GMM 2010 Curriculum

The outline provisions of the academic regulations

The Global Management and Manufacturing Programme (GMM) is formulated by the Head of the Programme and approved by the study board at AU-IBT and the Dean of the Faculty of Social Science.

The effective date of this study programme is 1st September 2010

The GMM programme entitles to the title of Bachelor of Engineering in Global Management and Manufacturing. The GMM programme should qualify the student to continue on a master level. (Executive Order 527 of 21/06/2002 § 1 subsection 2).

Academic competences and qualifications

Competence profile

A Bachelor in Global Management and Manufacturing provides the students with the following competences;

1) Graduates are able to analyse technical research results and use relevant scientific and technical knowledge to carry out practical tasks and solve technical problems.

2) Graduates are able to critically acquire new knowledge within relevant engineering fields, and independently solve existing engineering related tasks

3) Graduates are able to plan, carry out and manage technical installations, taking into account societal, economic, environmental and workplace consequences in the solution of a technical problem

4) Graduates are able to take part in contexts where management and cooperation between people with various educational, linguistic and cultural backgrounds takes place.

The GMM programme provides the students with knowledge and skills which makes the students able to work independently or in cooperation with others in solving technical problems which are described in (Executive Order 527 of 21/06/2002 § 1)

Competence goals:

Intellectual competences:

A graduate in Global Management and Manufacturing;
• Has insight in and experience in arguing independently, analytically, critically and systematically on an academic level.
• Can work independently as well as in cooperation with others.
• Is capable of communicating the results of his / her own or others analyses in a clear language orally as well as written.
• Are able to manage and structure his / her own learning and professional development
• Can acquire new knowledge and pass this knowledge on.

Professional competences:
A graduate in Global Management and Manufacturing;
• Holds a deep and well-founded knowledge about the core areas of GMM (company management, operation management, manufacturing techniques, quality and environmental management, innovation and product development, planning and control, supply chain management, economy, sourcing and strategy) and relevant insights into other related areas.
• Is capable of acquiring further relevant knowledge.

Practical competences:
A graduate in Global Management and Manufacturing:
• Is able to enter into a professional teamwork with professionals from other areas in order to solve practical problems and is able to communicate general and specific knowledge in connection to this.

Executive orders:
Executive order no. 181 of 23. February 2010 Executive order on admission, registration and leave of absence etc. at higher education institutions.

Admission
Entrance requirements for the GMM programme are stated in executive order no. 181 of 23. February 2010 on admission, registration and leave of absence etc. at higher education institutions.

To be admitted to the study programme, the applicant must have passed a short-cycle higher education programme within Mathematics at “B” level, Physics at “B” level and English at “B” level.
Admission for foreign applicants

To be admitted to the GMM programme you must at least have passed a high school exam (equivalent to 12 years of school). For some countries it is further acquired to have one year of university study as well.

The levels of Mathematics, Physics and English must be the same as for the Danish students (equivalent to maximum high school level).

- English at B-level. The language qualifications comparable to an 'English B' level in Denmark can be documented as follows:
  - TOEFL test results of at least 560 (paper-based) or 83 (internet-based test). The Aarhus University TOEFL code is 8935.
  - IELTS test with a minimum score of 6.5 points
  - Cambridge/Oxford: Certificate in Advanced English (CAE)
  - “C1 level” obtained by examination from a CEFR validated English language course
  - English-taught entrance examination (“upper secondary school/high school”) or Bachelor’s degree.

This study programme grants access to: MSC in Engineering (Technology Based Business Development) at AU-IBT and other Master of Science in Engineering programmes.

Deadlines

A student must observe the following deadlines to be able to continue his / her studies in GMM at AU-IBT:

a) The 1st year courses must be passed two years after admission.

b) The education must be completed no later than 6½ years after admission.

c) All previous courses must be completed satisfactorily i.e. “passed” or with a minimal mark of 02 according to the 7-step grading scale, before a student can begin the dissertation project.

d) All subjects on the 1st to the 4th semester must be passed no later than 4 years after beginning the studies.

e) All previous education courses are to be completed with a satisfactory completion, i.e. "passed" or with a minimal mark of 02 according to the Danish 7-step grading scale, before a student can begin the dissertation project.

To qualify for the Danish government grant (SU), other rules apply, see www.su.dk.
### Transitional provision

This study programme applies to students who are enrolled from 1st September 2010 or later.

Students who have not finished their education according to the study programme 2010 and the executive orders Mentioned earlier will be transferred to the latest approved study programme after a concrete academic evaluation.

### Rules and professional progression regulation

#### Overview of the GMM study programme

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<td>Physics/Statics/applied Physics 5 ECTS</td>
<td>International managerial Economics (Financing and Investment) 5 ECTS</td>
<td>Electives ECTS</td>
<td>Trainee in Mentor Company 30 ECTS</td>
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The Global Management and Manufacturing programme is rated to 210 ECTS points which is equivalent to 3½ years of full time study.

To pass the programme of Global Management and Manufacturing the students must acquire a total of 210 ECTS.

Workshop courses is a part of the study programme if the student does not have the necessary practical qualifications to complete the study programme (no 527, §12).

