COURSE UNIT (MODULE) DESCRIPTION

Course unit (module) title	Code
Smart Technology and Digitalization	6211X088

Academic staff	Core academic unit(s)
Coordinating: Yufei Wang **Other:**	Faculty of Economics and Business Administration, Vilnius University

Study cycle	Type of the course unit
First	Compulsory

Mode of delivery	Semester or period when it is delivered	Language of instruction
Classroom	Autumn semester	English

Requisites	
Prerequisites: Management	**Co-requisites (if relevant): N/A**

Number of ECTS credits allocated	Student's workload (total)	Contact hours	Individual work
5	130	32	98

Purpose of the course unit
The course unit shall be aimed at providing students with comprehensive education concerning smart technologies and digitalization in their effect on business processes. Students will be empowered with an understanding of how these key technologies—Artificial Intelligence, Internet of Things, Blockchain, Big Data, and Cloud Computing—are being deployed in productivity enhancement, smoothing of operations, and improvement of customer experience in industries. The course will also foster strategic thinking toward the integration of digital technologies within business models, with regard to ethical and societal implications.

Learning outcomes of the course unit	Teaching and learning methods	Assessment methods
The student will be empowered to apply smart technologies: AI for predictive analytics, IoT for real-time data collection, Blockchain for secure transactions, Big Data for strategic decisions, and Cloud Computing for scalable solutions in order to enhance efficiency and competitiveness in business operations.	Individual literature reading, problem-oriented instruction, and assignments	Exam questions with closed-ended answers, assignments, project report and presentation
The student will be able to critically evaluate business issues, apply advanced techniques of analysis, and provide creative digital solutions in a group as well as individually to the problems of managerial issues.	Individual literature reading and assignments	Assignments, the project report and its presentation

The student will be able to design inclusive strategies for digital transformation by integrating AI-driven customer engagement tools that can set their business model in line with digital innovations and adaptive process execution to optimize operations and drive growth.	Individual literature reading, problem-oriented instruction, and assignments	Exam questions with closed-ended answers, assignments, project report and presentation
The student will learn to assess the social and ethical consequences of the implementation of digital technologies like AI and IoT by taking into consideration privacy concerns, assessing jobs, and formulating guidelines for responsible use in corporate social responsibility.	Individual literature reading, problem-oriented instruction, and assignments	Exam questions with closed-ended answers, assignments, project report and presentation

Content	**Contact hours**							**Individual work: time and assignments**	
	Lectures	Tutorials	Seminars	Workshops	Laboratory work	Internship	**Contact hours, total**	**Individual work**	**Tasks for individual work**
1. Introduction to Smart Technology and Digitalization	3						**5**	**13**	Literature study: P 1-20; N 1-25. Individual assignment.
2. Developing and Implementing Digital Strategies	3						**5**	**13**	Literature study: P 181-197, 240-272. Individual assignment.
3. E-commerce, Online Commerce and the Internet of Things (IoT)	2						**3**	**10**	Literature study: P 20-39. Individual assignment.
4. Blockchain and Smart Contracts	2		1				**1**	**7**	Literature study: N 26-65. Planning and presenting the project.
5. Data Management and Analysis	2		1				**2**	**6**	Literature study: N 111-140, 141-155. Planning and presenting the project.
6. Integration of Digital Technologies	2		1				**4**	**6**	Literature study: P226-240; N 155-177. Planning and presenting the project.
7. Digital Transformation Strategies	2		1				**2**	**8**	Literature study: P59-80; N 207-233. Planning and presenting the project.
8. Emerging Technologies and Future Trends	2		1				**2**	**7**	Literature study: P272-291. Planning and presenting the project.
9. Ethical and Societal Implications	2		1				**2**	**7**	Literature study: N 265-291. Planning and presenting the project.
10. Integration and Implementation	2						**3**	**7**	Literature study: P 146-165; N 233-265. Planning and presenting the project.

11. User Experience and Interaction Design	2						**3**	**4**	Literature study: P 197-226; N 111-141, 177-207. Planning and presenting the project.
12. Review and Assessment								**10**	
Total	**26**		**6**				**32**	**98**	

Assessment strategy	Weight %	Deadline	Assessment criteria
Project preparation and presentation	30	During the lecture of selected week for each group	Project evaluation standards (using a 10-point rating system): 1. The capacity to communicate coherently and with confidence as a team. 2. Show the understanding of the problem and use the techniques learned in class to solve it. 3. Show the capacity to back up observations with well-founded conclusions, derived from relevant research data. 4. To exhibit originality in the development and delivery of the presentation material. 5. To adhere to the schedule and ensure the delivery of a presentation that is both impactful and well-organized. 10 = Excellent, 9 = Very Good, 8 = Good, 7 = Highly Satisfactory, 6 = Satisfactory, 5 = Sufficient, 4, 3, 2, 1 = Unsatisfactory
Individual assignment	20	At the end of 1st, 2nd, and 3rd lectures	Individual assignment evaluation standards (using a 10-point rating system): 1. Evaluate the extent to which the individual demonstrates a thorough understanding of the subject matter and applies relevant concepts effectively. 2. Assess the individual's ability to analyze problems critically and propose solutions using logical reasoning and evidence-based approaches. 3. Score the individual's capacity to conduct thorough research and support their arguments with credible and pertinent data. 10 = Excellent, 9 = Very Good, 8 = Good, 7 = Highly Satisfactory, 6 = Satisfactory, 5 = Sufficient, 4, 3, 2, 1 = Unsatisfactory
Final exam	50	Exam session	10 = Excellent, 9 = Very Good, 8 = Good, 7 = Highly Satisfactory, 6 = Satisfactory, 5 = Sufficient, 4, 3, 2, 1 = Unsatisfactory

1. Passing Criteria: The final grade is the weighted average of the final exam, project preparation and presentation, and individual assignments.
2. To pass the course, students must:
- Score at least 50% on the final exam.
- Achieve a cumulative grade of 5.0 or higher.

3. Retake Policy:
If student passes the final exam but their cumulative grade is below 5.0, the student must retake the exam until the cumulative grade reaches 5.0 or higher.
External exams are not permitted.
4. Rounding: The final grade is rounded to the nearest whole number according to standard rounding rules: 0.5 or above is rounded up, and below 0.5 is rounded down.

Author (-s)	Publishing year	Title	Issue of a periodical or volume of a publication	Publishing house or web link
Required reading				
Pelin Yildirim Taser	2022	Emerging Trends in IoT and Integration With Data Science, Cloud Computing, and Big Data		IGI Global https://10.4018/978-1-7998-4186-9.ch001

Neeraj Kumar N. Gayathri Md. Arafatur Rahman	2020	Blockchain, Big Data and Machine Learning	1st edition	Taylor & Francis
Recommended reading				
Patrick Siarry M.A. Jabbar Rajanikanth Aluvalu Ajith Abraham Ana Madureira	2021	The Fusion of Internet of Things, Artificial Intelligence, and Cloud Computing in Health Care		Springer https://doi.org/10.1007/978-3-030-75220-0