Course programme

Course code INT7134.DT	**Research Methods and Theory of Science**		
ECTS credits: 15 ECTS	Amount of contact lessons: 120	Teaching semester: S1, S2	Assessment form: passed/failed
Course objectives:	This course aims: • to create opportunities for the development of knowledge and understanding of theories of science; • to enhance the development of competencies for understanding research process and research design; • to create preconditions for analysis of the epistemological foundations of library and information science; • to create opportunities for advance knowledge of selected quantitative and qualitative methods for collecting, handling and analysis of research data.		
Brief description of course content: (including the description of the independent work)	The Course contains the following units: 1. The idea of science. Scientific research process. The epistemological foundations of information science. 2. Research strategies and designs. Quantitative, qualitative and mixed methods. 3. Grounded theory. Analytical induction. 4. Data collection in quantitative and qualitative research: Questionnaire. Observation, Interviews. Document analysis. 5. Data analysis in quantitative research. Statistical analysis. Comparative analysis. 6. Data analysis in qualitative research. Content analysis. Discourse analysis. 7. Presentation, analysis and completing of research project. The Course contains individual assignments for each Module Unit or Topic. Students will get individual assignments (literature reviews, discussion topics, document analysis) within relevant topic/unit. The Course contains two major assignments: Assignment 1 – collaborative assignment: Presentation of implementation of research method and data analysis technique. Assignment 2 – individual assignment: Development of a research project.		
Learning outcomes:	On the completion of the course, a student: • has thorough knowledge on different scientific views on what constitutes knowledge, understands the role of science in society; • realizes the need of being active society member, understands the diversity of attitudes and values;		

	• has advanced knowledge on the epistemological foundations and research strategies of information science; • understands the relations of digital librarianship with other fields of information science in the broader context of social sciences; • is aware of the research process, has knowledge on different research designs and methods; • masters critical thinking is able to work independently, formulate research questions and find appropriate research strategy to solve them; • has advanced knowledge of selected quantitative and qualitative methods for collecting, handling and analysis of research data; • has knowledge and skills to analyse and evaluate the use of research methodology, quality of conducting research and its results; • is able to formulate and discuss profession specific problems in a written form.
Assessment Methods:	The final assessment consists of the following components: • A production of a collaborative group project – Assignment 1 (20%); • A production of an individual assignment – Assignment 2 (40%); • Weekly assignments – preparation of short reports based on readings (20%); • Contribution to the discussions and group works (20%).
Lecturer(s):	Prof. Sirje Virkus, lecturer Aira Lepik, Sigrid Mandre
Course title in Estonian:	Uurimismeetodid ja teadusteooria
Prerequisted course(s):	-
Compulsory literature:	**Bates, M. (**2005). An introduction to metatheories, theories, and models. In: Fisher, K. E., Erdelez, S., and McKechnie, L. (Eds.), Theories of Information Behavior, 1-24. Medford, NJ: Information Today. **Bawden, D., Robinson, L.** (2012). Philosophies and paradigms of information science. In: D. Bawden and L. Robinson, 37-61. Introduction to Information Science. London: Facet Publishing. **Creswell, J.** (2009). Research Design: Qualitative, Quantitative, and a Mixed Methods Approaches. 3rd ed. Thousand Oakes, CA: Sage. **Hansson, J.** (2005). Hermeneutics as a bridge between the modern and the postmodern in library and information science. Journal of Documentation, 61 (1), 102 – 113. **Hjørland, B.** (2000). Library and information science: practice, theory, and philosophical basis. Information Processing and Management, 36(3), 501-531. **Leckie, G., Given, L. M., Buschman, J.** (Eds.). (2010). Critical Theory for Library and Information Science: Exploring the Social

