AALBORG UNIVERSITET

Semester description for 3rd semester, Master in Biomedical Engineering and Informatics, Autumn 2020

Semester details
Department for Health Science and Technology
Study board for Health and Technology
Curriculum: https://studieordninger.aau.dk/2020/23/1665

Semester framework theme
This should include an elaborated description in a prose form of the focus of the semester, activities implemented to fulfil the competence objectives and the thematic(s) of the semester. In other words, the semester description includes the "framework theme" that the students will be exposed to during the semester. The role of the semester and its contribution to students' academic progression should also be described.

This third semester of the BME&I program will allow students to test their skills and competences acquired through the Master and previous bachelor study. This is done through a 30 ECTS project module. The project will require combination of previously acquired knowledge, skills and competences with new material learned at the semester.

Semester organisation and time schedule
This must be a short description the of the different activities of the semester, their mutual connections and the way in which they support each other and also support students in reaching their goals; such activities may be study trips, internship periods, project modules course modules, including laboratory activities, cooperation with external stakeholders, possible cross-disciplinary cooperation relations, any guest lectures and other events.

The project at this semester is a 30 ECTS project.
The project report is written in groups of one to four students. The students may choose to do the project at another institution possibly abroad or at a private company. The project work is then executed like it would have been at AAU, only the student is physically located abroad/at the company. The students are expected to find a project - the semester coordinator will assist when necessary. Supervisors and lecturers from previous semesters will also assist in finding a proper project. The students may also refer to the project catalogue from 1st semester and approach the project proposers to inquire if the proposed project can be scaled to a 3rd semester project. An internal supervisor will be appointed for the project.
The topic of the project is approved by the semester coordinator to ensure proper level and compliance with the curriculum.

Project status reports.
Three status reports must be produced by the students. Each report must be submitted to the supervisors and the semester coordinator.
The first report must be submitted 1 week prior to the first semester group meeting and focus on the feasibility of the project and contain a project plan.
The second report must be submitted 1 week prior to the status seminar and should also be provided the opponent groups (**Semester organisation and time schedule** above). The focus should be on the aim and methods of the project.
The third status report must be submitted 1 week prior to the second semester group meeting and should focus on updates to the project after the status seminar.

Semester coordinator and secretariat assistance
Names of anchorperson (teaching staff), course coordinator, semester coordinator (or similar title) and secretariat assistance provider(s).

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Semester coordinator: Jacob Melgaard, jm@hst.aau.dk, Department of Health, Science and Technology.
Semester secretary: Tinna Lund, tilu@hst.aau.dk, Department of Health Science and Technology.
Student representative: Please check semester details on Moodle.

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Module description (description of each module)

Module title, ECTS credits (and possibly STADS code)
Anvendt sundhedsteknologi og informatik / Applied Biomedical Engineering and Informatics
30 ECTS project module

Location
Master, Biomedical Engineering and Informatics, 3rd semester
Study board for Health and Technology

Module coordinator
The academic staff member responsible for the organisation and execution of the module.
The module leader may be the same person as the semester coordinator. If a person responsible for exam is pointed out, please state name and e-mail address here.

Jacob Melgaard, jm@hst.aau.dk, Department of Health, Science and Technology.

Type and language
Module type (e.g. study subject module, course module, project module etc.)
Language of instruction.

Project module in English.

Objectives
Description of the content and objectives of the course as regards learning objectives of the students in the module. This comprises a transcript of the knowledge, skills and competences described in the study regulations and curriculum. Reference can be made to elaborations on semester Moodle site.

From Curriculum:

To give the student experience in applying scientific methods or performing scientific experiments related to Biomedical engineering and Informatics at a University Department or in a company in Denmark or abroad. With this semester, the student will be able either to broaden and/or to deepen his or her experience in a specific research area.

Students who complete the module:

Knowledge
- have knowledge of at least one of the areas: Signal processing and image analysis, Pattern recognition and decision support, Clinical information systems, Sensory-motor control and rehabilitation systems, and Physiologic modelling
- are able to reflect on a scientific basis on this knowledge,

Skills
- are able to apply scientific methods and tools to research within the chosen area of knowledge
- are able to evaluate and to choose scientific theories and methods within the chosen area of research
- are able to communicate problems, methods and results within the scientific area, in both oral and written form

Competences
- are able to independently initiate or to perform collaboration within the discipline
- are able to take responsibility for their own professional development

Academic content and conjunction with other modules/semesters
A brief and general description of the academic content of the module as well as the basis and motivation for the module; i.e. a brief review of the content and foundation of the module.
The intention is to provide students with an overview of each module and to create understanding of the module in relation to the semester and the entire programme.

The project aims to strengthen the students' independence while integrating their skills and competences learned on previous semesters in a scientific project in collaboration with external partners. With this project, the students will be able either to broaden and/or deepen their experience in a specific research area. This work, and the dissemination of it, prepares the students to writing their master's thesis on the fourth semester.

Scope and expected performance
The expected scope of the module in terms of ECTS load. This comprises number of teaching hours, exercises, preparation time, travel activity (if applicable) etc.

The project is a full semester project i.e. 30 ECTS, thus with an expected workload of 900 hours.
Activities included in this project module:
Status seminar (15 hours)
Project (860 hours)
Preparation for the exam (25 hours)

Participants
Indication of the participants in the module, particularly if they include several year groups, programmes or another type of co-teaching.

3rd semester BME&I M.Sc. students.

Prerequisites for participation
Description of the prerequisites for students' participation in the course, i.e. previous modules/courses in other semesters etc. The overall intention is to emphasise the coherence of the programme. This may be a transcript of the text in the study regulations and curriculum.

The students must have participated actively in the first two semesters of the M.Sc. in BME&I program.

Module activities (course sessions etc.)

The project will be the last project before the thesis. The students will therefore perform a project within applied biomedical engineering and informatics displaying capabilities of scientific and structures problem solving and communication. The projects in this semester are very diverse and a general description of project activities is not feasible. The project content will be decided in a dialog between the group and the supervisor.

Project description
The students must produce a short 1 page project description stating the rationale, aim, and methodological approach. The project description must be approved by the supervisor, possible external supervisor and semester coordinator during the first week of the project period. Approval from external supervisor(s) should include an acknowledgement that the host institution can accommodate the project. Students planning a project with external collaborators are encouraged to finalise the project description and approval prior to departure from Aalborg.

Status seminar
A status seminar is planned halfway through the semester. During the status seminar, the progression of the individual project groups is cross-validated among two-three groups. The groups and their supervisors arrange the form of the status seminar among themselves; e.g. face-to-face, through video link, or written.

Examination

The project exam is held according to "Guide to group based project exams" as regards to the form. The examination is based on the learning outcomes from the curriculum and the interpretation in the semester description.

Further, the exam plan is available at https://www.hst.aau.dk/uddannelser/Undervisning+og+eksamen/.