

Programme Guide 2018-2019

Master of Science (MSc) programme Educational Science and Technology

(Including pre-Master's programme)

Information for staff and current and prospective students

See also: <http://www.utwente.nl/est/>

As the information and data in this programme guide had to be published at an early stage, it is based on information then available and takes into account what is expected for the coming academic year. The programme guide has been compiled with utmost care, but the authors are not responsible for any omissions or inaccuracies. The formal rules as stipulated in the Education and Examination Regulations shall prevail. The reader can thus not derive any rights from the contents of this programme guide.

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Preface

Dear students,

You have chosen the Master's (MSc) degree programme Educational Science and Technology (EST) at the University of Twente's Faculty of Behavioural, Management and Social Sciences (BMS), probably because you are inquisitive about how people learn and how you can offer them support or research this. Welcome!

In the degree programme Educational Science and Technology, this intrinsic coherence is realised within the programme's specific focal area:

- *Educational Design and Effectiveness (EDE), and*
- *Human Resource Development (HRD).*

The contents of the various subjects within these domains are strongly linked to the research profiles of the lecturers.

This programme guide outlines the set-up and substance of the programme. The guide also informs on adjacent topics, such as student supervision, and methods and procedures for testing and quality assurance.

By national and international standards, the programmes offered by the Faculty of Behavioural, Management and Social Sciences (BMS) are of sound quality and developed in close collaboration with researchers from all over the world. It is our aspiration to offer courses that are not only intellectually challenging and which stimulate reflection on the domain, but that are also intrinsically relevant to the field of study, complete with a style of working and concurring literature that fit within the learning objectives of the course.

However, a good programme is more than just a collection of separate courses. It comprises subjects that are intrinsically coherent and that reinforce one another.

We constantly strive to offer you an interesting curriculum with sufficient challenges and depth. We hope that this programme rouses your curiosity and is gratifying.

I wish you a pleasant time here!

Kind regards,



Susan McKenney

Programme chair of the Master's degree programme Educational Science and Technology

Part A: Educational Science as a Discipline

1. Educational Science

1.1 What is educational science?

The main focus of educational science is on the learning and development of people in a diversity of contexts. This might be the instruction of young children at primary school, of young adults during their vocational education, or adult employees in a company, such as fire fighters or teachers receiving in-house training. Educational scientists study and research learning processes, preconditions for learning, learning environments or teaching materials with the aim of understanding, explaining or improving them.

Educational science is studied at different levels:

At learner level (micro level):

This concerns the research, development, introduction and/or evaluation of teaching and learning processes, curricula and educational learning environments at the level of the individual and the group/class. Think, for example, of the development of new teaching materials, such as the digital blackboard. Educational scientists pursue such questions as: Which learning processes are supported by using this? What is a good didactics for teaching with a digital blackboard? How can teachers be prepared for working with such a blackboard? How do we introduce it throughout a school and how can we find out if it functions satisfactorily? And what are the right techniques for evaluating the results of the instruction?

At organisational level (meso level):

This concerns the research on and the development of the organisation, structure and set-up of schools, institutes and business networks. Educational scientists occupy themselves with such questions as: What are the exact implications of organising and setting up a so-called 'technasium' (pre-university school with a strong technological learning) within secondary education? What are the effects of class size on the pupils' learning achievements? What subjects ought to be taught in the training for fire fighter? In which order should those subjects be taught and what is the interrelationship between the contents of the subjects? How can we stimulate, support and design the education and extra training of police employees?

At (inter)national level (macro level):

This is where educational policy and the relationship between education and society (career, labour market) are studied and developed. Educational scientists pursue such questions as: What are the core objectives of the area of 'Orientation to yourself and the world' for primary education? What effects do educational reforms have on pupils' learning achievements? How do Dutch pupils perform in arithmetic compared with pupils from other European countries? What is the influence of block grant funding (whereby the government grants schools freedom of spending) on the educational infrastructure? Following pre-university education, what knowledge and skills should be tested during the school-leaving examination?

As a scientific discipline, educational science has a strong multidisciplinary character and a broad area of application. Both nationally and internationally, four main paths of study can be distinguished:

1. Educational science programmes strongly embedded in the pedagogical sciences;
2. Educational design programmes that have emanated from developments in the area of educational media and technology and the systematic design of education;
3. Educational science programmes strongly embedded in policy and organisation studies;
4. Educational science programmes in the field of (developing) the human resource potential in a corporate context (HRD).

By explicitly opting for a design orientation as its main path of study, the Educational Science and Technology (EST) programme at the University of Twente thus dominantly falls into the second and fourth category. The programme's target is to train educational scientists who, supported by their having acquired a systematic and methodical method of working and scientific expertise, can develop solutions to educational issues.

1.2 Importance of educational science

Many educational scientists supervise or advise pupils/students, teachers and school teams with learning difficulties, organisational problems or with the introduction of educational reforms.

Societal developments call for a continuous need for people who can plan, set up, execute and evaluate education.

Please note that you need to interpret the word 'education' broadly: it might mean education in a traditional school context but it could also mean instruction within companies or adult education. In all of these situations there is a demand for specialists in professionalization and staff training.

Below are several examples of situations in which educational scientists can make an important contribution:

Schools are given increasingly greater freedom in how they present themselves. In order to realise a desired profile, an educational scientist might be called on to support both teaching staff and management. As an educational scientist you can help contribute to the quality of the education, for example by helping teachers to devise a new profile or by designing new teaching material for this.

Testing seems to play an ever larger role in society. These days even children at infant school are tested on their language skills. A couple of years ago the Dutch language and arithmetic test was introduced at teacher-training colleges for primary education (in Dutch: PABO). Of course it is essential that the test is of sufficient quality so that one can be certain as to whether a person has the necessary knowledge and skills for fulfilling a job as a primary education teacher. Educational scientists know how to develop tests for any target group or situation.

Owing to both the rapid developments and scientific progress, knowledge is soon out-of-date. Lifelong learning is important to stimulate the knowledge society and employment in the Netherlands. Dutch trade and industry annually invests billions of Euros in education and

training. Large companies often have their own department for developing and offering training to their staff to improve their performance or further their education. As an educational scientist you are able to develop and implement such trainings or to assess their quality. You might also engage in workplace instruction or in the rearrangement of the work and the workplace so that learning becomes an integral part of work.

1.3 What isn't educational science?

Educational science is the science that strives to describe, comprehend and interpret education with the aim of contributing to the improvement of the education system. Educational scientists work in all the places of learning.

Contrary to what many people think, an educational scientist is not trained to be a school teacher, nor is this the right course to obtain a teaching certificate. In your future profession you will not be standing in front of the class as a teacher. For the greater part you will be working more behind the scenes and thus contributing to making knowledge more appealing and accessible to people of all ages and backgrounds. This might be by studying learning processes and situations (for example by researching the effects of certain materials on pupils' learning achievements) or by directing them (for example by developing material that helps realise certain learning objectives). Good educational scientists are able to combine both activities. In this way you contribute to the educational process, whether that be for the school education system or for in-company learning and development tracks

2. Educational Science and Technology (EST) at the UT

2.1 EST's characteristics

The main focus of the master's degree programme Educational Science and Technology (EST) is on the design and evaluation of learning scenarios in schools and organisations. This could address young children in primary school, secondary and vocational education, or adult employees such as nurses, civil servants, managers or teachers in schools, receiving in-service training or training on the job. In the EST programme you will acquire knowledge about theories of learning and assessment, learning technologies (e.g., serious games), effective training approaches, and learning interventions. You will also learn how to design and evaluate different learning scenarios and move from there into recommendations and solutions for practical problems.

The EST programme has two focal areas:

- Educational Design and Effectiveness (EDE): Focus on learning and instruction in formal and informal settings, and school effectiveness.
- Human Resource Development (HRD): Focus on learning scenarios in organisations.

Systematic, design-oriented and evaluation-based approach

EST graduates are scientific educational professionals: experts who connect scientific research and educational design with practice. Their expertise is based on finding effective solutions for learning problems taken from practical contexts (in both schools and organisations) by using a systematic approach often incorporating technology. The result of this approach is a design (or a set of designs), which is tested in the context of the problem to see if the solution contributes to improvement or innovation.

This systematic, technological, and design- and evaluation-based orientation characterises the EST programme and distinguishes our programme at the University of Twente from other education-related degree programmes in the Netherlands.

- *In-depth domain orientation*
As an EST student you may specialise in either Educational Design and Effectiveness (EDE) or Human Resource Development (HRD) or any combination thereof.
Graduates have a firm and broad knowledge of (one of) these focal areas, and adjacent specific expertise that can be used productively and creatively in various related professional contexts.
- *Applied character*
In various courses during the programme you will address real-life educational issues. You will thus be applying your knowledge in practice. This way you will learn how to 'recognise' the newly acquired educational theories in practice and also how to apply these theories in real-life situations.
- *Ample attention to academic training*
Ample attention is paid to students' academic training. The programme broadens your research skills so, as well as learning how to conduct both qualitative and quantitative research, you are also taught how to write scientific articles. And you put all these skills into practice during your final graduation project.

- *International character*
The EST programme attracts students from various backgrounds: graduates from the faculty's Bachelor's degree programme Educational Science, international students, graduates from other undergraduate degree programmes of Dutch research universities and universities of applied sciences (in Dutch: HBO), and professionals who wish to broaden and deepen their knowledge and skills.
- *Attention to the use of technology*
In our teaching we also pay attention to the role of technology in learning processes. For example: To what degree does the kind and amount of environmental characteristics influence the learning achievements of employees? And: What role can the computer play in the instructional process or with assessing educational effectiveness?
- *Design-oriented and problem-solving approach*
The programme teaches how to analyse educational and training problems in a systematic way and how to design good, workable solutions for those problems. To do so, you first need to gain a clear picture of the issue in question. Your research will mostly be for the benefit of design processes for organising learning trajectories, the design of media applications, the evaluation of real-life situations or the development of education policy. Graduates are able to systematically frame up, fill in, augment, evaluate, and implement designs to support learning environments in various education and training contexts.

Our graduates work in a wide range of organisations, from government, ministries, publishers and educational support services to universities, higher education institutes and multinational companies. A number of graduates have started their own education and training consultancy bureau.

2.2 EST's goals

The main objective of the Master's programme in Educational Science and Technology is to educate competent researchers who are scientifically schooled, independent and critical educational designers, decision makers and advisers who can contribute to the subject area of education in general and to their chosen area of concentration in particular. To reach this goal the programme has established the following standards:

- **Domain orientation:**
Graduates have a firm and broad overview of education and of the specialty areas within, and specific expertise in one of the specialty areas that can be used productively and creatively in various related professional contexts.
- **Design competency:**
Graduates are able to systematically frame up, fill in, augment, evaluate, and implement designs to support learning environments in various education and training contexts.
- **Research competency:**

Graduates are able to systematically collect, analyse, and interpret research data, to draw conclusions there from, and on the basis of that advise or decide regarding possible alternatives and activities to be conducted, particularly in a design context.

- Advice competency:
Graduates are able to advise (educational) organisations, in part based on the three competencies mentioned above, with regard to the implementation of better and more efficient learning environments and organisational as well as policy related arrangements for learning and teaching.
- Academic reflection:
Graduates are able to critically reflect on processes, resulting products, and achieved results from systematic and well-chosen scientific, social-cultural, and ethical perspectives in such a way as to contribute to the professional development of the educational specialist and to a broadening and/or deepening of the scientific subject area.

2.3 EST's philosophy

The EST programme has been designed around the following ideas: Integration of research, design, advice and reflection skills; a curriculum in which students get increasing responsibility for their own development; and a strong link with professional practice. This has the following consequences for the programme:

- There are no separate research courses, design courses, advice courses or reflection courses. In each course students will work on multiple skills at the same time and they will learn how to integrate them. For developing a good design, students need research skills and advice skills to implement the design successfully. A good research needs to lead to advices for practice, and the other way around: as a scientist, students need to be able to base one's advice on the state of the art research findings.
- At the same time, there are courses with a strong theoretical component and assignments designed by the lecturers, and there are courses in which students choose a case to work on, that matches with one's interest and the skills the student wishes to practice.
- (Partly) parallel to the coursework, students will work on their Final Project. Students will prepare themselves for this Final Project by working under supervision of a teacher on their research proposal. They will choose their Final Project in consultation with the programme's Final Project co-ordinator(s) , and they will design it in consultation with a UT staff member and (if applicable in case of a so-called external project) with the educational organisation or company. The EST programme has structural relations with several organisations and companies who often have projects available. The Final Project always has a strong research part and depending on the project it might also have a significant design, evaluation or advice component. During the Final Project, students are responsible for their own learning processes, but, of course, they will be supported by a community of peers and their university supervisors.
- Problem-based and project-based learning are major characteristics in the programme. Assignments are based on real problems from practice, and students

will visit schools or companies. Parts of the student's study trajectory will take place in "live contexts" inside educational organisations or companies in which the student will learn together with and from professionals. This will also help students to orient themselves on their Final Project and of course on their future career.

