STEM Education Research Courses – Planned Sessions 2018-2019

Educational Research Course – Thursdays 13:45-15:15 and 15:30-17:00

Session	Term 1
	Introduction to STEM education research
1	Introduction to the principles of education research
2	Introduction to literature review, referencing, bibliographical software options
3	Introduction to research questions and designs
4	The aims and purposes of STEM education in schools
5	Research on affective factors, believes, conceptions and motivation in STEM education
6	Research on teaching STEM subjects in schools
7	Research on improving assessment in schools
8	Preparing your own research design
Session	**Term 2**
	Introduction to data collection, analysis, and reporting in STEM education research
9	Classroom based research and designs and formulating specific research questions
10	Qualitative, quantitative, and mixed methods research
11	Data and sources: Interviews
12	Data sources: Observations
13	Data sources: Survey research
14	Qualitative data analyses
15	Quantitative data analyses
16	Arguing and structuring theses and papers

Educational Research Advanced Course – Fridays 9:00-17:00

	Advanced methods in STEM education research
1	Theory, Methodology and Design in STEM Education Research
2	Design-based research
3	Grounded Theory
4	Documentary Analysis
5	Digital resources for education research
6	Exploring Understanding Through Talk
7	Advanced survey designs
8	Quantitative analysis: advanced data preparation, missing values and estimates
9	Quantitative analysis: Inferential statistics
10	Quantitative analysis: significance testing and comparative analyses
11	Quantitative analysis: Regression analysis
12	Quantitative analysis: Factor Analyses
13	Quantitative analysis: Structural Equation Modelling
14	Qualitative analysis: advanced methods in coding interviews and observations
15	Mixed methods analysis
16	Writing publications in research journals