**Mandatory courses:**

Basic engineering subjects 35 ECTS, Management and Manufacturing subjects 50 ECTS, Projects including the final dissertation project 80 ECTS.

**Electives:**

There are different elective courses each semester. Students must have completed 15 ECTS of electives to graduate.

**Internship:**

The 6th semester is used for internship 30 ECTS.

**Main subjects:**

Courses and modules are described in detail in the course descriptions. These course descriptions are approved and updated by the Head of Programme.

The learning goals for each course are described in the course descriptions.

All lessons and all reading material used in the Global Management and Manufacturing Programme is in English.

1st and 2nd semester of the programme in Global Management and Manufacturing, has a strong emphasis on giving the students a wide and basic knowledge of science in the following areas:

- Statistics
- Mathematics
- Drawing and understanding and graphics communication 3D
- Marketing and design
- Organisational theory
• Manufacturing engineering

3rd, 4th and 5th semester has focus on interdisciplinary projects within a mentor company and on relevant management and manufacturing related subjects are:

• Logistics
• Supply Chain management
• Human Resource management
• Strategy and strategy development
• Mentor company projects

The third semester project CRP 3 focuses on problems within the area of quality and environmental management. Because of the involvement from a mentor company, the third semester project deals with real problem areas.

The fourth semester project CRP4 focuses on problems within the area of innovation management, new product development, production development or purchasing. Again the project is defined together with the mentor company and hence deals with real problems.

The fifth semester has a strong emphasis on giving the students a wide and basic knowledge within the area of sourcing and supply chain management, combined with an in depth understanding of strategy and strategy development. The fifth semester project CRP5 focuses on subjects related to logistics, buying or supply chain management, possibly combined with strategy considerations.

TVP/CRP projects

In the Global Management and Manufacturing programme, 25% of the total programme must be used on project work in direct relation to real problems in companies. This extensive amount of company project work is to encourage the exchange of knowledge and values between AU-IBT, the students and the mentor company. This provides a high degree of motivation for the students to engage in the technical field. The project work is organised mainly GMTVP1, GMTVP2, GMCRP3, GMCRP4, GMCRP5 and the final thesis, but other company related projects may be assigned.

The projects GMTVP1 and GMTVP2 are to be conducted in groups, the size of which is set by the instructor. The remaining projects, including the final thesis may be conducted individual in the mentor company, or may be conducted in groups.

The final project takes place during the 7th semester. The bachelor project is a written thesis with an oral examination. The evaluation involves both the written and the oral defence of the paper.

Internship
On the 6th semester the students are in an internship in a company that is relevant for the student. AU-IBT, the company and the student makes an agreement that includes a plan for the internship.

After the internship period is finalized the student must make a report etc. given in the course description for the internship and take part in a learning day regarding knowledge sharing with the classmates and students who stand before the next internship period.
If the student cannot participate in the learning day due to being abroad or other reasons, the student must hand in a written application for a pass.

During the internship, the student is paid according Study Council for students in Denmark.

Students with a vocational education within the field in question may be exempted from the internship and the workshop courses.

If the student is working on his own business idea, the internship can be within his own company. The student must apply in writing including the business plan of the company to the Head of the Programme in order to be able to have his / her company as the place for the internship.

**Workshop periods**

The workshop periods aim is to create an understanding of the manufacturing process as well as workshop technology. The workshop internship takes place in the following periods;

1) WSC1; 2 weeks where the student does practical work in the lab in connection with the project. It is a practical mock up of an item in relation to the GMTVP1 project.

2) WSC2; 2 weeks of working in a mentor company before 3rd semester.

3) WSC3; 1 week of mandatory study trip where the focus is on outsourcing.

**Mentor programme:**

The overall aim of the mentor programme is to apply the acquired knowledge during the semesters by:

- Comparing it to the practice in the industry
- By applying it in the company related projects, internship and in the final dissertation project
- By using the practical experience and real world problems in the industry as case material during the semesters.

The mentor period starts from the 3rd semester and runs until the final dissertation project. The mentor company can change during the programme either by request from the company or the student. If the students wish to change Mentor Company, study abroad for one or two semesters, have their internship abroad they must hand in a written application to the Head of Programme, who will evaluate the application.
In order to start in the mentor programme all courses /ECTS form previous semesters must have been passed according to the course descriptions. For further description see course description. There are two different ways of participating in the mentor programme.

1) Fixed mentor company during the programme

The student is semi employed in the mentor company from the 3rd semester.

2) Different mentor companies during the mentor programme.

The students are not required to have any salary during the mentor period except during the internship. The company is only required to pay for the positive expenditures in relation to having the student in the mentor programme and to pay for the positive expenditures imposed of students in a normal course of study.

It is the students’ responsibility to find a mentor company – AU-IBT can be of assistance in finding a mentor company. During the study programme the student will be presented with preparation materials on how to find a mentor company. If the student chooses to find a mentor company abroad, AU-IBT cannot guarantee that coaches can be on location in the company. Coaching will then happen in other ways.