- Depending on background, future goals and time limits, students can design their own curriculum to a certain extent. For example, if you want to go abroad for your Final Project, you might choose to complete all your courses in the first semester. Also for part-time students, various trajectories are possible. Students are also allowed (upon possessing the required prior knowledge) to take courses from both the HRD and EDE area or they can even request to take a course from another relevant master's degree programme. To make deliberate choices in designing their learning routes, students will get advice on this from the study adviser who will explain possibilities and restrictions.

2.4 EST's programme outline

The EST programme (see the programme's outline below) starts with the core course "Trending Topics in Educational Science and Technology", which is obligatory for all EST students and therefore (given the 2 terms of enrolment) offered in September and in February. In this core course, several instructors will present their field of expertise, which are aligned with the current scientific research areas in our research groups. The presented topics will cover the Educational Design and Effectiveness (EDE) as well as the Human Resource Development (HRD) domains, e.g.:

- Frameworks for evaluating the quality of education
- Data-based decision making in education: challenges and opportunities
- Learning with multimedia
- The role of personality in HRD
- Knowledge sharing in organisations
- MOOCs as a tool for continuous learning

Each trending topic will be dealt with in a 3-weeks mode: (a) the instructor introduces the topic in a lecture, (b) a seminar where instructor and the students will focus on the topic's content-related and methodological issues, and (c) 1 week for (individual or group-based) completion of a topic-related assignment. The nature of the assignments varies but the full set of to be attained competences (design, research, advice, and reflection) are addressed.

Next to this core course, a preparation course (called: Research Proposal) for the Final Project is organised. During this course students learn how to search for relevant literature, how to design a research project and how to write a research proposal for their Final Project.

Programme outline 2018-2019 (as an example: the full-time, September-intake version)

	Core Course - obligatory
	Preparatory Course for the Final Project (Research Proposal)
	Final Project
	Elective Courses

Quartile 1A	Quartile 1B	Quartile 2A	Quartile 2B
Trending topics in educational science and technology 201200034 (10 EC)			
Team learning at work 201500010 (5 EC)	HRD & technology in a live context 201600126 (5 EC)	Regulation and facilitation of workplace learning 201200031 (5 EC)	Leadership and organisational change 201200032 (5 EC)
Designing learning & performance support 191970340 (5 EC)	Assessing, monitoring and improving student and school performance 201300001 (5 EC)	Innovative technology-based learning environments 201400002 (5 EC)	Teacher learning and development 201200027 (5 EC)
Learning and instruction 192914040 (5 EC)		Learning and instruction 192914040 (5 EC)	Educational measurement 201500149 (5 EC)

	Res. proposal		Res. proposal	Research Proposal EST 201200035 (5 EC)	
				Final Project EST 201200036 (25 EC)	

Global talent management 201500086 (5 EC)		HRM and innovation 201500087 (5 EC)	
		HRM and technology design 201500088 (5EC)	

With regard to the electives the following applies:

- A student selects four (4) elective courses (5 EC's each) out of the set of available 10 (EDE and HRD) electives as presented in the table above.
- In this regard it is recommended (but not obligatory) that these four electives dominantly stem from either the EDE or the HRD focus and thus align optimally with the student's Final Project.
- Instead of selecting the full 20 EC's from these 10 electives, a student may (in addition to at least 2 - i.e. min. 10 EC's - of these 10 elective courses) choose **max. 2 - i.e. max. 10 EC's** - from a set of three (3) courses from other UT-BMS programmes, which have been approved by the Examination Board and identified by the

Examination Board as courses which are closely related to the educational science domain. These courses are:

- Global talent management (201500086)
- HRM and innovation (201500087)
- HRM and technology design (201500088)

Note: In terms of rostering, these 3 extra courses (since they stem from other master's degree programmes at the University of Twente) may conflict with the EDE or HRD electives. So, please check the roster AND the exam dates (!) prior to the start of these courses.

Detailed information on all 2018-2019 courses can be found in Part D of this programme guide or via the university's course catalogue:
<https://osiris.utwente.nl/student/OnderwijsCatalogus.do>

2.5 Educational Design and Effectiveness (EDE)

The Educational Design and Effectiveness (EDE) domain focuses mainly on teacher and school development, school effectiveness, and ICT in a variety of educational contexts.

Educational design involves the planning, development, and implementation of innovative learning scenarios. Effective implementation of these change trajectories at both the school and classroom levels requires teachers and schools that are ready for the implementation. Teacher professional development is therefore one of the elements that is addressed when designing, developing, and implementing effective learning environments.

There is an emphasis on the role of ICT (e.g., simulations, serious games, interactive apps) when designing learning environments. Measuring the effectiveness of the implemented educational innovations is essential, as is structural monitoring and assessment of education. Schools should be able to track the quality and results of their teaching, not just through student assessment, but also at the teacher and school levels.

Core questions in this field are:

- How can learning innovations be designed and implemented?
- How can technology be used and integrated into education?
- How can schools and teachers be supported in the design, development and implementation of innovations at both school and classroom levels?
- How can teachers be empowered in their own professional development for implementing innovative (technology-based) learning innovations?
- Can school performance be improved by giving schools feedback on the level of their performance?
- To what degree do school leadership, school culture and the teamwork between teachers influence the effectiveness of schools?
- Do schools perform better as a result of government inspections or are the improvements only superficial?

In the full set of electives, three of the EDE specialisation courses focus on the individual learner: “Designing Learning and Performance Support”, “Learning and Instruction” and “Innovative Technology-Based Learning Environments”. Innovative technology is central in these courses, which offer theoretical insights as well as ample hands-on experiences. In the course “Assessing, Monitoring, and Improving Student and School Performance”, the emphasis is on instruments to assess individual and school performance and the implications for the class and the school organisation. In the “Teacher Learning and Development” course the expertise of teachers and their roles in the learning process are discussed.

Acquired skills

The EDE domain has an applied character in which the integration of research, design, and reflection skills is central. As a graduate with an EDE focus, you will be able to:

- Understand and analyse different theories and paradigms related to learning and instruction, teacher and school development, school effectiveness and ICT in a variety of educational contexts and you will be able to indicate what they mean for practice,
- Plan, design, and implement innovations to increase the quality of education and assess the effects of these innovations,
- Improve the performance of schools by taking school leadership, school culture and teamwork between teachers into account,
- Reflect on the various core issues in the field of EDE and on your own position on these issues.

2.6 Human Resource Development (HRD)

Human Resource Development (HRD) focuses mainly on the learning and development of adults in the context of their professional work. Leadership, talent development and lifelong learning are important for people's employability and their participation in a knowledge society.

Companies and institutions invest billions in education and training. Large companies often have their own corporate department for HR development and they offer training to their staff to improve their performance and professional development. HRD graduates are able to develop and implement such training or to assess its quality. Graduates might also be engaged in workplace learning or in organisational change so that learning becomes an integral part of the day-to-day work environment.

In the HRD domain, three of the elective courses each address a specific HRD-related theme: (a) Team learning at work, (b) Regulation and facilitation of workplace learning, and (c) Leadership and organisational change. These courses all have a strong theoretical component, but in the course-specific assignments you will also develop and practice your research, design, advice and reflection skills. In the 4th HRD elective course on HRD & technology in a live context, you work in teams on real HRD cases from organisations. These cases will focus on technology-enhanced learning from an HRD perspective, for example the implementation of blended learning in the workplace, the use of social media for knowledge

sharing within the organisation, assessment and/or evaluation of e-learning trajectories, and pros and cons of using Massive Open Online Courses (MOOCs).

The aim is to provide the companies with an advice report. In this report, the latest and/or most relevant insights from scientific research and theories are presented. This course is a unique chance to apply what you have learned in the more theoretical courses, while at the same time it prepares you for your Final Project.

Core questions in the HRD field are:

- How do people learn during their work?
- How do people become experts?
- How may one facilitate workplace learning and professional development?
- What are effective training programmes and how can they be evaluated?
- How can team and organisational learning be facilitated?
- How do organisations change, and how can HRD professionals be instrumental in this process?
- What is the role of new media in workplace learning?

Acquired skills

In the field of HRD knowledge and research, approaches from a combination of disciplines are used to answer the core questions: Psychology, Educational Science, Business, Human Resource Management, and Sociology. In addition to its focus on current HRD research, this domain also has an applied character in which the integration of research, design, advice and reflection skills is central. As an HRD professional you will be able to:

- Comprehend and analyse different HRD theories, and to understand what they can mean in practice,
- Design innovative and effective interventions to enhance learning and development in a company or institution,
- Advise companies and institutions on questions related to their employees' learning and development,
- Conduct research on HRD problems,
- Use research to design effective learning interventions and to give solid advice,
- Reflect on the various core issues in the field of HRD and on your own position on these issues.

2.7 EST in a part-time mode

The one-year Master's degree programme EST can be studied both in a full-time mode as well as part-time. In the latter case the programme lasts 1.5 till 2.0 years.

In this regard (particularly for facilitating this part-time mode) the following applies:

- All courses (except the **3** extra courses which stem from other master's degree programmes!) are (dominantly) scheduled on a maximum of two fixed days per week: Mondays and Tuesdays.
- Classes of a specific course take as much as possible place on the same day during the week.

Thus, as a 'part-timer' you may timely arrange with your employer which day of the week you will be spending on your studies.

Note:

The nominal study load in the part-time mode depends on the selected courses. Thus, it is possible that your study load is not always evenly distributed.

2.8 Doctorate programmes

After completing your Master's degree programme, you could opt for a career in scientific research. This involves spending four years studying a particular research area in depth. An integral part of this is writing your PhD thesis, and at the end of your PhD period you will present and defend your research in public. After successfully completing your PhD, you will be awarded the title of Doctor (Dr.).

Unlike in many other countries, most PhD researchers in the Netherlands are paid employees, often working directly for the university. Some PhD researchers come to the Netherlands with an international scholarship.

In addition to the regular PhD positions offered on the UT vacancies website, Twente Graduate School (<http://www.utwente.nl/en/education/post-graduate/tgs/>) offers several integrated master/PhD programmes.

EST students, who consider a scientific career, may wish to consider the graduate/PhD programme 'Learning in Educational and Training Settings'. The EST programme is one of the UT Master's degree programmes involved in this graduate research programme. Students who are admitted to the Graduate School specialise during the (EST) Master's phase in their preferred area of research and can, during this time, already focus on the subject of their PhD dissertation. This way they can transfer faster into a PhD trajectory. In other words, students who are admitted to the Twente Graduate School use the final project/thesis period during their EST master's degree programme as the initial step on their route to PhD research. Students in the Twente Graduate School are invited to attend additional courses to broaden their perspective and to support their scientific career. After the first year, and upon excellent academic achievement, students will be invited to apply to available PhD positions in the Graduate School.

More information about the educational system in the Netherlands: UT master/graduate website: <https://www.utwente.nl/en/education/post-graduate/>

2.9 University of Twente characteristics

Irrespective of which programme you will study at the University of Twente, all our Master's degree programmes strive to train entrepreneurial academics who are able to address and solve social issues by conscientiously pinpointing problems, investigating possible solutions or designing, developing and evaluating new products or applications. We emphasise that our students, next to knowing their way around in their own discipline, are capable of working

together with professionals from other disciplines. After all, many social issues demand a multidisciplinary solution.

We aim at educating students to become excellent professionals who possess both scientific as well as professional competences.

Therefore, the following characteristics apply

- *Small-scale instruction*
Next to the more or less traditional lectures, instruction is particularly organised in small group, interactive workshops, seminars and practicals. In our opinion, small-scale and strongly-supervised (contact-intensive) instruction is of paramount importance to the development of professional and academic skills. Students carry out (individual and small-group) assignments where collaborative, evaluative and other social and communication skills play an important role.
 - *Strong connection between education and research*
The contribution of faculty members to the Educational Science and Technology programme is recognised and highly valued, both nationally and internationally. The Master's degree programme is strongly linked to topical research that is conducted in the departments concerned, and lecturers draw many examples from their own research during their lectures. It also occurs that students actively contribute to the lecturers' research, e.g. during their graduation phase. The subjects and assignments of the Master's degree programmes are often linked to current research projects within the research lines of the departments. In this way you will be initiated in the professional and academic field of action.
 - *Extensive student supervision*
The EST programme has been designed in such a way that you yourself are to some extent responsible for your study trajectory and your study progress, and substantial freedom to make intrinsic choices yourself is offered. This could imply: independently devising subjects for assignments, choosing your specialisation, opting for spending study time abroad, and the theme of your final research project. It is important that your choices are made consciously and are well-considered. In this regard, you may count on a good tutor to help you making the right choices and be there for you.
 - *International possibilities for studying abroad*
We think it is important that students broaden their academic horizon during their studies. In this respect, we support ambitions that include spending some time abroad (e.g. taking courses, participating in on-going research). Please feel invited to contact your study adviser for discussing your ambitions and possibilities.
 - *Encouraging entrepreneurship*
For beginning entrepreneurs with innovative ideas the UT has introduced the so-called TOP programme (*Temporary Entrepreneurs Positions*), which helps to bridge the first, usually most difficult year of a new enterprise with basic funding, support and advice.
 - *Encouraging student activism*
The University of Twente fervently encourages all kinds of student activism (ranging from membership of a committee or board, to assisting university staff or starting a small business). It is the university's firm belief that students will benefit from extra-curricular activities.
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- *Open and informal atmosphere between lecturers and students*
The programme's atmosphere (educational climate) can be characterised as pleasant. Communication between lecturers and students is quite informal.
- *Guest lectures by well-known researchers*
In recent years various (internationally) famous researchers have honoured the programme with a visit, in many cases delivering a lecture or a lunch seminar.

