Course programme

<table>
<tr><td>Course code

IFI8003.DT</td><td colspan="3">Course Title:
Research Methodology</td></tr>
<tr><td>ECTS credits:

6 ECTS</td><td>Amount of contact lessons: 24</td><td>Teaching semester:
Spring</td><td>Assessment form: Exam</td></tr>
<tr><td>Course objectives:</td><td colspan="3">This course uses the constructive teaching for supporting the development of the research skills particularly targeting for the doctoral students of the program Technologies for information society. The course introduces students to the issues, concepts, methods and techniques associated with Technologies in Information Society research. It covers ethical and professional issues, research strategies, and oral and written communication skills. Skills developed and knowledge acquired from this course will prepare students to conduct and to communicate their own research, as well as to be knowledgeable consumers of others research.
Goals:
To provide a deep and systematic understanding of the nature and conduct of Technologies for information society research
To equip students with the ability to undertake independent research
To enhance and develop higher-order transferable key skills
To remind students of the Legal, Social, Ethical and Professional issues applicable to the research in Technologies for information society.</td></tr>
<tr><td>Brief description of course content:

(including the description of the independent work)</td><td colspan="3">Method of study:
Minimum total expected workload equals 6 CET. The overview of research strategies is given in lectures (12 h) and the research strategy usage is deepened in the seminars (12 h) using the constructive approach for discussing the strategies in the practical context with the cases derived from research papers and students own research projects. As part of individual work (132 h) the students are expected to improve and present their research plan at seminar and mini-conference and writing an extended abstract of it, they are ought to study and contextualize the research strategy examples as part of the face-to-face seminars and online course activities. While presenting their research plans and research strategy cases in written and oral form in the seminars and mini-conference, the students can practice their scientific communication skills.</td></tr>
<tr><td>Learning outcomes:</td><td colspan="3">Have a conceptual understanding of established techniques of research and inquiry in Technologies for information society</td></tr>
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	sufficient to be able to deal with complex issues at the forefront of the academic discipline of Technologies for information society research in a self-directed manner, based on sound judgement, that is both systematic and creative: 1) proposing possible research strategies for his doctoral work to extend, create and interpret knowledge in Technologies for information society domain: 2) be able to define and plan a programme of independent research: 3) evaluate critically current research in Technologies for information society from the research methods point of view; 4) be able to communicate research plans clearly to both specialists and non-specialists.
Assessment Methods:	Exam
Lecturer(s):	Main lecturer Kai Pata (PhD), assistant lecturer James Quaicoe
Course title in Estonian:	Teadusmetodoloogia
Prerequisted course(s)::	
Compulsory literature:	Lecture materials and selected book chapters and research papers (available in the course folder)
Replacement literature:	Research Methods in Education Sixth edition Louis Cohen, Lawrence Manion and Keith Morrison 2007 QUALITATIVE INQUIRY&RESEARCH- DESIGN Choosing Among Five Approaches John W Creswell 2007
Participation and exam requirements:	Independent studies are defined in the Assignment section and must be completed by specified seminar times
Independent work:	Contact hours 24 academic hours run 6 times: 12 academic hours of lectures; 12 academic hours of seminars (b.) Additional requirements (all students): Independent studies are defined in the Assignment section (120 h)

Grading criteria scale or the minimum level necessary for passing the subject:	Assignments and Grading: The exam grade is given for three interlinked tasks assessed from the seminar activities and the final contributions: **Assignment I. Research plan communication** (40% of Grade) - Draft of research plan presented at seminar II (1 page matrix spreadsheet); - Final research plan presented at mini-conference at seminar VI (max 8 slides containing Problem, Research goals, Research Questions, Research Strategies for each Research Question, Expected outcomes (Paper headings), References) - Extended abstract (max 2 pages) of research plan (contains Problem, Research goals, Research Questions, elaborated Research Strategies for each Research Question in own research settings, Expected outcomes, References, in APA style), is presented for grading after seminar VI; *Assessment criteria; the consistency and alignment of research plan elements, the clarity and correctness of presentation in abstracts.* **Assignment II. Knowledge and competence of using research strategies in different contexts** (40 % of the Grade) - Analysis of three selected research papers from the research methods point of view, and presenting them in targeted seminars II-V, and as part of online construction resources (30 % of Grade); - Descriptions of contextualized cases from own research settings about using different research strategies, presenting them as part of online construction resources for seminars III-V *Assessment criteria: The research strategies from papers are presented clearly to peer students, the presenter acts as an expert in reasoning with scientific arguments and examples from the paper how this method could be transferred to suitable contextualized settings of peer students* **Assignment III: Scientific communication and co-construction in research** (20 % of the Grade) - Asking questions about research strategies presented by peers (written and oral formats), - Counseling peers in using the specific research strategies in their research settings context (written and oral formats), - Asking research-related questions during the mini-conference and assessing peers formatively for the scientific communication *Assessment criteria: The student has taken actively part in knowledge construction during seminar activities and contributed with questions and answers to the online construction resources (comments in google docs)*
Information about the course: (Topics by contact session, deadlines of independent works	Google.drive folder with email-based access To view the course outline: http://bit.ly/1NO7cI3 Topics: 25.02

and exams/assessments times)	1. Overview of the course and assignments. What kind of scientist I will be? Ethics and community practice of scientists. The structure of the national and international research communities. How to be part of the international science community. From where to find research papers? Research styles, research models (Experimental study (in computer science). Longitudinal study. Meta-analysis technique. Modeling (reference frameworks). Simulation.) Seminar: Planning the research. Ethics of social research. Creating the proposal: how to write the problem, goals, research questions, hypotheses and aligning them in the research plan matrix. 10.03 2. Qualitative, quantitative and mixed methods research - comparison of research philosophy and aspects. Research epistemologies. Validity and reliability in qualitative and quantitative studies. Triangulation. Types of data, and descriptive data analysis variables (mean, mode, standard deviation, skewness, kurtosis). Seminar: Presenting research plan matrixes. 24.03 Research strategy: Survey. Longitudinal study. Trend study. Data collection instruments (e.g. tests, questionnaires). Delphi method for forecasting. Research strategy: Network analysis. Systems analysis. Data collection from weblogs. 7.04 Research strategy: Naturalistic and ethnographic research. Historical and documentary research. Case studies. Action research. Data collection instruments (interviews, observations). Research strategy: Phenomenography. Narrative analysis. Grounded theory. Content analysis. 21.04. Research strategy: Design-based research. Design as a hypothesis. Participatory approaches. Cognitive modeling. Design space. Research strategy: Evaluation research. 5.05 6. Scientific writing and presenting process for papers and at conferences. APA style. Plagiarism and self-plagiarism. Presenting research results in the doctoral study. Mini-conference: presenting your research plans. Evaluating research plans in the conference format.

	Exam times: 15.05; 27.05

Teaching Unit in charge:	School of Digital Technologies
Course programme is prepared by:	Kai Pata
Signature:	
Date:	29.12.15

The course program is registered in the academic unit:

Date:	4.01.2016
Name of academic coordinator:	Ingrid Sander
Signature:	