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European Maturity Model for Blended Education

Student learning

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Architecture and Modelling of Management Information Systems

Description

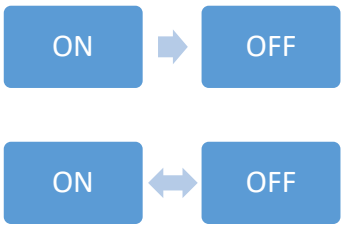
The goal of this course is to familiarize the students with modern methods and techniques of software engineering for Business Information Systems, to let them understand the relation between an information system and the organizational aspects of an enterprise, and to let them acquire sufficient skills to enable them developing an enterprise model as basis of a business information systems

Objectives

Upon completion of this course, the student:

- understands the role of RE in the software development process
- is capable of organizing requirements in a layered architecture
- is capable of performing a requirements analysis to create an enterprise model
- is able to evaluate alternative enterprise models against their impact on the (work) organization and their impact on information system services
- is able to create a high level view of information system services
- is able to relate the enterprise model and the information system services to a business process model.
- knows about modern software development techniques to transform analysis models into working code.

Structuring



As well as being structured as a duplication (in casu face-to-face lectures are recorded and made available as web lectures). The course can also be seen as an example of flipping the classroom where the online activities precede the physical classroom activities.

Tools

Recordings of the in-class lectures are available online (Youtube), use of Videolab and a MOOC on EdX that precedes the course. Students without the necessary prior knowledge can, in preparation of the course start of by following this MOOC.
https://www.edx.org/course/uml-class-diagrams-software-engineering-kuleuvenx-umlx-1

Half of the course is online – students make exercises in an online environment (JMermaid). It's a tool where students can draw a plan for an enterprise information systems according to user requirements. Then students can generate code according to the drawn plans and can as such immediate see the result of their modeling. The tool generates automatically feedback to students.

Face-to-face sessions: Theoretical sessions
Lab sessions: Practical assignments in a computer lab

Transition

This course represent the ongoing process of reflection of the teacher on her teaching. Students were facing difficulties in making the exercises, because they weren't able to 'see' what they had designed. In 2005 the course designer started with the development of a tool that 1) would include feedback on the quality of the created models and 2) could simulate the work of the students by generating code, so they could actually see what they had designed. Since 2011 the tool also generates feedback in the generated code in an automatic way, thereby improving a student's interpretation of the simulation and stimulating reflection on the cause-effect link between the drawn model and the application's behavior.

The tool also logs the student's modeling process, and these processes have been analyzed by means of process mining techniques for discovering modeling patterns associated to good and bad model quality.

As an added step to this continuing process the course designer started a SPOC (containing the web lectures) as a step up to a MOOC.

Teaching Methodology: Behavioral Sciences and Education

Description

This course is taught university-wide as well in behavioral sciences as in sciences. The contents of the course is grouped into different themes. In each theme a translation is made from the general theory to the broad domain of behavioral sciences and education.

- The teacher in behavioral sciences
- The teacher as organizer and coach of teaching and learning processes
- The teacher in relation to his/her students
- The teacher as evaluator of teaching and learning processes
- The professional development as teacher in behavioral sciences

Objectives

After successfully completing the course the student learns to:

- show insight into the relevant frameworks of reference about learning and teaching in the fields of psychology, educational sciences and other related domains.
- demonstrate knowledge of the reflective experiential learning as a didactic framework forming the basis of the practical training in the teacher training behavioral sciences.
- reflect critically upon the basic principles and significance of specific didactical practices in education in behavioral sciences.

Structuring

The course starts off with an introductory face-to-face lecture and ends with a face-to-face round up session. In between these lectures, activities (comprised of individual and group assignments) are online. These activities are supported by as well face-to-face individual and group feedback sessions as feedback via skype.

Tools

Online learning environment in university LMS: knowledge and skills students need in order to make the assignment. combination of video, presentations, articles, FAQ, discussion forum, group blog

Course text (this is the core of the study material)
Face-to-face sessions: Introductory lecture and round up lecture. Individual and group feedback to monitor the learning process

Transition

This course started as the first distance education course at the university, where students were expected to independently process the course material. Three years ago the didactic team decided to redesign the course towards a blended approach, because of the scaling up in the multi campus context of the development of the educational master. The student numbers can increase to 1000.

Acute and Chronic Diseases

Description

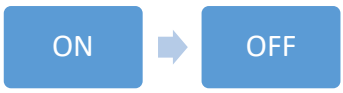
The course contains both theoretical and residential elements and is aimed at providing the students with a medical research-based knowledge of acute and chronic diseases that enables them to diagnose, treat and, rehabilitate patients with common acute and chronic diseases.

Objectives

For ordinary patients, after completing the course, the student should be able to:

1. Receive and correctly communicate with both acute and chronically ill patients
2. Perform the necessary and correct first aid
3. Could record sufficient patient history
4. Perform proper and adequate objective examination of the patient
5. Set up and perform an initial study and treatment program
6. Ordinate necessary paraclinical studies
7. Analyze paraclinical study results
8. Diagnose and treat the most common simple internal medical, general medical, dermatological and orthopedic diseases
9. Could inform patient and relatives about the prognosis of the disorder, the risk of treatment given and the preparation of relevant rehabilitation programs
10. Set up a geriatric investigation program for a complex geriatric medical / surgical patient
11. Ordinate pain treatment and palliation of elderly patients as well as refer to home treatment at the geriatric team
12. Evaluate the symptoms and diseases to be diagnosed and treated in general practice, in the secondary healthcare system, and which require rehabilitation efforts involving other sectors, such as social, labor and education sectors
13. Describe human behavior, reaction patterns and coping strategies and treatment based on biomedical, psychological, social and cultural prerequisites
14. Describe the theory and principles of health promotion, disease prevention, early disease detection and rehabilitation in general practice.