	from Across the Disciplines. Greenwood, CO: Libraries Unlimited. **Pickard, A. J.** (2013). Research methods in information. 2nd ed. London: Facet. **Åström, F.** (2010). The visibility of information science and library science research in bibliometric mapping of the LIS field. Library Quarterly, 80 (2), 143-159. **Wildemuth, B.** (2009). Applications of Social Research Methods to Questions in Information and Library Science. Westport, CT: Libraries Unlimited.
Replacement literature:	**Bates, M.J.** (2005). Information and knowledge: an evolutionary framework for information science. Information Research, 10(4) paper 239 [Available at http://InformationR.net/ir/10-4/paper239.html] (15.10.2014) **Bawden, D., Robinson, L.** (2012). Introduction to Information Science. London: Facet Publishing. **Bryman, A.** (2012). Social Research Methods. 4th ed. Oxford: Oxford University Press. **Connaway, L. S., Ronald R. P.** (2010). Basic Research Methods for Librarians. Santa Barbara, CA: Libraries Unlimited. **Gorman, G. E., Clayton, P.** (2005). Qualitative Research for the Information Professional: A Practical Handbook. 2nd ed. London: Facet Publishing. **Hjørland, B.** Core Concepts in Library and Information Science (LIS). http://www.iva.dk/bh/core%20concepts%20in%20lis/home.htm. **Hjørland, B., Nicolaisen, J.** The Epistemological Lifeboat. http://www.iva.dk/jni/lifeboat/ (15.10.2014). **Larsen, K. R., Allen, G., Vance, A., Eargle, D.** (Eds.) (2014). Theories Used in IS Research Wiki. Retrieved from http://istheory.byu.edu (15.10.2014) **Pickard, A. J.** (2013). Research methods in information. 2nd ed. London: Facet. **Sutton, B.** (2010). Qualitative research methods in library and information science. In: M. J. Bates and M. N. Maack (Eds.), Encyclopedia of Library and Information Sciences. 3rd ed., 4380-4393). Boca Raton, FL: CRC Press. **Talja, S., Tuominen, K., Savolainen, R.** (2005). "Isms" in information science: constructivism, collectivism and constructionism. Journal of Documentation, 61 (1), 79 – 101.
Participation and exam requirements:	The final assessment consists of the following components: • A production of a collaborative group project – Assignment 1 (20%); • A production of an individual assignment – Assignment 2 (40%); • Weekly assignments – preparation of short reports based on readings (20%); • Contribution to the discussions and group works (20%).

Independent work:	The Course contains individual assignments for each Module Unit or Topic. Students will get individual assignments (literature reviews, discussion topics, document analysis) within relevant topic/unit. The Course contains two major assignments: Assignment 1 – collaborative assignment: Presentation of implementation of research method and data analysis technique. Assignment 2 – individual assignment: Development of a research project.
Grading criteria scale or the minimum level necessary for passing the subject:	The evaluation criterias: A - an outstanding and excellent level of achievement of learning outcomes characterized by free and creative use of knowledge and skills beyond a very good level; B - a very good level of achievement of learning outcomes characterized by purposeful and creative use of knowledge and skills. Might make mistakes, which are not substantive and conceptual, with regard to specific and more detailed knowledge and skills; C - a good level of achievement of learning outcomes characterized by purposeful use of knowledge and skills. Uncertainty and inaccuracies may occur in regard to more specific and detailed knowledge; D - a sufficient level of achievement of learning outcomes. Deficiencies and uncertainties occur in on-standard situations; E - a minimally acceptable level of achievement of learning outcomes characterized by limited use of knowledge and skills in typical situations. Noticeable deficiencies and uncertainties occur in non-standard situations. The final grade consists of: **1st Major Assignment** - (20% of final grade): **Evaluation Criteria** Knowledge/understanding: In-depth understanding, insight and/or research, grasp of detail, relevant theory and literature. Evidence and integration of background independent study and other aspects of course (weight – 20%). Structure: Originality in the way in which the work has been approached and executed. Exemplary organisation and standard of presentation throughout (weight – 20%). Application: Consistently displays high levels of initiative, personal responsibility, decision-making and learning ability (weight – 20%). Evaluation: Evidence of exceptionally high quality, insightful and creative analysis and/or critical appraisal (weight – 20%). General: Clear, relevant and consistently accurate citation and referencing (weight -10%) Additional Criteria: Original, creative and sophisticated - evidence