What does this mean to you?

Our students are enterprising, curious, dare to take risks, have self-knowledge and insight into the tasks, functions and roles that a job entails. Characteristics such as self-discipline, personal responsibility, using one's initiative and independence are important to us. Our students are open to the contributions made by people with other expertise, other backgrounds, and other methods.

Part B: Admission and Enrolment to the Master's degree programme EST

3. Admission criteria and application procedures

3.1 Admission criteria

The programme's Admission Committee assesses all applicants to the MSc programme Educational Science & Technology (EST) on an individual basis. The assessment of the applicant's skills is based on formal as well as content-related admission criteria.

You are invited to check as well the concerned web pages on:

<https://www.utwente.nl/en/education/master/programmes/educational-science-technology/admission/>

The *formal criteria* are as follows:

- A. Bachelor's degree or equivalent
- B. **Note:** for international students (i.e. non-Dutch students) only:
IELTS minimum overall score of 6.5 on the IELTS (where each minimal sub score is 6.0) or equivalent,
Please check the university's website for details and exemptions:
<http://www.utwente.nl/master/how-to-apply/internationaldegree>

The *content-related admission criteria* require that a student possesses and/or demonstrates evidence on sufficient knowledge and skills concerning the following:

- C. The content of the domain of educational science and technology.
- D. Research methodology.
- E. Research techniques, including the use of statistics for data analysis.

Ad C. Content of the domain

The domain of Educational Science and Technology can be characterised by the following: a field that encompasses the analysis of learning and performance problems; the design, development, implementation, evaluation, and management of educational and training processes, resources, and trajectories, intended to improve learning and performance in a variety of settings. A student meets the domain-specific admission criterion if he/she possesses a Bachelor's or Master's level degree in a domain that is similar or related to the domain of this definition, and/or if he/she has substantial relevant work experience from which he/she has mastered the aforementioned conceptual knowledge.

Ad D. Research methodology

This refers to the main concepts, procedures, and methods used in social science research, and which aim at systematic, conceptual (literature) analysis, modes of data collection, data analytical schemes, and procedures for interpretation of findings, in order to better understand social phenomena and processes, and/or to support all levels of making choices in and for social reality. This methodology supports the systematic design, execution and evaluation of research activities. A student's basic mastery of this methodology should be proven by courses which he/she has taken in this area, and/or reports of research projects or activities he/she has been involved in substantially.

Ad E. Research techniques, including the use of statistics for data analysis

This area is dedicated to the skills and understanding of techniques for collection and for analysis of both quantitative and qualitative data. If a student masters this area he/she is able to apply descriptive statistics (distribution, correlation, regression, cross tabling), theory of probability (calculation, expectation, variance, binomial distribution), and aspects from inductive statistics (average based conclusions with known population deviation). Experience with the use of SPSS or a comparable computer-based statistical package is part of this mastery. Evidence of this can be presented by content review of courses which he/she has taken, and/or use of these techniques in research, demonstrated by means of a report or an article.

3.2 Evaluation of the admission criteria

On behalf of the programme chair, the programme's Admission Committee will review the information and documents presented by each applicant, and they will decide whether a student meets all stated criteria sufficiently.

In order to be considered for admission, an applicant has to meet the aforementioned *formal* as well as *content-related* admission criteria, and upon meeting these criteria fully or partly, the following applies.

Evaluation of these entrance criteria may result in one (1) out of two (2) alternative decisions by the Admission Committee:

1. If a student meets all formal and content-related criteria he/she will be admitted to the EST Master's programme directly and unconditionally.
2. If a student does not meet the entry requirements, he/she will be offered the possibility of taking (a part of) the EST pre-Master's programme.

In addition to the generic information, the following detailed options apply:

- 1) Students with a **bachelor's or master's degree from a (Dutch) university of applied sciences** (in Dutch HBO-instelling) enrol in the full (30 EC's) version of the pre-Master's trajectory.
- 2) Students with a **bachelor's or master's degree in Arts or Science** (in Dutch: Alfa- or Beta opleiding) **from a (Dutch) research university** enrol in the full (30 EC's) version of the pre-Master's trajectory.
 - a. These students lack the required domain-specific (Educational Science) knowledge. They therefore have to complete the (15 EC's) domain-specific pre-Master's courses, plus
 - b. Despite their assumed academic level in reasoning and doing research, these students miss the social science competences in this regard. They therefore also have to complete the research methodological (15 EC's) pre-Master's courses.
- 3) Students with a **bachelor's or master's degree in Social Sciences** (in Dutch: Gamma- of Sociale wetenschappen) **from a (Dutch) research university** will, depending on their specific prior education, only take specific components (15 EC's) of the pre-Master's trajectory.

In general, it is assumed that these students possess sufficient generic academic and research methodological competences. They are **exempted** from the pre-Master's courses *Research Methodology and Descriptive Statistics, Academic Writing, and Inferential Statistics*. Therefore they, taking into account specific prior domain-specific knowledge, will take a 15 EC's programme (i.e. the pre-Master's courses: *Designing for Learning in Schools and Organisations*, and *Research Studio*).
- 4) Students with a **bachelor's or master's degree from specific – domain related - (research university) programmes** (e.g. Educational Sciences, some sub-domains in Pedagogy or Psychology) may be exempted from the pre-Master's trajectory fully. This is assessed in detail on a portfolio base where professional experience will be taken into account as well. Students in this category are invited to contact the EST programme staff, Ms. Yvonne Luyten-de Thouars (e-mail: y.c.h.dethouars@utwente.nl) or Mr. Jan Nelissen (e-mail: j.m.j.nelissen@utwente.nl)
- 5) **UT-BMS students** who have successfully completed the TOM-modules "Professional Learning in Organisations" (201500001) and/or "Psychology in Learning & Instruction" (201400121) may also meet the EST entry requirements for direct enrolment. These students have to contact the EST programme staff, Ms. Yvonne Luyten-de Thouars (e-mail: y.c.h.dethouars@utwente.nl) or Mr. Jan Nelissen (e-mail: j.m.j.nelissen@utwente.nl) if they intend to pursue their studies in EST after their current bachelor's programme.

Note: full information on the pre-Master's trajectory can be obtained from Chapter 4 of this programme guide.

3.3 Application procedures

Depending on their prior education, applicants are subject to the following procedures:

a. *UT Bachelor's students in Educational Science Technology (B-OWK) and EST pre-Master's students*

Having obtained your Bachelor's degree in Educational Science (in Dutch: Onderwijskunde) at the UT or having completed the EST pre-Master's programme, you automatically qualify for a direct and unconditional access to the Master's degree programme EST. Formal registration for the Master's degree programme EST must be submitted to the UT's Central Student Administration (CSA). In practice, the staff of your Educational Affairs Office (in Dutch: BOZ) will contact you timely. In addition, the EST programme staff will inform CSA whether you have satisfied all the requirements for registering to the EST Master's degree programme, by sending them an admission letter, upon which your bachelor's or pre-master's enrolment will be converted into the master's EST enrolment.

Note:

You have to renew your formal registration at the UT every year! CSA will remind you in this respect by sending you an e-mail message with a link to the digital re-enrolment form annually.

b. *Other UT Bachelor's students*

This mostly implies that you have to take the domain-specific courses of the pre-Master's programme OR one or 2 specific modules from University of Twente Psychology bachelor's programme¹, in order to be prepared optimally for the master's degree programme in Educational Science and Technology. You will need to inform both the Educational Affairs Office (BOZ) of your own programme as well as the EST programme staff if you intend to pursue your studies in EST.

c. *Other applicants*

On the basis of detailed information on your prior education, the Admission Committee of the EST master's degree programme will assess how your pre-Master's trajectory will look like. In any case you have to apply **online** via:

<https://www.utwente.nl/en/education/master/how-to-apply/>

Note:

Although most applicants first have to take the EST pre-Master's programme (or parts thereof), it has to be underlined that there is NO separate application procedure for the pre-Master's programme.

You have to apply via the master's application website!

¹ These modules are: Professional Learning in Organisations (201500001) and/or Psychology in Learning and Instruction (201400121)

Diversity of application deadlines (depending on nationality, visa, housing)

In order to facilitate a smooth start of your studies at the University of Twente, your application has to be submitted before the stipulated deadlines:

<http://www.utwente.nl/en/education/master/admission-requirements/application-deadlines/>

Please bear in mind that you may apply even if you not yet formally obtained your prior (bachelor's) degree (in this regard, we expect that you will obtain your bachelor's degree officially before 1 September or 1 February).

If you have any questions regarding the application procedures and the application form, please contact:

University of Twente, Student Services / Admission Office (AO),

Building: Vrijhof, room 236

Tel: 053 - 489 4317,

E-Mail: studentservices@utwente.nl

If you have any questions regarding the content of the EST master's or pre-master's programme, please contact the EST programme staff:

Mr Jan Nelissen

Building Cubicus, room C104

Tel: 053 489 3588

E-Mail: j.m.j.nelissen@utwente.nl

Ms Yvonne Luyten-de Thouars

Building Cubicus, room C110

Tel. 053 489 1117

E-mail: y.c.h.luyten-dethouars@utwente.nl

4. Pre-Master's programme

Many students wishing to be admitted to the master's programme Educational Science and Technology (EST) will first have to complete (parts of) our pre-master's programme. Whether you will have to take the full pre-master's programme, a partial pre-master's programme or no pre-master's programme at all will depend on your previous qualifications (See: Chapter 3). All students will be evaluated by the programme's Admission Committee individually on a portfolio base.

Please note:

- The pre-Master's courses are taught in English.
- All assigned pre-Master's courses must be successfully completed in order to be admitted to the Master's programme Educational Science and Technology!

4.1 Programme Outline

The full (30 European Credits / EC's) pre-Master's programme comprises of both domain-specific (Educational Science and Technology) courses and courses which address generic academic and research methodological competences.

The programme prepares a student for applied, design or evaluation-oriented, scientific reasoning and research during his/her Master's trajectory Educational Science and Technology.

Therefore, all assigned pre-Master's units of study (to be decided by the Master's programme Admission Committee) must be successfully completed before one can formally begin the Master's programme.

The pre-Master's programme has two (2) terms of enrolment (September and February). Therefore the following structure applies:

Full-time programme = ½ year = one semester

September enrolment		February enrolment	
Semester 1		Semester 2	
Quartile 1A	Quartile 1B	Quartile 2A	Quartile 2B
Research Methodology and Descriptive Statistics (5 EC)	Inferential Statistics (5 EC)	Research Methodology and Descriptive Statistics (5 EC)	Inferential Statistics (5 EC)
Designing for Learning in Schools and Organisations (5 EC)	Research Studio (10 EC)	Designing for Learning in Schools and Organisations (5 EC)	Research Studio (10 EC)
Academic Writing and Reading (5 EC)		Academic Writing and Reading (5 EC)	
15 EC	15 EC	15 EC	15 EC

Self-study pack. EST

Self-study package EST

Special regulations in the pre-M programme that deviate from bachelor's or master's degree programmes

- The maximum registration period for completing the pre-master's programme is one (1) year.
Note: this applies to part-time students as well!
- During this period a student may maximally sit two (2) times for an exam or may maximally submit two (2) times an assignment.
In case he/she fails to pass the 2nd time the exam or fails to complete an assignment within two (2) times the student will be excluded from the pre-master's programme Educational Science and Technology.
Moreover, a student will not be admitted to the pre-master's programme Educational Science and Technology in case he/she, within the framework of another University of Twente pre-master's programme, already reached the maximum of two sits for an exam of the following units of study: Research Methodology and Descriptive Statistics, and/or Inferential Statistics.

Language in the pre-master's programme

The language of communication in the pre-master's programme Educational Science and Technology is English.

This premise however requires additional explanation:

- Study materials are in English.
- Classes (lectures, seminars, workshops, practicals, and others) are taught in English.
- Exams and assignments are composed in English and students have to complete all exams and assignments in English.
- Presentations have to be prepared in English
- Oral communication between a student and an instructor may revert to Dutch in case no non-Dutch students are involved.
- Students are supposed to be aware of the aforementioned rules with regard to the use of English and Dutch.

Self-study package

In order to prepare and assist (potential) students prior to and during their pre-M study trajectory, we offer an online self-study package: <http://www.utwente.nl/est/en/selfstudy/>

This package contains study materials which cover the fundamentals of the topics and themes which are dealt with in both our pre-master's as well as in our master's degree programme and we think that this self-study package will prepare students best for participating in our on-campus course offer.