Structuring



The course is an example of the flipped classroom approach. Students consult the online material before attending the face-to-face activities. Dermatology is part of the course. in order to scaffold the students' preparation prior to meeting with the teacher, a large number of videos were produced. These were focusing on explaining essential knowledge and skills in dermatology. Thus, making room for including and discussing relevant clinical cases in the in-class activities.

Tools

Explanatory videos focusing on explaining essential knowledge and skills in dermatology. The videos are posted on the university's platform (Blackboard). Face-to-face sessions: discussion on relevant clinical cases.

Transition

The course was redesigned in 2016. before this transformation the in-class activities in dermatology were primarily based on teacher-centered lectures linked closely to the syllabus. The course designers wanted to change this approach in order to be able to accommodate for the fact that students want to study at other times than curriculum contact hours.

Tools

Blackboard as a learning management tool (communicator, discussion board, Short 8 minutes videos with lectures, on-hour online sessions uses video and chat function), e-mail, blogging.

Transition

It is a new course and it ran for the first time in 2017.

Multidisciplinary and Cross-Sectional Rehabilitation

Description

- The students will gain insight into the research and experience-based basis for rehabilitation to be able to apply this in a clinical and research context. Therefore, focus is on implementation, monitoring, and critical assessment of rehabilitation initiatives to give the students skills in conducting such initiatives.
- On the basis of WHO's International Classification of Functioning, Disability and Health (ICF), students should be able to justify the choice of rehabilitation initiative, and plan, implement and monitor rehabilitation in an interdisciplinary and cross-sectoral perspective based on the citizen's goals and preferences. Students will be given the opportunity to immerse themselves in rehabilitation concepts and models, rehabilitation organization and rehabilitation efforts. The focus is on rehabilitation in the municipal sector and the transition between the primary and secondary sectors.

Objectives

The course aims at giving the students ability to:

- Discuss and reflect on central concepts and contexts in rehabilitation
- Analyze and discuss the importance of societal and social conditions for rehabilitation initiatives
- Apply relevant parts of the Health Act and the Service Act in regard to rehabilitation in specific patients cases.
- Make assessment of functional ability as well as discuss and reflect on the concept of functionalism
- Discuss and reflect on methods for developing and evaluating complex interventions in rehabilitation
- Apply methods for planning and evaluating complex interventions in rehabilitation in selected cases
- Analyze the strengths and weaknesses of different designs used to evaluate rehabilitation efforts
- Critically consider evidence of clinical performance monitoring tools (both on body, activity and participation)
- Discuss and reflect on challenges in implementing and monitoring rehabilitation initiatives

Structuring

The physical classroom activities are intertwined with the online activities whereby the digital portfolio acts as the backbone of the course. The course starts off with theoretical lectures where concepts are introduced. The portfolio consists of assignments the students have to complete and discuss.

Tools

Blackboard, digital portfolio, video

Transition

The course is blended because a significant part of the course with ongoing portfolio assignments containing peer feedback are used to follow up and to adjust the teaching in class. There is a strong coherence between in and out of class activities throughout the course. Beside the portfolio assignment are conducted additional out of class activities using blogs, wikis and video recorded by students

In this course a substantial part was redesign to gain the pedagogical advantages of using peer feedback. In the redesign process the advantages of both the digital and the physical learning environment were considered and included to achieve the best match between the two in order to enhance the students' learning.

Physics 1A: Foundations

Description

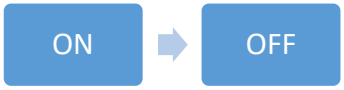
This is an introductory-level course, covering the classical physics of kinematics, dynamics, forces, and oscillations, and touching on aspects of contemporary physics, including relativity and chaos. The course is designed for those with qualifications in physics and mathematics at SCE Higher level or equivalent. It serves both as a preparation for further study in physics-based degree courses, and as a stand-alone course for students of other disciplines, including (but not limited to) mathematics, chemistry, computer science and engineering.

Objectives

On completion of this course, the student will be able to:
1. Demonstrate knowledge and understanding of introductory Newtonian mechanics.
2. Solve problems in introductory Newtonian mechanics.
3. Communicate physics ideas effectively through verbal, written, graphical and mathematical means.
4. Demonstrate self-organised study skills.
5. Demonstrate skills in dealing with real-world, contextualised physics problems.

The course also has some important secondary objectives: students enter the program with wildly different previous knowledge and experience of physics. the course needs to get them all to a common point to allow them to follow the rest of the physics degree programs. it also explicitly sets out to promote and build effective habits of study for university-level education.

Structuring



The course consists of a total of 200 hours distributed as follows:
33h lectures
30 h Supervised Practical/Workshop/Studio Hours
11h online activities
3h feedback/feedforward
15h summative assessment
6h revision sessions
4h Program Level Learning and Teaching
98h Directed Learning and Independent Learning

The course has a flipped classroom approach with face-to-face workshop sessions three hours/week.

Tools

Learn (Virtual learning environment), top hat classroom response system, aardvark (bespoke home-grown content management system), peerwise

Transition

The course has operated in a fully 'flipped classroom' style since the 2011-12 academic year. The current presentation of the course makes heavy use of the vle with extensive additional resources (course notes, practice problems, self tests) only available online, and vle tools (quizzes etc.) used to facilitate a limited implementation of just in time teaching. in-person sessions (flipped lectures and problem workshops) are complemented by the online presence of the course.

Prior to going fully-flipped, the course was not conventional: it had for many years employed active learning techniques such as in-class voting and research informed pedagogies such as workshop physics.