**Merit Credit transfer**

Process designers from TEKO may get credit transfer equivalent to 90 ECTS of which the 30 ECTS is the integrated engineering internship. Production technologists can also get the same credit transfer. Students from other relevant short-cycle higher education, who fulfill the admission requirements, may get credit transfer of 60-90 ECTS of which the 30 ECTS is the integrated engineering internship. Credit transfer for the individual subjects is always granted on a case by case basis by the Head of Department / Study Board depending on, among other things, the optional GMM subjects.

Students studying for a Danish M.Sc. in engineering may transfer to the 5th semester of the GMM study programme when they have completed two years of study in a relevant study programme as well as relevant workshop courses.

Credit transfers for M.Sc. in engineering students, who have completed a shorter or longer period of study, are granted credit on a case by case basis.

AU-IBT has many exchange agreements which make it possible for students to complete part of their education at universities in other countries. If the student wishes to take advantage of this possibility, a period of study can be arranged in a degree programme that resembles the Danish Global Management and Manufacturing programme in terms of content and character. The transfer of merit for courses completed at international institutions of education is handled by the study board at AU-IBT.

In relation to exchange students it is a prerequisite that the majority of the previous ECTS credits in the study programme have been passed.
Evaluation

The student’s qualifications are documented by means of examinations, evaluation of projects. The different examination forms during the study programme consists of; individual oral or written examinations, project examinations incl. Individual presentations e.g. the examination forms for the different examinations are chosen in order to best meet the purpose of the courses, the placing of the exam in relation to the progression in the studies and to allow students to try different examination forms to optimize learning during the course of study.

In order to participate in individual examinations all exercises and course work which is part of the syllabus must have been performed and approved.

Written examinations, oral examinations, practical examinations and projects are evaluated according to the 7-step scale (Executive Order 1016 of 24/08/2010 §11) or they are evaluated passed / not passed – approved / not approved.

Internal examinations are evaluated by internal censorship. The individual course description states whether there is internal censorship or not.

Project work and the dissertation project are documented by means of a report and an oral presentation. If the report is written by a group of students it must appear from the report which student are responsible for which sections. During the examination it will be established whether the student is familiar with the whole project.

When the students register to enter a course, they automatically register for the exam as well – be aware of this, in order to cancel the exam, no later than 1 week before it is scheduled (Executive Order 1016 of 24/08/2010 §5).

The dissertation report and the oral exam will be evaluated according to the 7-step scale and should reflect the purpose of the study programme, §1 of the Executive Order 527 of 21/06/2002 on engineering programmes.

Besides the teacher(s) /project supervisor(s) concerned, one external censor appointed by the Danish Ministry of Education will usually participate in the evaluation of extensive and important interdisciplinary project work and dissertation projects.

The Study Board may under special circumstances exempt from external censorship for interdisciplinary projects or with re-examinations.

Delivery time of projects/hand inn’s are always at 12.00 on the announced delivery date. If the projects/hand ins are handed in later than that time it will not be received.

Spelling and formulating capacity
At all written examinations the student’s capability to spell correctly and formulate sentences in a readable way will be included. The evaluation attaches highest importance to the academic content, while spelling and formulating capacity form a modifying evaluation of the overall goal achievement of the course.

At all oral evaluations the student’s ability to present the case in well phrased sentences will be included in the evaluation of the presentation. The academic content will have highest importance, while the oral presentation will have a modifying function in the overall evaluation.

Dispensation

All matters concerning dispensation must be addressed to the study board at AU-IBT. The study board can after reception of a written application – and when it is substantiated in unusual circumstances make a dispensation from the rules that are stated in the overall regulations including laws, decrees, executive orders et. al. (Executive Order 1016 of 24/28/2010 §7).

Complaints and appeals

Complaints must be addressed to the study board at AU-IBT. The premise that needs to be fulfilled in order for the study board to deal with the complaint is, that the complaint is in writing and substantiated. It has to state clearly what the complainant wants to complain about and what the complainant wants to achieve with this complaint.

Complaints about an examination must be handed in at the latest 14 days after the publication of the exam result (Executive order no. 1016 of 24. August 2010 §43, subsection. 2)

General information about tests

Mandatory assignments:

In different courses one or more mandatory assignments must be approved before the student can sign up for the exam. The amount of- and extent of the assignments will appear from the course description. The necessary amount of approved assignments must be achieved in the same course period as the student wants to register for the exam.

Exam demands

The bachelor degree in GMM is obtained when the student in each course has achieved the grade 02 or more or the student has received “passed”. If the student has taken courses elsewhere than at the GMM study, the courses must be passed. Only courses that have been passed can be transferred (merit).

The specific exam demands are described in the course descriptions for each course.

The exam and re-exam is arranged by the study secretary and placed according to the relevant deadline.

The ordinary exams for courses taken in the Autumn semester is in December / January with re-examination in February, while the ordinary exams for courses taken in the Spring semester will be in May / June with re-examination in August.
Students, who do not pass an ordinary exam, either by not cancelling the exam in time, by not obtaining the grade 02 or is ill at the exam date, will have to sign up for re-exam. For further information’s about reexam please look at the course descriptions.