This self-study trajectory is not an official prerequisite to enter the pre-Master's programme, but all necessary prerequisite knowledge will be offered in the self-study trajectory. In other words: all courses in the pre-Master's programme are based on the literature that is offered in the self-study.

We therefore highly recommend all applicants of the pre-Master's programme that they read the literature that is offered in the self-study trajectory, that they watch the accompanying videos in which the literature is explained, and that they (upon availability) work on the self-study assignments, to make sure that all prospective students are fully prepared when enrolling in our pre-master's programme!

4.2 Pre-Master's programme in a part-time mode

Basically the pre-Master's programme is a full-time programme with a study load of 30 EC that can be studied in half a year. This implies the following: there is no formal part-time variant, but it is possible to spread the pre-Master's courses to be taken over a period of max. 1 full academic year. In this regard we recommended a preferred sequence of courses (see below), but we require that students who opt for this part-time mode first consult our study adviser (Ms Yvonne Luyten-de Thouars / e-mail: y.c.h.luyten-dethouars@utwente.nl) in order to draw up a detailed plan of study where a student's particular situation will be taken into account.

Part-time programme = 1 year = two semesters

Self-study pack. EST	Semester 1		Semester 2	
	Quartile 1A	Quartile 1B	Quartile 2A	Quartile 2B
	Research Methodology and Descriptive Statistics (5 EC)	Inferential Statistics (5 EC)	Designing for Learning in Schools and Organisations (5 EC)	Research Studio (10 EC)
	Academic Writing and Reading (5 EC)			
10 EC	5 EC	5 EC	10 EC	

Self-study package EST

5. Costs

5.1 Tuition Fees

The University of Twente applies both statutory tuition fees as well as institutional tuition fees. The tuition which has to be paid basically depends on:

- the status of your enrolment (e.g. pre-Master's or Master's degree student, part-time vs. full-time)
- your nationality (Dutch and/or European Union (EU/EEA) vs. non-EU/EEA)

The exact amounts are indexed annually.

Full information can be obtained from:

<https://www.utwente.nl/en/student-services/money-matters/tuitionfee/>

Next to the tuition fees, you need to bear in mind the following annual costs:

- Teaching materials (approx. € 400 - € 500)

5.2 Cost of living

As a guide, a single student will need approximately € 700 to € 900 per month for (on-campus) accommodation, study materials, and general living expenses.

5.3 Scholarships and Grants

The University of Twente has several scholarships for students completing UT postgraduate programmes. These scholarships vary from government grants to funding by organisations or private people. In addition, faculties and the University of Twente Scholarship (UTS) fund offer a limited number of scholarships for excellent students. All scholarships require that all UT application procedures are fully completed before applying. Applying for a scholarship is possible as soon as you have received a letter confirming admission. Please note that some scholarships are for students of specific nationalities or specific educational programmes. More information can be found at:

<http://www.utwente.nl/internationalstudents/scholarshipsandgrants/>

Part C: General information

NOTE:

The information provided in this section may be subject to changes. Therefore, please check the websites of university's Centre for Educational Support (Student Services) (<https://www.utwente.nl/en/ces/>) for the most up-to-date information.

During the pre-M introduction, timetables (rosters) will be handed out and explained, books can be purchased, you will meet your lecturers, fellow-students, and the educational support staff, and you will be shown round the faculty building, and register for Komma (the EST study association).

6.3 Purchasing study materials

You will need books and/or lecture notes/readers/syllabuses for almost every course. For these please go to study association Komma and/or the Union Shop.

Buying books

On the website of study association Komma (<http://www.komma-ut.nl/study/books/>), you can find a list of the text books that are compulsory or recommended for the **first quartile**. You can order these books with a discounted price through Komma.

If you wish to order your books via Komma, you need to register yourself as a member. This can be done online at <http://www.komma-ut.nl/profiel/register/>. The books will be delivered at your desired address (in The Netherlands) for free. Apart from discounted book prices, membership of Komma has numerous other benefits (see below).

Alternatively, you can order your books through a regular book store, such as www.studystore.nl, www.bol.com or www.amazon.co.uk. These also offer second hand books.

Please note that some books take longer to be delivered. If you want to have your books on time (before the start of the first lectures), you'll need to order your books on time (i.e. 2-3 weeks in advance).

Note: The books that teachers have designated as "compulsory literature" can also be found in an especially reserved part of the university's library.

Buying lecture notes, readers and syllabuses

The lecture notes, readers and syllabuses are sold from the beginning of each term in the Union Shop. Via the website you can check if they are in stock:

<https://su.utwente.nl/en/unionshop/>.

In the Union Shop you can also buy UT gifts and clothing, and there is a copy service. Besides copying, the self-service section also has provisions for binding reports, cutting flyers, etc. The Union Shop is located on the ground floor of the Bastille and is open every weekday from 10.00 - 17.00 hrs.

Study association Komma

Each study programme has its own study association and for Educational Science and Technology that is Komma. At the same time, Komma is also the alumni association of EST graduates. This combination is unique at the UT, as study and alumni associations are normally separate organisations. By uniting students, alumni and staff in one association, Komma make it easy to find others with shared interests within the broad domain of EST. Komma is the meeting place for students and alumni where professional skills are honed and where mutual relations and contact with the faculty are kept up.

Connect - Share - Discover

These are the focal points that Komma revolves around. *Connect* is about linking like-minded people, the “we-feeling” and pride of the Twents Educationalists. *Share* is about sharing knowledge, experiences and inspiration. *Discover* refers to discovering new ideas, concepts and trending topics. These three key pillars are also closely interconnected. For example, sparring with one another can be thought of as both connect and share, and inspiration day can be grouped under share and discover.

For more information, see:

www.komma-ut.nl/ (Dutch) or
www.komma-ut.nl/international/ (English)

For registering as a member:

www.komma-ut.nl/profiel/register/

6.4 Student Card

The student card of the University of Twente is a proof identity for the University of Twente and a proof of enrolment. You have to show the student card on request when using university facilities, like attending lectures, taking exams, visiting the libraries, etc.

When will you get a student card?

As soon as your enrolment is finalised by the Central Student Administration (CSA), and you have uploaded your digital passport photo in *Osiris Student*, you will receive your student card and two declarations of enrolment by post. Make sure that CSA has your correct address.

Uploading digital passport photo in *Osiris Student*

In *Osiris Student* you can upload your digital passport photo as follows.

- Go to *Osiris Student*, and log in with your login name and password
- Choose the option ‘uploaden pas photo’
- Choose the option ‘Browse’ in order to select a file
- Your digital passport photo is uploaded

The student card can be used as

- Proof of enrolment for the academic year 2018-2019 (the declaration of enrolment can be used to prove that you are enrolled (for example at an Insurance company). This certificate states for which programme and for which period you are enrolled.
- Library card.
- So-called Union Card (if you indicated that you want to use the sports and/or culture facilities of Enschede, the card will also function as Union Card. See the website for more information about the Union Card.

For details on how to use the card, what to do in case of loss or theft, transfer to another degree programme, or termination of your studies, please visit the Student Services website. <https://www.utwente.nl/en/student-services/>

You also may visit their office:

Location	Vrijhof, room 239 B
Opening hours	Monday – Friday from 10:00 – 16:00 hour
Telephone	053 - 489 2124
Mail	studentservices@utwente.nl

6.5 Communication and information

One of the things you will notice when you decide to study at the University of Twente is the multitude of means of communication the university, the faculty and your programme use to communicate with you, be it directly or indirectly. It starts as soon as you pre-enrol for the University of Twente. As an early registrant, you will be given your own UT e-mail address, user name and password that allow you to surf the net via the university. The Internet and e-mail are by far the most important means of communication for both the programme and the faculty.

E-mail

E-mail is used for rapid communication between the programme or an individual lecturer and an individual student or small group of students. Only if absolutely necessary e-mail is used to communicate with large groups of students, for instance if a lecture is suddenly cancelled or in case an examination is postponed. In that case, the Educational Service Centre (in Dutch abbreviated as: OSC = Onderwijs Service Centrum) will not be able to reach all students in time via the usual means of communication, i.e. the educational announcement. *All e-mail sent by the OSC should be read immediately.*

UT students generally have <studentname>@student.utwente.nl as their e-mail address, e.g. h.j.peters@student.utwente.nl (exceptions can be made for students with the same initials and last name).

You can find a list of e-mail addresses of UT staff via the home page of the UT: <https://people.utwente.nl/>

Student portal

My.utwente.nl is the portal for students. This portal provides students log-in to all systems of the University of Twente: <http://my.utwente.nl>

Canvas: the digital learning environment of the UT

Canvas is the digital learning environment of the University of Twente and can be found at <https://www.utwente.nl/canvas>

Osiris: the student information system

In Osiris students can consult a wealth of information: the list of addresses, grades, the teaching catalogue with information on e.g. courses and minors, and information regarding tutors or study advisers.

Last but not least: via Osiris you have to register for courses and exams:
<https://osiris.utwente.nl/student/StartPagina.do>

Faculty's and programme's websites

The website of the Faculty of Behavioural, Management and Social Sciences (BMS) is: <http://www.utwente.nl/organisatie/structuur/faculteiten/bms/>

The intranet for staff and students is: <http://www.utwente.nl/bms/intranet/>

Also each programme has its own website. The (Intranet) website of the EST programme is: <http://www.utwente.nl/est/en/>

6.6 Rosters

The Faculty of Behavioural, Management and Social Sciences (BMS) operates with a term (semester) system, whereby each academic year is divided into two terms (semesters). Each term consists of two blocks (quartiles). A block is divided into seven weeks of lectures, a subsequent week of study in which as few lectures are planned as possible, and two exam weeks. For the rosters/timetables: <https://rooster.utwente.nl/> (and click there on <English> at the top of the page).

The rosters for a block will be online a couple of weeks prior to the start of each block.

6.7 Lectures

A typical lecture day has 9 periods. The 5th period, from 12.45 - 13.30 hrs. is the lunch break (where no lectures are scheduled).

1 st period:	08:45 - 09:30 hrs.
2 nd period:	09:45 - 10:30 hrs.
3 rd period:	10:45 - 11:30 hrs.
4 th period:	11:45 - 12:30 hrs.
5 th period = lunch break:	12:45 - 13:30 hrs.
6 th period:	13:45 - 14:30 hrs.

7 th period:	14:45 - 15:30 hrs.
8 th period:	15:45 - 16:30 hrs.
9 th period:	16:45 - 17:30 hrs.

The roster indicates how each course is taught. (Note: Officially speaking, we call a course a 'unit of study'. This term is also used in the Dutch Higher Education and Research Act (the so-called WHW)).

Types of lectures

In the roster you can see per course what type of lecture will be offered. There are four different kinds:

1. lectures (abbreviated HC = in Dutch: hoorcollege), whereby dominantly the lecturer presents a topic in oral form and the students listen and take notes;
2. seminars or workshops (abbreviated WC = in Dutch: werkcollege), characterised as interactive tutorials in which the students play an active role);
3. a combination of the two (abbreviated HW – in Dutch hoor-/werkcolleges); and
4. practicals.

During a lecture, a lecturer will clarify/illustrate and/or supplement the subject matter. Usually such lectures last for 90 minutes (2 * 45 minutes), with a short break. Seminars/Workshops are usually just as long but are more interactive by nature (students work in groups on assignments that help to digest the subject matter). Practical usually last an entire morning or afternoon (4 periods), during which students work either in groups or individually on a project or with a specific computer programme. Attending practicals is compulsory. Attending lectures or seminars is not compulsory, unless stipulated as such by the lecturer. If attendance is obligated, this will be announced on the concerned BlackBoard environment.

6.8 Enrolling in courses

Enrolment for the courses via Osiris

You must enrol for each unit of study (i.e. course) on:

- <https://osiris.utwente.nl/student/StartPagina.do>

Each course is listed into Osiris well in advance to allow you to register for it. You will need to register in time to be able seeing the course's details and to read optional announcements from the involved teacher prior to the actual start of the course. So, register in time and don't wait until the very last moment!

Should you not be able to register for a course yourself, inform your Educational Affairs Office (BOZ) as soon as possible, either by e-mail or by telephone. This will allow them to take action if necessary.

Once the registration period has ended, the BOZ staff will not be able to help you.

You will need an account to access the courses. Prior to the start of your studies at the University of Twente, the university's Department for Information Technology (ICTS) will

provide you with a username and password. The password will be the same as the one you originally received for accessing the UT network. You were informed about this in a letter.

If you are still having difficulties, contact the ICT Service Centre Helpdesk (ICT-S) (phone: 053 4895577). Only in case where enrolling in a course via Osiris is impossible, you may contact the Faculty's Canvas coordinator Huub Engbers:

- **h.t.engbers@utwente.nl**;
- **telephone: 053 4894122**;
- **room: Citadel H436.**

6.9 Exams (including – final – papers)

Compulsory registration for exams (Osiris)

If you want to sit an exam (or part of an exam), you need to register via Osiris. You can consult Osiris from 4 days prior to the date of the exam for the exact location of the exam.

