RĪGAS TEHNISKĀ UNIVERSITĀTE

RTU Course "Digital Transformation"

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General data

Code	DE0638
Course title	Digital Transformation
Course status in the programme	Compulsory/Courses of Limited Choice
Responsible instructor	Jānis Grabis
Volume of the course: parts and credits points	1 part, 6.0 credits
Language of instruction	LV, EN
Annotation	Enterprise applications are used to execute enterprise business processes. The study course covers typical enterprise applications such as Enterprise Resource Planning (ERP) Systems, workflow management systems and service-oriented applications. It discusses their areas of application, technical architecture, modification and implementation at companies. In addition to these typical applications, enterprises continuously improve the business processes which includes the adoption of the latest technologies, also referred as digital transformation. These technologies are used to address some of the fundamental concerns in the area of enterprise applications. The study course investigates technologies for modification, adaptation, scaling and data-driven decision-making.
Goals and objectives of the course in terms of competences and skills	The aim of the study course is to teach the selection, use and adaptation of enterprise applications for the implementation and transformation of business processes. Tasks of the study course: - to acquaint students with current digitization trends; - to teach digitalization methodology; - to develop research skills and to evolve abilities of critical evaluation of technology deployment at enterprises and their further development.
Structure and tasks of independent studies	Students have two main independent works: 1. Laboratory works - students individually develop laboratory work on the most important topics covered in the study course, which includes data processing optimization, process integration and the use of service-oriented technologies. 2. Preparation of business process implementation and transformation research - students find the most suitable solution to the chosen business process transformation problem, perform the analysis of the solution compliance and develop the necessary modifications. During the lectures, the methods necessary for the implementation of independent work are considered. During the study course, students submit their intermediate assignments and defend the proposed solution at the end of the study course.
Recommended literature	Obligātā/Obligatory: Maheshwari, A (2019) Digital transformation: Building Intelligent Enterprises, Wiley. Andal-Ancion et al. (2003), The Digital Transformation of Traditional Businesses, MIT Sloan Management Review 44, 4, pp. 34-41. Bērziša, S., Bravos, G., Cardona Gonzalez, T., Czubayko, U., Espana, S., Grabis, J., Henkel, M., Jokste, L., Kampars, J., Koc, H., Kuhr, J., Llorca, C., Loucopoulos, P., Pascual, R., Pastor, O., Sandkuhl, K., Simic, H., Stirna, J., Valverde, F., Zdravkovic, J. Capability Driven Development: An Approach to Designing Digital Enterprises. Business & Information Systems Engineering, 2015, Vol.57, Iss.1, pp. 15-25 Urbach, N, Röglinger, M. (2019) Digitalization Cases, Springer. Grabis, J. Predicting Next Wave of Digitalization: Towards a Theory of Evolution of Enterprise Applications. No: BIR-WS 2019 [online]: BIR 2019 Workshops and Doctoral Consortium: Joint Proceedings of the BIR 2019 Workshops and Doctoral Consortium co-located with 18th International Conference on Perspectives in Business Informatics Research (BIR 2019), Polija, Katowice, 23.-25. septembris, 2019. Aachen: RWTH, 2019, 98.-106. Lpp. Grabis J. (2013) Using Process Variants in Design of Flow Management Systems. In: Kobyliński A., Sobczak A. (eds) Perspectives in Business Informatics Research. BIR 2013. Lecture Notes in Business Information Processing, vol 158. Springer. Papildu/Additional: Draheim, D. (2010) Business Process Technology: A Unified View on Business Processes, Workflows and Enterprise Applications, Springer. Ganesh, K., Mohapatra, S., Anbuudayasankar, S.P., Sivakumar, P. (2014), Enterprise Resource Planning: Fundamentals of Design and Implementation, Springer. Magal, S., Word, J. (2012), Integrated Business Processes with ERP Systems, Wiley Venkatraman, V. (2018). The Digital Matrix: New Rules for Business Transformation Through Technology, Lifetree Media Grabis, J. Transformation and Enactment of Data-Intensive Business Processes Using Advanced Architectural Styles. No: Architecting the Di
Course prerequisites	Database management systems, computer networks and basic knowledge of enterprise applications.

Course contents

Content	Full- and part-time intramural studies		Part time extramural studies	
	Contact Hours	Indep. work	Contact Hours	Indep. work

Introduction: enterprise applications and their role in business process automation, informatization and transformation.	4	4	0	0
Drivers and technologies of digital transformation.	2	4	0	0
Data-oriented enterprise applications and ERP systems.	4	6	0	0
Configuration, modification and implementation of ERP systems.	16	24	0	0
Process-oriented enterprise applications and workflow management systems.	8	12	0	0
Service-oriented applications and application integration solutions.	10	14	0	0
Transformation technologies for customization of enterprise applications.	4	4	0	0
Transformation technologies for scalability and reliability.	4	4	0	0
Transformation technologies for decision-making.	4	4	0	0
Digital transformation case studies.	4	12	0	0
Examination.	4	8	0	0
Total:	64	96	0	0

Learning outcomes and assessment

Learning outcomes	Assessment methods
Knows types of enterprise applications and transformation technologies.	Exam.
Is able to identify transformation opportunities and evaluate potential benefits.	Independent work (digitalization research paper).
Is able to choose suitable architectural solutions for the implementation of enterprise business processes with respect to functionality, customization, scalability and other factors.	Exam and independent work (digitalization research paper).
Is able to configure and modify components of enterprise applications including data model, reports and workflows.	Laboratory works.
Is able to manage, document and communicate the implementation of enterprise applications.	Independent work (digitalization research paper).

Evaluation criteria of study results

Criterion	%
Laboratory works	20
Independent work (digitalization research paper)	40
Exam	40
Total:	100

Study subject structure

Part	CP	Hours			Tests		
		Lectures	Practical	Lab.	Test	Exam	Work
1.	6.0	32.0	0.0	32.0		*	