DOCTORAL STUDIES SUBJECT SYLLABUS

Subject title	Research domain (branch), code	Faculty	Department
Business intelligence technologies	Management 03 S	Economics and business administration	Economic informatics

Subject credits	Total study load in hours	Hours of contact studies	Hours of independent work
7	**196**	**16**	**180**

Subject goal, tasks, annotation, grading structure

Subject goal, tasks, annotation

Goal – to deliver to the audience advanced knowledge on business intelligence technologies, their nature, specifics, potential and positioning in the activities of contemporary society.

Tasks: to define the information needs of contemporary business and other managed activities; to analyze business intelligence approaches, methods, tools, value sources, placement in an organization and modes of operation.

The course is intended for doctoral students intending to gain knowledge about today's business intelligence technologies and their sources of value, to examine their nature and operating principles, and examine their use and applications. The course presents a range of common and widely known intelligence technologies: online analytical processing (OLAP), data warehousing and data mining technologies, neural networks, big data analytics, together with practical aspects of their applications.

Content (topics)

Business activity intelligence information needs, their main types and features. Business informing environment. Environment monitoring functions. Internal and external environment monitoring. Overview of intelligence technologies. Use of quantitative methods in business intelligence. Operations research and modeling in business intelligence. Technologies of data warehouses and data mining. ETL/ELT technology structure and operating principles. Online analytical processing (OLAP). The nature and features of Big Data phenomenon. The use of neural networks, artificial intelligence and machine learning in business intelligence. Web analytical technologies. Text analysis and text mining technologies. Information presentation technologies. Information visualization. Information quality problems. Context management and experience management.

Grading

An oral exam (70%) and an essay (30 %) on a chosen topic in the area of decision support and business intelligence, based on the latest and most prominent publications in the area and complemented with student's insights and conclusions regarding discussed topic. The volume of the essay is 25-30 double-spaced pages.

Important readingsn

1. Sharda R., Delen D., Turban E. (2017) *Business Intelligence, Analytics, and Data Science: A Managerial Perspective* (4th edition). Upper Saddle River, NJ: Prentice Hall.
2. Choo C. W. (2015) *The Inquiring Organization: How Organizations Acquire Knowledge & Seek Information*. Oxford University Press.
3. Verhoef P., Kooge E., Walk N. (2016) *Creating Value with Big Data Analytics*. Abingdon, UK: Routledge.
4. Michael J. A. Berry and Gordon S. Linoff. *Data Mining Techniques for Marketing, Sales and Customer Support*, 2nd Edition. Indianapolis, IN: Wiley International, 2004. 643 p. ISBN 0-

471-47064-3.

Additional readings

1. Morabito V. (2015) *Big Data and Analytics: Strategic and Organizational Impacts*. Springer International Publishing.

2. Sauter V. (2010) *Decision Support Systems for Business Intelligence*. Hoboken, NJ: John Wiley & Sons.

3. Davenport T., Siegel E. (2013) *Predictive Analytics: The Power to Predict Who Will Click, Buy, Lie, or Die*. Hoboken, NJ: John Wiley & Sons

3. Business Intelligence, Strategies and Ethics. (2015) Ed. by Kimberly Nelson. Hauppauge, NY: NOVA Publishers

4. Teminis portalas www.businessintelligence.com

5. Zaki M.J., Meira W. (2014) *Data Mining and Analysis. Fundamental Concepts and Algorithms*. New York, NY: Cambridge University Press.

6. Skyrius R. (2013) *Verslo informacija: poreikiai ir tenkinimo keliai*. Vilnius: Vilniaus universitetas. 272 p.

Consulting teachers	Title, degree
Rimvydas Skyrius	**Prof. PhD**

The most important publications in the domain (branch) over the last 5 years

1. Skyrius R. (2021) *Business Intelligence. A Comprehensive Approach to Information Needs, Technologies and Culture*. Cham, Switzerland: Springer.

2. Skyrius R., Valentukevičė J. (2020) Business intelligence agility, informing agility and organizational agility: research agenda. *Informacijos mokslai*, 90, 8-25.

3. Skyrius R., Lankutis J. (2020) Inclusion of Soft Skills in Management Information Systems Education. *EDULEARN 2020. 12th International Conference on Education and New Learning Technologies*. July 1st – 3rd, 2020 (online), 4414-4422.

4. Skyrius R., Nemitko S., Taločka G. (2018) The Emerging Role of Business Intelligence Culture. *Information Research*, 23(4), paper 806.

5. Skyrius R., Giriūnienė G., Katin I., Kazimianec M., Žilinskas R. (2018) The Potential of Big Data in Banking. In: *Guide to Big Data Applications*. Edited by S. Srinivasan. Cham, Switzerland: Springer. Pp. 451-486.

6. Skyrius R., Nemitko S. (2018) The Support of Human Factors for Encompassing Business Intelligence. *Proceedings of Informing Science & IT Education Conference (InSITE) 2018,* 21-34. Retrieved from http://proceedings.informingscience.org/InSITE2018/InSITE2018p021-034Skyrius4527.pdf

7. Skyrius R. (2016) *Business Information: Needs and Satisfaction*. Santa Rosa, CA: Informing Science Press.

8. The Key Dimensions of Business Intelligence. In: *Business Intelligence, Strategies and Ethics* (2015) Ed. by Kimberly Nelson. Nova Science Publishers, ISBN: 78-1-63482-064-6, p. 27-72. 2,4 sp.l.

9. Skyrius R., Nemitko S. (2015) Verslo analitika: informaciniai poreikiai. *Viešasis administravimas*. 2015, Nr.1-2 (45-46), 87-93.

10. Skyrius, R. (2015). The relations of maturity and dimensions of business intelligence. *Proceedings of Informing Science & IT Education Conference (InSITE) 2015,* 417-428. Retrieved from http://Proceedings.InformingScience.org/InSITE2015/InSITE15p417-428Skyrius1766.pdf

Konsultuojančiųjų dėstytojų vardas, pavardė	Pareigos, mokslo laipsnis
Michail Kazimianec	**Lekt. dr.**
Svarbiausieji darbai mokslo kryptyje (šakoje) paskelbti per pastaruosius 5 metus	

- Kazimianec M., Augsten N. Clustering with proximity graphs: exact and efficient algorithms. *International journal of knowledge-based organizations*. Hershey : IGI Global 2013, Vol. 3, no 4. p. 84-104. ISSN 2155-6393.

- Skyrius R., Giriūnienė G., Katin I., Kazimianec M., Žilinskas R. (2018) The Potential of Big Data in Banking. In: *Guide to Big Data Applications*. Edited by S. Srinivasan. Cham, Switzerland: Springer. Pp. 451-486.

On submission of doctoral study committee approved by the Faculty council on .... year, _____ month,__day, Protocol/minutes No. ....

Chairman of the council