- **Please note that if you are registered for a course via Osiris, you are automatically registered for the first (1st) attempt of the course's exam!**
- **In case you decide NOT to use this 1st attempt, you should de-register from the exam via Osiris! Deregister timely, i.e. till 1 day before the exam date (read: till 24:00h. of the day prior to the exam date).**
- **In case you do not pass the 1st attempt of an exam (or in case you did not use the 1st opportunity (de-registered!), you must register separately for the re-take (which is scheduled in the next block).
This can be done 40 till 14 days prior to the date of the scheduled re-take. After that date it is no longer possible to register. Being registered means entitlement to participation (on the condition that demands are met regarding your prior knowledge). Students who have registered may be confident that there are sufficient desks and chairs in the exam hall and sufficient copies of the exam.**

Enrolment Periods (2018-2019)

1st quartile	July 1, 2018 till September 2, 2018
2nd quartile	October 15, 2018 till November 11, 2018
3rd quartile	January 6, 2019 till January 31, 2019
4th quartile	March 24, 2019 till April 17, 2019

Check also: <https://www.utwente.nl/en/student-services/admission-enrolment/>

Thus:

- Registering is obligatory for all (also interim) exams, and will happen automatically (via Osiris course registration) for the 1st attempt of the exam during the block in which you registered for the course

- The registration period for re-exams must be done separately, and is open from 40 till 14 days before the actual date of a specific exam.
[Note: the exam schedule may be subject to changes. Therefore, please check the educational announcements, Canvas or the examination schedule in Osiris regularly].
- Once the registration period (40 till 14 days) for a re-take is closed the Educational Affairs Office can NOT help you anymore
- De-registering for an exam till 1 day prior to the exam

A check will take place on the basis of the Osiris list of participants whether students who have registered are actually eligible/authorised to sit for a specific exam. If a student is on the list that is not entitled to participate, the examiner(s) will be notified of this. All regulations concerning registration, cancellation and *force majeure* (i.e. circumstances beyond one's control) go via the Educational Affairs Office (BOZ) and **not** via the lecturer responsible for that specific exam.

Rules during the actual examination

Start exam	A written exam has a maximum duration of four hours and begins promptly at the scheduled time.
Arriving late	Late arrival means that one cannot participate in the exam. Make sure to be there timely
Aids	Desks may only hold materials that are absolutely necessary for you to complete the exam. So you are not allowed to use your notebook (unless stipulated otherwise).
Filling in the exam slip	In case exam slips are handed out before the session commences, please fill these in in capital/block letters. In many cases, assessment lists are used instead of exam slips. You will need to fill in your student number, name and initial(s), address, postal code and city/town, course name, course code, name(s) of lecturer(s) and the date of the exam. You must also name the programme in which you are registered. If you are registered with two programmes, then fill in the one that manages/is accountable for the result of this course.
Presence of exam monitor	An exam invigilator – usually a course lecturer – will be present during the exam. You must be able to show your student card upon request. All pages of the work handed in must bear your name, initials and student number in legible handwriting.
Going to the toilet	If you need to go to the toilet, you must ask for permission from the invigilator. Only one person may go at a time. During the exam, you may not contact anyone directly or indirectly, either inside or outside the examination room.

Rules after the examination

Period for marking exams	Except in instances of force majeure, exam results are announced within fifteen (15) working days after the examination. If the results are not known within one week before you are to re-sit an examination, you may request the Examination Board to arrange the possibility to re-sit
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	an exam at a later point in time. If you have been graded more than once for the same (part of an) exam, the highest grade applies.
Requesting to see your exam paper	In principle your exam paper remains in the possession of your lecturer.
Inspection of your exam	For a period of twenty (20) working days, starting on the day on which the results are announced, you may, upon request, inspect your own graded work. If the examiner decides that the nature of the work allows it, you will be entitled to make copies (costs of copy at your own expense).
Period of storage of exams	The examiner sees to it that written exams are kept for at least two years after the examination date.

Oral examinations

An examiner may decide to hold oral examinations at a time to be determined by the examiner or examiners in consultation with you. Normally this will be arranged within one month following completion of the course (holiday months not included). An oral examination will not exceed two hours. The examiner is allowed to examine more than one student simultaneously, provided none of the involved students raises objections. An oral examination is a public event unless the Examination Board or the examiner has decided otherwise, or the student raises objections against publicity.

Overview of grades

Via Osiris you can get an overview of e.g. all your exam marks or grades in a specific academic year. Once an exam has been marked and processed by the Educational Affairs Office (BOZ), the results are made known to you as soon as possible. If you passed a subject but you detect that the mark has not been processed in Osiris, please contact BOZ as soon as possible.

Resit exams

The programme offers to sit for an exam **once** per academic year at the end of the block/quartile during which the course was offered, with one 2nd chance to re-sit it during the exam period of the following block/quartile. For exams in the last (4th) block/quartile of the academic year, the programme offers you a resit opportunity before the end of July.

Note that a re-sit to improve your mark in general forfeits Cum Laude graduation

Period of validity of examination results

The validity of the examination results is five (5) years.

In case the final assessment of a course (unit of study) is composed of more than 1 element, than the grades of these partial exam elements are valid until the end of the subsequent academic year, counting from the moment the exam element started.

Note: in case divergent conditions of validity apply in a course, then the involved teacher will publish these special conditions prior to the start of the course on the concerned Canvas environment.

The periods of validity also apply to assignments or papers

With regard to the EST pre-Master's programme, additional conditions apply, namely the maximum period of enrolment for the pre-Master's programme is 1 year and during this period a student has a maximum of 2 chances per exam component.
See: chapter 4 of this programme guide

6.10 Student Charter

Just like all higher education institutes, the University of Twente has its own Student Charter. This has its statutory basis in Art. 7.59 of the Higher Education and Research Act (WHW). The charter is law-making, which means that you can invoke the Student Charter in case of problems or conflicts. The Charter's is kept up to date and is available online via the UT's website: <https://www.utwente.nl/en/ces/sacc/regulations/charter.pdf>
There is mentioned how to get a printed version of the charter.

The programme-specific part of the Student Charter (OSS), which includes the Education and Examination Regulations (In Dutch: Onderwijs en Examenregeling (OER)), comprises a general section applicable to all Behavioural Sciences Master's programmes and a section with appendices drafted for each individual programme. The Education and Examination Regulations can be found on <http://www.utwente.nl/organisatie/structuur/faculteiten/bms/onderwijs/onderwijs-en-examenreglementen/>

6.11 Computer facilities

The University of Twente uses the so-called "**Bring your own device**" concept. This means that you will use your own notebook/laptop to get access to the computer facilities of the university through a terminal server, by logging in using the wireless network [Eduroam](#).

This *Bring your own device* concept does mean that you need to have a notebook/laptop during your studies at the University of Twente.

"What applies if..."

- "I do not have a notebook": In this case, you will need to buy a notebook prior to your studies at the University of Twente. (A notebook using Windows is most easy to use with UT applications). Please, visit the website of the university Notebook Service Centre (<http://www.utwente.nl/lisa/nsc/>) for two very attractive notebook offers using Windows 10. Both note books are suitable for your study activities at the university (also, read more info below on "Notebook arrangement for UT students").
- "I do have a notebook". In case you already have a notebook, it is advised that the notebook is no older than 3 years and uses Windows 7, 8 or 10.
- "I do have a MacBook or another type of notebook": You can very well use a MacBook or another type of notebook, but in some case you may have to use special

Windows software. In many cases, you can use the special Windows software using the terminal server. On your notebook, you use the programme Remote Desktop to contact the terminal server, which provides you access to the Windows programmes. Using your notebook, you do give the input and you are provided with the output of the Windows programmes.

How to download computer programmes on your notebook?

You can download various software programmes on your personal notebook via the Notebook Service Center with your UT ICT-account (<http://www.utwente.nl/lisa/nsc/>).

Various manuals are available through the site LISA: University Library, ICT Services & Archive (<http://www.utwente.nl/lisa/>)

For access to the university's library (housed in building Vrijhof), see their website:

<http://www.utwente.nl/ub/en/>

7. Student support and counselling services

7.1 Study guidance

During your (pre-M or M-) EST programme you can count on support and monitoring from the programme staff (study adviser and programme coordinator). The study adviser offers support with your individual plans for both your pre-Master's and/or Master's study trajectory. With the UT also offering additional student supervision and counselling, you can, if necessary, go to the Student Psychologists Office (BSP) and its student counsellors (see section 7.2 of this guide)

Yvonne Luyten–de Thouars

As study adviser, Yvonne Luyten–de Thouars offers advice on study-related issues and she can inform you of practical matters concerning your study, such as examination regulations and legal status. You may consult her also on your personal problems. You may e.g. discuss with her your experiences, complaints, study choice, planning, delay, graduation support, exemptions, etc. If necessary, she can refer you to other support bodies in or outside the university.

Contact:

Cubicus, Room C110

E-mail: y.c.h.luyten-dethouars@utwente.nl

Phone: 053 489 1117

Jan Nelissen

As programme co-ordinator, Jan Nelissen is responsible for the organisational, procedural and intrinsic coordination and harmonisation of the pre-M and M-EST programmes. If you have a complaint or a question about the programme or certain subjects, the programme coordinator is the first person to see.

Contact:

Cubicus, Room C104

E-mail: j.m.j.nelissen@utwente.nl

Phone: 053 489 3588

Student Service Staff members

Huub Engbers is the EST contact at the Educational Affairs Office. He is responsible for providing information to students and all administrative tasks related to the programme.

Contact:

Huub Engbers (Mondays, Tuesdays, Thursdays, Fridays: 10:00-14:00h)

Citadel, Room H436

E-mail: h.t.engbers@utwente.nl

Phone: 053 489 4122

For International Students we have our own *Office for International Affairs!*

You may best contact Ms. Leonie ten Have MSc via:

internationalstudentsupport-bms@utwente.nl or

l.s.tenhave@utwente.nl

7.2 Additional UT student support

Various services have been organised for students and they have been combined to form the Student and Educational Service Centre. Accommodated at the Student Services Desk, the most important services are the following:

TCP Language Centre

The TCP Language Centre offers professional language support in English, Dutch and Spanish to everyone at the University of Twente: students, PhDs, academic staff and support staff. Improving your English language skills will help you perform better in your work or study. All EST students who are non-native English speakers are advised to use the support of the TCP language centre for improving their English proficiency:

<https://www.utwente.nl/en/ces/tcp-language-centre/>

Student Services Desk

The Student Services Desk provides all kind of services. You can go there to have your digital passport photograph taken for your student card, to enrol, to register or to cancel enrolment, or to ask for a transcript of your records. You will find the Student Services Desk in the Vrijhof, room 239. See also: <https://www.utwente.nl/en/student-services/>

Opening hours: Monday - Friday from 10:00 – 16:00h.

You can contact the Student Information Desk as well via 053 489 2124.

University's Student Affairs, Coaching & Counselling (SACC)

The Student Affairs, Coaching & Counselling service is in charge of individual and collective care for and supervision of UT students at the co-ordinating level, supplementary to the programme's obligations of supporting their own students in this area. Student Affairs,

Coaching & Counselling Desk provides such services as the student counsellors, student psychologists, and various training courses (like: 'self-management', graduating, job interviews). For further information, go to: <http://www.utwente.nl/ces/sacc/en/>

Student counsellors

The UT student counsellors are:

- Ms. Caroline van Dijken LL.M., head SACC c.vandijken@utwente.nl
- Ms. Lucelle Dankbaar M.A. l.m.l.t.dankbaar@utwente.nl
- Ms. Minke Klomp MSc m.h.a.klomp@utwente.nl
- Ms. Hemo Oumenad M.A., career counsellor r.b.m.oumenad@utwente.nl
- Ms. Carla Bruynel, diversity coordinator c.j.m.bruynel@utwente.nl

You may contact them for questions on financial support (in case of study delay due to exceptional circumstances), changing your studies, admission exams, (general) complaints procedures, studying with a handicap, personal circumstances, etc.

Student psychologists

The UT student psychologists are:

- Ms. Marjolein Engbers MSc
- Mr. Hans Feiertag MSc
- Ms. Annemarie Klanderman MSc
- Ms. Caroline de Koning MSc
- Ms. Renée Zomerdijk MSc

You can go to the student psychologist if you need to talk about a personal problem, such as an issue with your parents, friends or fellow students, or about anxieties or when you are feeling down or lost. You do not need a referral to see a student psychologist; you can make the appointment yourself. You can register for a first appointment with a student psychologist by filling out their online application form, after which you will be contacted through your student mail.

For appointments with student counsellor or psychologist:

Contact (053 489) 2035 / E-mail: sacc@utwente.nl

Office hours secretary SACC:

Monday-Thursday: 8:30 – 12:30 and 13:00 – 17:00

Friday: 8.30 - 17.00

The UT student counsellors and psychologists are located in building 'Vrijhof' 3rd floor.
Information desk Student Affairs, Coaching & Counselling, Vrijhof 3rd floor (room 311)

SACC training courses

Have a look on: <https://www.utwente.nl/ces/sacc/en/personal-development/> to see what courses are offered by SACC.

