andy Opper, Robert Sheldon. SQL: A Beginner's Guide. 2009. 553 lpp.</li> <li>4.</li> </ol>		
<b>Course additional literature:</b>	<ol style="list-style-type: none"> <li>1. Talend Open Studio for Data Integration. Getting Started Guide. 2016. 46 lpp.</li> </ol>		
<b>Course confirmation date:</b>	03.03.2020.		
<b>Date of course description update:</b>			

### Study Course Plan:

Date	Theme	Academic hours		Study Form/ Organization of independent work of students and task description
		Contact hours	Independent work hours	
<i>The date is specified before the implementation of the course</i>				
	Repetition of the course "Database Technologies", analysis of the existing knowledge about databases	2	4	Lecture, practical work, independent work
	Identification of resources, installation of software and own work environment	3	4	The lecture gives instructions on what resources should be used, in the practical classes the arrangement of the work environment is started. Independently fully equips

				the work environment, performs functionality and performance tests
	Oracle DBMS and Application Express basics	5	10	Lecture, practical work. System use and administration. Working with data.
	SQL, PL / SQL and JavaScript	8	12	Data selection, input, modification, deletion and publication cycle. System prototype development.
	ETL basics, Talend Studio basics	6	10	Data integration tasks and tools.
	Presentation of the results of independent work	4	6	Summarizes all the results of independent work, develops a course presentation, each student presents his / her performance to everyone else.
	Exam	4	2	Review exam topics, theoretically present their knowledge of the "pulled out", practically demonstrate skills
<b>Hours total:</b>		<b>32</b>	<b>48</b>	

### Study Course Plan (part time):

Date	Theme	Academic hours		Study Form/ Organization of independent work of students and task description
		Contact hours	Independent work hours	
<i>The date is specified before the implementation of the course</i>				
	Repetition of the course “Database Technologies”, analysis of the existing knowledge about databases	1	6	Lecture, practical work, independent work
	Identification of resources, installation of software and own work environment	1	4	The lecture gives instructions on what resources should be used, in the practical classes the arrangement of the work environment is started. Independently fully equips the work environment, performs functionality and performance tests
	Oracle DBMS and Application Express basics	2	20	Lecture, practical work. System use and administration. Working with data.
	SQL, PL / SQL and JavaScript	1	20	Data selection, input,



				modification, deletion and publication cycle. System prototype development.
	ETL basics, Talend Studio basics	<b>1</b>	<b>10</b>	Data integration tasks and tools.
	Presentation of the results of independent work	<b>2</b>	<b>8</b>	Summarizes all the results of independent work, develops a course presentation, each student presents his / her performance to everyone else.
	Exam	<b>2</b>	<b>2</b>	Review exam topics, theoretically present their knowledge of the "pulled out", practically demonstrate skills
<b>Hours total:</b>		<b>10</b>	<b>70</b>	