	of intellectual rigour and independence of judgement. Striking insight and evaluation demonstrated. Evidence of intellectual rigour and independence of judgement. Outstanding in all areas and displaying originality (weight – 10%). **2nd Major Assignment.** The result of the individual project work and presentation of review on fellow-student project - (40% of final grade): **Evaluation Criteria** I. Proper Style and Format of project presentation (weight – 20%) The paper is produced in an academic tone Clarity of expression, eloquence and creativity of writing, mechanics of word choice Grammar and spelling II. Structure and Organization of the project (weight – 20%) Statement of the problem or question (thesis statement) – clarity, sharpness of focus Devoted reasonable & proportional attention to the key questions Logical development of the discussion from one idea to the next Proper use of paragraphs and headings Introduction – provides a context for the project, summarizes the arguments Conclusion – negotiates the perspectives in the project so that the reader is left with a clear impression of the main points captured in the project III. Proper Use and Relevance of Research (weight – 20%) Located appropriate academic literature The project relies on contemporary and insightful research Draws out meaningful arguments from the readings All contentions have appropriate literature to support them Enough sources are used in each paragraph or section to support the arguments Does not rely heavily on generic texts and/or quotations IV. Level of Analysis and Substantive Adequacy (weight – 30%) Displays strong insight and sound knowledge of the topic/issues Arguments are powerful and relevant to the thesis statement Explored the topic with adequate depth and reflective ability The project reflects careful analysis (theoretical/topic-related) Incorporated compelling examples and/or case studies Depth of the analysis, clarity of explanation Overall substantive adequacy and empirical insightfulness of the interpretation or argument presented V. Referencing/Bibliography (weight – 10%)

	In-text citations are correct and consistent References are structured correctly and consistently according to the chosen reference formats. **Weekly assignments** – preparation short reports based on readings - (20% of final grade). **Weekly discussions**, contribution to the discussion* - (20% of final grade). * The contribution to the discussions will be evaluated based on the following: • The quality and frequency of your contributions. • The ability of your comments to motivate and engage others in a collaborative effort.
Information about the course: (Topics by contact session, deadlines of independent works and exams/assessments times)	Course Schedule: **6.09.2016:** Introduction to the Research Methods and Theory of Science Course. Diagnostic Analysis. **7.09.2016:** The idea of science. Scientific research process. The epistemological foundations of information science. **13.09.2016:** Science and scientific research process. **14.09.2016:** Major research paradigms. **20.09.2016:** Ethics of research. **21.09.2016:** Criteria for judging research. Establishing trustworthiness in qualitative research. Establishing rigour in quantitative research. **27.09.2016:** Epistemological foundations of information science. The use of theory. **28.09.2016:** Research designs. Quantitative, qualitative and mixed method design. **4.10.2016:** Examples of various research designs. **5.10.2016:** Research strategies: Ethnography. Delphi study. **11.10.2016:** Research strategies: Historical research. Phenomenography. **12.10.2016:** Research strategies: Action Research. Case study. **18.10.2016:** Research strategies: Grounded theory. **19.10.2016:** Examples of various research strategies. **1.11.2016:** Data collection techniques. Questionnaires. **2.11.2016:** Data collection techniques. Interviews. Focus groups. **8.11.2016:** Data collection techniques. Observation. **9.11.2016:** Data collection techniques. Document analysis. **15.11.2016:** Data analysis in quantitative research. Statistical analysis. Comparative analysis. **16.11.2016:** Data analysis in qualitative research. Constant comparative analysis. **22.11.2016:** Data analysis in qualitative research. Discourse analysis. **23.11.2016:** Data analysis in qualitative research. Narrative analysis.

	29.11.2016: Data analysis in qualitative research. Software for qualitative analysis. **30.11.2016:** Completing of research project. Structure and style of writing. **6.12.2016:** Completing of research project. Academic Integrity. Plagiarism. **7.12.2016:** Completing of research project. Reference management. **13.12.2016:** Presentation of research project. Discussion. Feedback. **14.12.2016:** Presentation of research project. Discussion. Feedback.

Teaching Unit in charge:	School of Digital Technologies
Course programme is prepared by:	Sirje Virkus
Date:	29.08.2016

The course program is registered in the academic unit:

Date:	29.08.2016
Name of academic coordinator:	Viktoria Humal