8. Quality assurance

The Faculty of Behavioural, Management and Social Sciences (BMS) sets great store by the quality of its education. Students are generally appreciative of the study programmes offered by the faculty, yet critical of certain specific aspects. The programmes are extremely responsive to this and do their utmost to improve quality.

Quality education requires the firm commitment of lecturers and students as well as proper communication. The core of the internal quality assurance system is formed by the course evaluations, and the annual systematic feedback from students. The quality cycle comprises the following internal quality assurance instruments.

8.1 Internal quality assurance

Evaluation of the courses

When you have completed a course, you are supposed to give our opinion on it by means of an anonymous survey. The lecturer will integrate the results of this survey in preparing for the next cycle of the course and curriculum. Your contribution as a student is essential, which is why participation in evaluations is compulsory.

Both the lecturer, the department chair (to which the lecturer is accountable) and the programme's academic chair receive the results of the course evaluations, which, if necessary, also can be discussed by the Programme Committee or Examination Board.

Twice per year the results of the course evaluation are presented to and discussed with the students.

Student Satisfaction Survey

Each year the programme conducts an internal student satisfaction survey on the students' assessment of all kinds of education-related issues, such as the content of the curriculum, the quality of the lecturers, the quality of the teaching material, the communication between programme and student, the relationship with the labour market, the options available in the curriculum. This survey is an important source of information to faculty management and may instigate amending the curriculum. Ultimately the faculty wishes to score above average on all points. The results of this survey are discussed in the term evaluations, on the Programme Committee and, if necessary, on the Examination Board.

Guaranteeing the quality of the lecturers

The UT follows the rule that both novice and newly appointed lecturers must pass the Basic Qualification in Education within two years. For more experienced lecturers a Task-oriented Qualification in Education is currently being developed, which on the basis of their experience and expertise will enable lecturers to develop further. Furthermore, the programme management always discusses the results of the course evaluations with the lecturer(s) concerned so that they are aware of which parts of the instruction according to students can be improved.

Internal and external evaluation

Once every five years, as with all university programmes, the programme is evaluated by an external committee (see: section 8.3). Hence this is called the educational review. Prior to this, the programme writes an internal evaluation. Items to be evaluated are e.g. the objective of the programme, the curriculum, the deployment of staff, the facilities, the internal quality assurance and the testing policy, and academic achievements of the students.

More information can be found on:

<https://www.utwente.nl/en/organization/structure/faculties/bms/education/quality-assurance-map/>

8.2 Consultative committees

Examination Board

The Examination Board is responsible for all aspects of monitoring and assessing the instruction, e.g. the procedures during exams, the quality of the exams and the regulations with which both students and lecturers must comply. The Examination Board also assesses applications for a personal study trajectory and the evaluation of requests for exemption from exam components during your studies (exams, practicals etc.). The Examination Board consists of three lecturers and is supported by a registrar. Moreover the study adviser and the programme coordinator advise the Examination Board. The Examination Board meets regularly (approx. 10 times per year).

If you have a request to make, you will need to submit this at least one week prior to the date of the meeting to BMS-ExamenCommissieBMS@utwente.nl

More information on the Examination Board and its procedures can be found at their website: <https://www.utwente.nl/bms/examboard/>

Programme Committee

EST has its own Programme Committee. The Programme Committee occupies itself with all issues directly related to the set-up and quality of the instruction, such as advising where necessary to make alterations to the course. The programme chair and the programme coordinator are involved as adviser. In accordance with the law, the Programme Committee consists of students and staff. On EST's Programme Committee there are five lecturers and five students. The members of both the Programme Committee and the Examination Board are appointed by the Dean. The Programme Committee advises the programme staff and the Dean, the latter particularly with regard to educational affairs that are addressed in the Faculty Council, such as the Education and Examination Regulations (in Dutch: the OER).

Professional Committee

The professional committee (in Dutch: Werkveldcommissie) advises the programme chair on all educational matters, especially from the perspective of relevance for the job market. The committee reviews the entire curriculum, including its objectives, didactical architecture, and outcomes.

8.3 External quality instruments

Educational review

With its accreditation the NVAO (the Dutch-Flemish Accreditation Organisation) gives official approval to a programme that has stated that it has met all specified quality requirements. In connection with this, the NVAO reviews each programme in the Netherlands and Flanders once every five years. Both in the Netherlands and in Flanders, an accreditation is a condition for the government's funding/financing of a Bachelor's or Master's degree programme and for the entitlement to award recognised/validated diplomas. In the Netherlands it is also a prerequisite for issuing student grants and loans. The Master's degree programme EST has been re-accredited in Spring 2017 and the conclusion was that the programme met all the criteria.

Part D: Course descriptions

- D1: Master's degree courses (alphabetically ordered)
- D2: pre-M courses (alphabetically ordered)

D1: Master's degree courses (alphabetically ordered)

Assessing, Monitoring and Improving Student and School Performance (201300001)

In order to improve the performance of students, teachers and schools, we need to know what to improve. By assessing and monitoring performance, areas for improvement can be identified.

In this course, we will focus on:

- How to measure student performance (how to construct a good test, how to evaluate the quality of tests, the difference between classical test theory and item response theory)
- How you can measure teaching quality (by means of classroom observations and student questionnaires)
- How to look at school performance (value-added and school inspectorate)
- Furthermore, when assessing performance multiple times, it is possible to monitor this performance. We will therefore pay attention to:
 - Student monitoring systems
 - At all levels, these assessments can be used to improve performance, by providing feedback, therefore we will also focus on:
 - What it takes to use a student monitoring system
 - How to implement assessment for learning
 - What it takes to benefit from feedback

During the course, we will provide you with examples from different projects that focus on supporting teachers and schools in the use of assessment data and other types of data, such as the Focus project, MATCH-project and the data team project.

You will apply what you have learned in several formative assignments, and demonstrate your knowledge in a final written exam. The final grade of the course is determined by, and equal to, the grade for the exam.

At the end of the course students have knowledge of and insight into:

- The characteristics of good tests.
- How to construct a good test.
- The main characteristics of classical test theory and item response theory.
- The tools for and problems associated with monitoring educational effectiveness at the class and school level.
- The factors influencing the impact of assessments.
- The type of support teachers and schools need in the use of assessment data and other data.

Designing Learning & Performance Support (191970340)

In this course students engage in a challenging design task, namely to create effective instructions that enable people to do things quickly. Examples of suitable design topics are instructions on: using a cash register, web searching and on designing online help. Students can select their own topic and context for this task.

Just as creating job-aids, students will develop instructions that afford people to self-regulate their actions. Students will be asked to adopt a systematic approach and report about the progress. A vital part of the *systematicity* comes from theories. The leading design theory will be: *minimalism*. Special attention will also be given to designing instructions that motivate people. Other models that will be discussed are: the *4C model* and *CRAP*.

During seminars students will be introduced to the three main components of the course,

namely: (a) theories & design guidelines, (b) exercises, and (c) student progress reports. Also, regular individual meetings with the instructor are expected.

During the final session the students' products are displayed and the student's design trajectories are presented and discussed. Students work in pairs on the design task. There should be a clear division of roles in producing the products as well as in completing the design report.

Examination and assessment:

During the lectures and private meetings students will receive feedback on their progress in creating the product and the design report. The final grade will depend on these two documents. Students present their products in a brief presentation.

At the end of the course the student is able to:

- (re)design a document in a systematic fashion.
- complete a design report that captures the main design phases, strategies and outcomes.

Educational Measurement (201500149)

The course gives an overview of the state-of-the-art in educational measurement methodology. Students will get to know the professional field of educational measurement including the contemporary major interest and innovations. The course will be taught by leading experts in the area of Educational Measurement. Specialists from the educational measurement institute Cito and from universities will each address one of five guest lectures. For each of these topics, students are expected to read a number of scientific papers. After each lecture, an assignment has to be completed. Thereafter, students will choose one topic for the final assignment.

Examination and assessment:

The grade for this course is equal to the score of the final assignment.

After taking this course students are able to understand the major principals and innovations in educational measurement.

Students:

- Will be able to design and implement a computerized adaptive test, and can interpret the scores (topic 1)
- Are familiar with the most important methods of standard setting, both classical methods for multiple-choice tests (e.g., Angoff and Nedelsky methods) and methods for complex performance-based assessments, such as, the extended Angoff method as well as its variations (topic 2).
- Will be able to apply these methods in a practical context (topic 2).
- Understand how to model and analyze fraud detection (topic 3)
- Gain insight into the principles of systematic design of assessment of and for learning, which in turn aid valid decisions about the learner (topic 4).
- Are able to review an existing test design by applying the principles taken from the ECD sub models as evaluative criteria (topic 4).
- Will be able to apply statistical models to analyze learning growth (topic 5)

Global Talent Management (201500086)

Did you know that mistakes in hiring one employee costs organisations about 200,000 EUR per year? Did you know that employers today receive an average of 101 to 150 applications for each job opening? And – did you know that only 26 to 50 percent of those applicants meet the minimum requirements for the positions to which they apply?

This means that to avoid wrong on boarding and to be successful, organisations need to

develop, attract and retain real talents. The process of finding the needle in the haystack becomes more difficult, with more hay to search through, and too few needles. So how can organisations overcome these challenges to ensure they can more easily review candidates' credentials and hire the best people?

Interested in such challenges? The Global Talent Management (GTM) course will provide you with knowledge and skills to find your way in positioning yourself as a talent and learning how to manage global talents.

During the course you will:

- Take an exclusive opportunity by joining the GTM course that is unique among other Dutch universities in a combination of its content and teaching methods
- Learn to position yourself as a talent on the demanding modern labour market
- Broaden your knowledge about management of talents in 22 real-life Multinational Corporations (e.g. Baker & McKenzie, Bertelsmann AG, HCL Technologies)
- Get familiar with the latest works of the GTM "great minds" (e.g. Prof. Brewster from the Henley Business School, Prof. Schuller from the Rutgers University, Prof. Collins from University of Central Lancashire)
- Continuously learn to apply theoretical GTM concepts to people, business and society
- Train your skills that prepare you to be a business leader
- Enjoy a carefully balanced study workload, might you also choose for the course Strategic HR Analytics
- Work in small teams – three persons per group – to ensure effective group work and learning.

After completing this course master students are expected to be able to:

- *Identify* different definitions, views and perspectives on Global Talent Management (GTM);
- *Classify and discuss* GTM challenges for countries and for MNCs;
- *Explain* the conceptual and empirical power of (neo)institutional, configurations, and culturalist theoretical perspectives in the GTM research and practice;
- *Explain* differences and similarities in GTM in countries and MNCs from (neo)institutional, culturalist, and configurations theoretical perspectives
- *Understand and value* cultural differences, cross-cultural communication, managing cross-cultural teams, in GTM in MNCs
- *Analyse* labour relations and talent management practices in different parts of the world and their consequences for corporate HR functions;
- *Design* the strategic plan for GTM in MNCs.

HRD & Technology in a Live Context (201600126)

The aim is to produce an HRD advice report in a real-life context, based on a specific request from an organization, firm or company. The research and consultancy processes that you will apply require an integration of scientific theories and research approaches in a real-life context. This does not only require academic skills but also the competences to act in a business environment, negotiating on facilitating and inhibiting factors, and gaining support at the managerial, operational and individual levels.

In this course, students work in teams on real HRD cases from organizations. These cases will focus on technology-enhanced learning from an HRD perspective, for example the implementation of blended learning in the workplace, the use of social media for knowledge sharing within the organization, assessment and/or evaluation of e-learning trajectories, and pros and cons of using Massive Open Online Courses (MOOCs).

The aim is to provide the companies with an advice report. In this report, the latest and/or most relevant insights from scientific research and theories are presented. But it also provides an overview of best practices in other organizations or contexts, and reviews also information professional, non-scientific literature. All these insights will be presented in the advice report, along with critical discussion and practical recommendations.

The course starts with an introduction to HRD, technology, consultancy and some HRD intervention skills necessary to complete the course. The teams will visit a company regularly and work in a group on a tailor-made final product and a justification and reflection report. This course offers a unique chance to apply theories and research methodology in HRD contexts and offers relevant preparation for the Final Project. Preparing the advice includes: analysis of the initial questions, reports on field research, design of interventions, supporting materials, instructions for practitioners, evaluation methodology, evidence of effects; furthermore reflections on the problem, context, design, research and consultancy approach, theoretical underpinning and effects, and the added value of HRD in this case.

Examination and assessment:

The course will be assessed and the grade will be determined on the basis of the quality of the advice report, a presentation, and an individual reflection assignment.

At the end of the course, students are able to:

- work on the basis of a real-life problem about technology in an HRD context;
- to apply academic and non-academic competences in the HRD real-live consultancy process;
- to find and critically discuss the latest and/or most relevant scientific insights related to the given problem;
- to find and critically discuss the latest and/or most relevant insights or best practices related to the given problem from non-academic sources;
- to select, organize, and integrate the above mentioned information from scientific and non-scientific sources into a coherent, consistent, and meaningful report;
- to present this final product;
- to critically reflect on the presented product.

HRM and Innovation (201500087)

Innovation is the cornerstone of many economies and societies. Furthermore, being innovative is crucial for businesses to gain a competitive advantage in the contemporary economy. Therefore, firms are all looking for the holy grail of innovation by searching for means to create new products and services before competitors even thought of it. Since employees are the ones who create new ideas and translate them into innovative products/services, both researchers and practitioners agree that employees are at the root of a firm's innovation success. As such, they are seeking for (new) human resource management initiatives that foster innovation at different levels in organisations. One example is Google's famous "20 percent projects" that allow employees to spend 20% of their time on projects of their own interests. This way, Google taps into the knowledge, skills, and abilities of its employees and facilitates the development of new ideas. Given the important role of employees in innovation processes, it is a necessity for HR and line managers to know how to stimulate innovative employee behaviours and how to manage people in organisations with the use of HRM practices.

In this course, we invite students to engage in the quest to better understand how firms can make their workforces more innovative with the use of human resource management. As such, this course challenges you to think about questions such as: how does training lead to more and better innovative ideas; what type of recruitment and selection practices do organisations need to attract innovative talent; or, how can employees be motivated to create new ideas? Asking these questions yet only contributes to improving the innovation performance of firms if one is capable of findings answers to them and turning those into practical recommendations. Therefore, besides providing knowledge on HRM and innovation interfaces, this course puts particular emphasis on helping students to improve their skills to analyse quantitative and qualitative data for answering research questions. Ultimately, this prepares them for the data analysis stage in their master thesis research and enables them to provide recommendations on how real-life firms can improve their innovation performance.

In this course, we discuss the reciprocal relationships between human resource management, such as selection, training or development actions, and innovation. On the one hand, it focuses on how HRM and employee attributes affect different forms of innovation and on the other, how different organisational actors innovate HRM. In doing so, it challenges students to think about questions like which HRM practices make organisations ambidextrous, why does HRM affect performance (e.g. by building strong organisational climates, advancing knowledge resources or by developing strong social exchange relations with employees), does creativity require other HRM instruments than idea implementation, and in which way do employees gear changes in HRM practices? Ultimately, this trains students to empirically examine the relationship between HRM and innovation. In total, seven topics will be discussed:

- The effect of individual versus bundles of HRM practices on innovation performance
- HRM and ambidexterity
- HRM and innovative work behaviour of employees
- Innovator role adoption
- Line manager behaviour and climate for innovation
- Employee driven innovations and changes in HRM systems
- Conceptualizing, operationalizing, and measuring theoretical concepts in HRM – innovation research

After completing this course master students are expected to be able to:

- Critically reflect on the utility of social exchange theory, intellectual capital theory and climate theories to explain the relationship between human resource management and different forms of innovation;
- Discuss the ways in which organisations can stimulate the innovative work behaviour of employees;
- Discuss the ways in which organisations and employees innovate human resource management systems;
- Examine, both qualitatively and quantitatively, the influence of human resource management systems on different forms of innovation;
- Discuss the practical and theoretical implications of research results on HRM and innovation to provide recommendations for future research and practice.

HRM and Technology Design (201500088)

We are certain – you know that ideally, organisations adopt HR Information Technologies (hereinafter – technologies) and HR practices to power key HRM and business outcomes. You also know that when organisations make the business case for more a new IT for HRM, it is built on efficiencies and cost savings. As money and demand comes to HRM and technology, so do new ideas and smart people. The result—we see one of the most turbulent times ever in the field of HRM. Smart entrepreneurs can now build new tools with very little money, so the number of ground-breaking and often disruptive new ideas is growing. However, we question whether you know that HR technology adoption can not only lower costs (for example, moving to HR Shared Services or adopting an HR managers self-service), but it can also impact sales and other financial metrics through improving various HRM processes through automation, adopting business intelligence solutions, and even adopting social media tools when used strategically.

Once “paper-based HR practices,” the many of them are now online and they should be easy to do, right in the middle of work. We don’t even want to “log into the HR system”, we expect they must be so integrated that they can be done as part of daily HR routines. Gamification, datafication, sensing, crowdsourcing, network recruiting – this is the language of modern HR professionals.

So, how do we keep up and why should you care? The answer is simple – HRM and technology landscape is now more than a \$15 billion market in software alone (Bloomberg, 2014), and it is exploding with growth and innovation. Did you know that organisations that provide managers with direct access to technologies for making

decisions about their workforce, significantly outperform those without by 10% higher revenue per employee, and 37% higher profit per employee (CedarCrestone, 2014)?

While changing organisation type and the structure of the HRM function require the strategic support of the entire organisation, we think those involved in the adoption of HR technologies can achieve efficiencies and become more innovative in the organisation with their approach to HR technologies and thereby help achieve higher level business outcomes.

Interested in such challenges? The course HRM and Technology Design will provide you with knowledge and skills to find your way in positioning yourself in the rapidly developing labour market and demands in integrative analytical skills in the field of HR and Technology.

You will join this unique course and :

- Benefit from the in-house rooted research expertise; and will be introduced to international leading scholars in the field of HRM & IT as the Dutch research on HRM and IT (such as Electronic HRM, HR Shared Service Centres and New Ways of Working) was born in the University of Twente
- Enjoy the balanced workload with the parallel HRM course “HRM and Innovation” might you choose for the HRM profile of MSc BA
- Value the latest developments in the field of HRM and Information Technologies, and their application to real life HRM practice
- Get familiar with the latest works of the HRM and Technologies “great minds” (e.g., Prof .Tansley from the Nottingham Trent University UK, Prof. Strohmeier from the Saarland University Germany)
- Learn to re-design the architecture of the HRM function in a real life company
- Train your skills to become a multidisciplinary project manager for the implementation of IT changes in organisations
- Conduct small projects in cooperation with real life companies and exercising skills to design business solutions
- Enjoy organizing a symposium for companies and offer them business solutions.
- Work in small teams – three persons per group – to ensure effective group work and learning.

After completing this course master students are expected to be able to:

- Discuss the latest developments in the practical and academic fields of the HRM function, job design, and e-HRM; and their contexts;
- Explain the latest developments and the conceptual and empirical power of Transaction Cost Analysis, Resource Based View and Theory of Planned Behaviour theoretical perspectives to critically reflect on the HRM function, HRM architecture and jobs design;
- Analyse HR(M) architecture for specific external and internal environmental conditions;
- Assess the effectiveness of the HRM architecture and function for business performance;
- (Re-)design the HRM function in a real life organisation, taken into account the external and internal contexts

Innovative and Technology-based Learning Environments (201400002)

During 8 lectures of 2 hours, students will learn about designing innovative technology-based learning environments. The first part of each lecture focuses on theory and design principles that can be applied in the second part of each lecture. Several guest lectures will be given by experts from the field of psychology, educational science, and instructional technology.

At the end of the course, the student has knowledge and insight in:

- main theories of learning that are relevant to innovative technology-based learning, such as Mayer’s cognitive theory of multimedia learning and cognitive load theory;
- theories and research into applications and elements of technology-based learning, such as computer simulations and virtual or remote labs, instructional videos, serious games and gamification, and computer-supported collaborative learning;

Furthermore, at the end of this course, the student is able to:

- use scientific theories and empirical research to make deliberate design decisions for technology-based instructional elements, such as computer simulations and virtual or remote labs, instructional videos, serious games and gamification, and computer-supported collaborative learning.
- create a technology-based learning environment (using Go-Lab and Graasp).

To finish this course, students work in small teams of 4 members. Each team will perform a needs assessment, design and build an online lesson in a technology-based learning environment for primary, secondary, or higher education (no programming skills necessary), and conduct a pilot study in which the lesson is evaluated. The teams have to write a report in which they discuss the rationales behind their design decisions from the perspective of theory and empirical research findings. At the end of the course, the teams have the opportunity to publish the online lessons they created, so they can be used by teachers throughout the world

Leadership and Organisational Change (201200032)

This course consists of a series of five lectures combined with two company visits. The course deals with different theoretical perspectives and research approaches in the fields of leadership and organizational change. Both leadership and organizational change are of critical importance to the functioning of organizations. Leadership is important, for example, in setting/guiding organizations' policy and practice and in influencing the well-being and professional development of employees. Moreover, organizational change is (or can be) required, for example, to keep track of technological innovations, implement new policy/regulations (e.g., budget cuts, environmental demands), and to improve the functioning of the organization. Of course, attention will also be paid to the relation between leadership and organizational change, as leadership plays an active role in achieving organizational change. Examples of concepts that will be covered in this course are: transformational leadership, distributed leadership, capacity building, organizational routines, and organizational change. Moreover, we will pay attention to leadership and change hypes, and discuss the (non)sense of such hypes.

At the end of the course, students have knowledge about and insight into:

- theories and models about leadership and organizational change,
- the relationship between leadership and organizational change

At the end of the course, students are able:

- to analyze cases and apply the appropriate theories/models about leadership and organizational change on these cases.
- to analyze and evaluate a leadership or change hype and judge the (non)sense of this hype.

To assess whether the goals and objectives are met, two components are used: a written exam with open and closed ended questions, and a group assignment (writing a short paper).

Learning and Instruction (192914040)

This course discusses the background, design and effectiveness of multimedia learning. Multimedia designs often depart from the theoretical assumptions that learning is more effectively supported when: (1) people use a dual channel (text and picture) approach, (2) short term memory limitations are considered, and (3) active processing is encouraged. These assumptions have led to a large set of instructional principles for the construction of multimedia learning materials. The course will discuss design principles that are involved in arranging for inquiry learning and learning from simulations, and learning from worked

examples or games, among others.

At the end of the course students should have knowledge on:

- The theoretical foundations of multimedia learning
- Basic principles of constructing for multimedia learning
- Advanced principles of constructing for multimedia learning
- The effectiveness of specific designs for multimedia learning

Regulation and Facilitation of Workplace Learning (201200031)

This course deals with the variation in regulation and facilitation of workplace learning. This may vary from formal training courses to self-directed learning. Central in this course is how you can facilitate diverse ways of learning at the workplace. How do you create a good learning climate? How do you make employees self-responsible for their own learning and how can you manage this? Which factors inhibit and stimulate learning? What are roles of others (mentoring, coaching, and peer support) in this? In order to answer these questions, we will discuss a large variation of workplace learning theories.

The course will start with some introductory lectures. During the course students will interview an HRD-manager from a company about their corporate curriculum and analyse this case by making use of various workplace learning theories. Half way the course a take home exam will be given. The final assignment will consist of an analysis and evaluation of a corporate curriculum, resulting in an advice report on how to optimize this curriculum.

Examination and assessment:

The course assessment consists of two parts.

The first part is an individual take home exam consisting of open answer questions.

The second part is a group assignment (in pairs) for which you have to write an advice report based on an interview with an HRD-manager.

The exam counts for 40% and the assignment for 60% of your grade. The average of both exams need to be at least "sufficient" (≥ 5.5) to pass this course.

At the end of the course, students have knowledge on and insight into:

- different theories of WPL and relations between them,
- factors that influence workplace learning,
- advantages and disadvantages of various workplace learning theories for practice.

At the end of the course, students are able:

- to describe advantages and disadvantages of different ways of supporting and regulating learning at the workplace,
- to describe factors which influence the learning climate,
- to describe relations between learning theories and ways to facilitate WPL,
- to analyse and evaluate the quality of a corporate curriculum in relation to theory,
- find out alternatives to optimize a corporate curriculum in relation to theory,
- to write an advice on how to optimize a corporate curriculum in an organisation..

Research Proposal EST (201200035)

This course prepares for the M-EST programme's Final Project. The following aspects will be addressed:

- Defining the *purpose* and the *key concepts* of the research, constructing and discussing a *conceptual model*, and formulating scientifically relevant *research questions* based on a review of the literature.
- Choosing and justifying an adequate *method of data gathering* and *data analysis* based on the purpose of the research and the research questions through separate

structured assignments

- *Writing* the several sections of a research proposal (introduction, conceptual framework, method, etc.) through separate structured assignments
- Reviewing and evaluating the *scientific quality* of the several sections and the *consistency* of the written research proposal by means of assessment rubrics and formative feedback

The course is scheduled twice a year, namely in quartile (1A and) 1B (September enrolment) and quartile (2A and) 2B (February enrolment).

Instructional modes:

Regular plenary sessions:

- Presentations on possible or available final projects.
- Lectures focused on the design and the writing of a research proposal (see content of the course). These lectures will also address other factors, such as information and publication skills, ethics, etc.
- Workshops in which students provide and gain feedback on their assignments. In addition, the students collaborate in small communities on their research plan and research proposal based on joint research interests

The students write a research proposal in relation to their Final Project. The research proposal will be assessed by means of assessment rubrics. Both the first or second supervisor and the teacher of this course function as assessor: The first or second supervisor will assess the scientific quality of the research proposal (e.g., scientific relevance, conceptual framework, adequate methods, etc.) and the teacher of this course will assess the technical aspects of the research proposal (e.g., writing, consistency, planning and feasibility). In order to pass the course, both the various assignments and the research proposal should be sufficient.

Assessment:

Throughout the course the student makes various assignments, that are conditional for passing the course. During, and as a conclusion of the course, the student will write a research proposal in relation to his/her Final Project. In order to pass the course, both the various assignments should be sufficient and the research proposal should be graded a 5.5 or higher. The course grade is only determined by, so the same as, the grade for the research proposal.

At the end of the course, students have knowledge on and insight into:

- how to design a research plan/project
- how to write a research proposal

At the end of the course, students are able:

- to formulate and design a research plan/project
- to write a research proposal

Teacher Learning and Development (201200027)

The quality of teachers and teaching is crucial for student learning, but varies both between and within schools. But, what actually is 'good teaching'? In this course, we explore different kinds of knowledge and skills that are considered crucial for high quality teaching. We address different forms of professional development (PD), important conditions for teacher learning and change, and pay attention to the evaluation of the effectiveness of these interventions. At the end of this course, students know why teacher professional development is important, what to take into account when designing PD trajectories, what is known about the effectiveness of various approaches to PD, and what to consider when evaluating this effectiveness

Assessment and examination:

The assessment in this course consists of two parts, that both need to be scored sufficient (≥ 5.5) to pass the course:

- An individual take home exam in which the student evaluates a PD trajectory (30% of the final grade)
- A group assignment in which the students operationalize an aspect of teaching quality and in which they design a PD trajectory to improve this (70% of the final grade).

At the end of the course, students have knowledge of and insight into:

- aspects of teachers' knowledge and skills which are relevant for quality teaching and sustainable educational reform.
- Why teacher professional development is important.
- How the teaching quality of teachers can be evaluated by means of a variety of instruments.

At the end of the course, students are able to:

- Explain how professional development characteristics will affect teacher quality.
- Explain what school conditions need to be in place, to improve the effectiveness of the professional development process.
- Evaluate the quality of a professional development trajectory with regard to guidelines for effective Professional Development (PD).
- Design a teacher professional development trajectory based on all that was learned in the course.

Team Learning at Work (201500010)

In the field of Human Resource Development the study of team learning in the workplace is relatively new. In this course, you will acquire knowledge on which conditions facilitate team learning, how to enhance teamwork and collaboration, and how to maintain sustainable levels of performance in teams through continuous learning and improvement. A lot of attention has been devoted to learning at the individual and organizational level. However, HRD practitioners increasingly begin to recognize that teams form the heart of professional learning in organizations today. Teams know more than the sum of their individuals. Yet, many teams are not designed and structured to work effectively and enhance collective learning. Consequently, HRD practitioners and organizational advisors try to enhance team potential using continuous improvement and team learning practices. Learning teams can flexibly adapt to changes, can be more client-oriented, and can produce innovative and creative products. But how do teams become learning teams? After completion of this course, you will be able to effectively design, analyze and evaluate team learning and continuous improvement processes, using the tools, insights and practices that are offered in this course.

The course will include various guest lectures that will be provided by content experts and professional HRD practitioners covering the most important theories and models of team learning. Here we discuss topics such as "team learning processes," "distributed leadership in relation to team learning," and "team learning interventions." In this course you will apply team learning theory to practice. Based on an area of your own interest, you will focus on how team learning works in a specific context (e.g., healthcare, education, public sector, virtual, high-tech).

Assessment and examination:

The course assessment consists of a group paper (max. 2 students per team). The aim of this assessment is to study the value of the applicability of the learned theories and models in a working context. Hence, the group paper serves to deepen the knowledge of these theories. When graded as "insufficient" there is one additional chance to re-write the paper. The group paper needs to be at least "sufficient" (≥ 5.5) to pass this course

At the end of the course, students have knowledge on and insight into:

- The most important theories and models about team learning and their interconnectedness
- How the theories and models are helpful to understand, evaluate and optimize team learning at work
- How team learning processes work across different professional contexts (e.g., healthcare, education, public sector, high-tech)

At the end of the course, students are able to:

- Describe and compare models and theories about team learning
- Describe antecedents that foster or hinder team learning
- Describe outcomes of team learning that are relevant for HRD practices
- Apply team learning theories to different professional contexts
- Analyse and evaluate the quality of team learning processes in different professional contexts
- Generate an advice on how to optimise team learning within a specific professional context

Trending Topics in Educational Science and Technology (201200034)

In this (obligatory for all EST students) core course, several instructors will present their field of expertise. The presented topics therefore will be aligned with the current scientific research areas in our research groups.

The presented topics will cover both the Educational Design and Effectiveness (EDE) as well as the Human Resource Development (HRD) domains.

Organisation of the course:

After a generic introduction session, each trending topic will be dealt with in a 3-weeks mode, where (a) the instructor introduces the topic in a lecture, (b) a seminar where the instructor and the students will focus on the topic's content-related and methodological issues, and (c) 1 week for (group-based) completion of the topic-related assignment.

The nature of the assignments varies and the full set of to be attained competences (design, research, advice, and reflection) are addressed.

At the end of the course, students have knowledge on and insight into:

- contemporary developments in the domain educational science and technology, both with regard to domain-specific topics as well as research methodological issues.
- EDE- and HRD-specific aspects, research areas and research methodologies within the trending topics

Note: The grades of the different trending topics assessments in this course stay only valid until the end of the following semester in which the course is offered again. (Note: the Trending Topics course is offered twice per year). If a student does not pass the course (complete all trending topics' assessments) the 2nd time (so: within 1 year), the student loses the grades previously earned for the topics which he/she has passed. Consequently the student has to re-take the entire course.

The final grade for this course is the average of the six sub grades. The final grade must be sufficient (grade ≥ 5.5). Of the six sub grades, one is allowed to be lower than 5.5 (but still must be ≥ 5.0) on the condition that the average of the six sub grades is still ≥ 5.5 . If this condition is met, the student is not allowed a retake to improve the sub grade that was below 5.5. If the condition is not met, then a retake is required in the next semester. If the topic that requires a retake is not available in the next semester, the course coordinator will assign a substitute topic.

D2: pre-M courses (alphabetically ordered)

Academic Writing (192412240)

The course provides participants with the necessary skills for the preparation of academic articles/manuscripts in English. Participants will also be taught the techniques of effective information search, the ways to work with scientific articles and evaluate them, and the conventions used in literature citation and referencing. Participants will be expected to perform skill-building exercises during the different sessions. Writing tasks will also be given to provide participants the opportunity to practice and/or improve their writing skills. A total of 7 sessions are scheduled and each session will be a combination of workshops and short lectures. Attendance to all the sessions is obligatory. The primary basis for student assessment is a comprehensive literature review based on, at least, 10 scientific articles.

For the duration of the course, participants are expected to do the following:

- search for relevant scientific articles that would be used for the writing of academic articles/manuscripts;
- evaluate scientific articles using a set of criteria;
- prepare a literature matrix to effectively work with different information from various sources (e.g. articles published in peer-reviewed journals, books, government reports, professional journals);
- effectively use information from scientific articles for the writing of academic articles/manuscripts;
- apply the conventions of source citation and referencing into their own academic articles/manuscripts; and
- prepare a literature review using various academic, scientific, and professional sources.

Moreover, after a successful completion of the course, participants are expected to be proficient in writing academic papers (e.g. literature reviews, conceptual papers, research proposals, and theses).

Designing for Learning in Schools and Organisations

The course consists of 2 components: Designing for learning in schools and designing for learning in organisations.

Designing for learning in schools: Students in this unit will become familiar with core design concepts (e.g. design requirements, formative evaluation), design phases (preliminary study or analysis, design and evaluation) as well as key considerations for implementation during each phase. These goals are pursued through a number of sessions, which feature both theoretical and practical orientations during class and in the assignments. Specific topics to be addressed are teacher development and test design. This unit concludes with a written exam featuring both closed and open questions.

Designing for learning in organisations: The sessions on the domain of learning in organisations will be organised according to three themes: 1. analysis 2. design and 3. evaluation. During each session, HRD theories will be discussed and applied to each theme. In addition, a case will be analyzed to practice with the application of HRD theories. This unit concludes with a written exam.

Assessment:

- The assessments of both the course's components is done by written exams.
- The final grade of the course is composed of the grades of the two course components. Both course elements will count toward 50% of the final grade.
- Both course's components have to be graded a 5.0 or more, with an average grade of

at least 5.5.

- In case of one or more insufficient partial grades, students may re-sit one or both exam(s) that was/were not sufficient, in the following quartile.

The grades of the course's components grades stay valid until the end of the following semester. If a student does not pass the course (i.e. complete all partial assessments satisfactory) until then, the student loses the grades already earned.

There are 2 sets of goals and objectives:

1. Designing for learning in schools:

Upon successful completion of this unit, students will be able to identify and use techniques to design, develop, test and implement valid, practical and effective solutions to educational problems. This involves working in a systematic and creative manner, using scientific knowledge and practical skills in a comprehensive approach.

2. Designing for learning in organisations:

At the end of this component, students have knowledge on, insight into and are able to apply:

- Different theoretical approaches in the domain of Human Resource Development (HRD)
- The phases in a change and learning process
- Various strategies to increase learning, development and change in a company or institution
- Design approaches and methodologies for designing HRD interventions.

Inferential Statistics (201300064)

This course introduces inferential statistics (i.e. tests and confidence intervals). Concepts from inductive statistics are discussed on the basis of conclusions concerning an average with a known population standard deviation (i.e., z test). Additionally, several popularly used statistical techniques are treated: t-tests (both independent and dependent), binomial tests (both for a single proportion and two proportions), and chi-squared tests of independence. Also several popularly used (more advanced) statistical techniques are addressed: simple linear regression, multiple linear regression, one-way and two-way analysis of variance (one-way ANOVA and two-way ANOVA), and nonparametric tests. During the in-class computer exercises, students are taught analysing small and greater data files using the IBM SPSS statistical programme.

Note: this brief description may be subject to some minor changes at a later stage

Research Methodology and Descriptive Statistics (201300063)

This course introduces the basic principles of empirical research in the social sciences. The role of research in the context of the empirical cycle (i.e. testing theories) and research in the context of problem solving and design will be discussed. Students will learn to formulate clear and answerable empirical research questions. They will also learn to select from various correlational and experimental research designs and different data collection methods to answer these research questions. During the course, students will develop a first understanding of the concepts of validity and reliability, and will comprehend factors that may undermine (measurement/internal/external) validity of research. Finally, they will get a basic understanding of descriptive and inferential data analysis.

More specifically, after completion of this course students will be able to:

- formulate a clear empirical research questions, with clear units of analysis, variables and with a well-defined descriptive and/or explanatory aim;
- formulate of a well-phrased and testable causal hypothesis;
- identify and comprehend the implications of a causal statement (correlation, time order and the absence of a third variable);
- select an appropriate research design, and have knowledge about the factors that

- may undermine validity associated with the various designs;
- develop measurement instruments and to assess their reliability and validity;
- sample data from a larger population, are aware of possible biases introduced in the selection process and are aware of the idea of statistical inference based on sampled data;
- describe data, using an appropriate statistical program, in frequency tables, bar charts, histograms and box plots;
- describe the relationship between variables, using bivariate tables and scatterplots;
- draw conclusions and report about the results of a basic data analysis.

Research Studio (201300069)

Educational scientists in the fields of Human Resource Development (HRD) and Educational Design and Effectiveness (EDE) investigate people's learning and professional development in school and non-school contexts. Practitioners, in turn, can use the insights that can be gleaned from educational research to improve their professional practices. So, regardless of whether you pursue an academic career or want to work in a more applied setting, you need to develop a solid understanding of educational research in the broadest sense of the word. This course is designed to do just that.

Following the phases in the empirical cycle you will acquaint yourself with survey research and intervention studies as well as the qualitative and quantitative data produced therein. Through hands-on experience with real empirical materials such as scientific articles, case descriptions and existing datasets, you will learn to understand, conduct, and hopefully appreciate educational research.

By the end of this course, students should be able to:

- Understand the roles of scientific research in education and training practices.
- Understand the prevalence and use of various research designs, methods and techniques in the fields of HRD and EDE.
- Understand the purposes of, and similarities and differences between survey research and experimental research.
- Understand the purposes, merits, and demerits of qualitative and quantitative research methods.
- Formulate research questions and hypotheses.
- Identify and operationalize key concepts.
- Propose a research design to investigate a research question or test hypotheses.
- Design and apply rubrics to code and score qualitative and quantitative data.
- Propose and apply qualitative and quantitative methods to analyse the data.
- Draw valid conclusions and implications from the data.
- Report the research in a scientific paper

Assessment:

- The assessments of both the course's components is done by written assignments.
- The final grade of the course is composed of the grades of the two course components. Both course elements will count toward 50% of the final grade.
- Both course's components have to be graded a 5.0 or more, with an average grade of at least 5.5.
- In case of one or more insufficient partial grades, students may re-sit one or both assignment(s) that was/were not sufficient, within or shortly after this quartile.
- The grades of the course's components grades stay valid until the end of the following semester. If a student does not pass the course (i.e. complete all partial assessments satisfactory) until then, the student loses the grades already earned