Version 20-8-2019

Programme-Specific Annex to the EER 2019-2020

For the Bachelor of Science programme

Industrial Engineering and Management Science (B-IEM)

September 2019

Contents

1 Structure and Units of Study of the programme

The Bachelor's programme in 'Industrial Engineering and Management Science' (CROHO number 56994) uses the programme name 'BSc Industrial Engineering and Management' (B-IEM) in its communication. B-IEM consists of three academic years (B1, B2 and B3) of 60 ECs each. The academic timetable for the Bachelor's programme consists of two semesters per academic year, each semester consisting of two quartiles. A quartile consists of one unit of study, a 'module' of 15 EC (420 hours).

1.1 Programme content

The programme consists of 12 modules of which the first eight modules are the core of the programme (see Table 1). The two first modules of the third year (semester 5) are electives for broadening or deepening knowledge, skills and attitude, or for studying abroad. The two last modules of the programme (semester 6) are the preparation and the execution of the bachelor's thesis assignment in which the student shows to master all programme intended learning outcomes.

Table 1

Structure of the study Programme BSc Industrial Engineering and Management (B-IEM) 2019 – 2020[1]

	Q1	Q2	Q3	Q4
	Professional and Academic Skills			
Year 1	***M1: Introduction to IEM***	**M2: Operations Management**	***M3: Business Intelligence and IT***	**M4: Supply Chain Management**
				Necessary knowledge: M2[2]
	Professional and Academic Skills			
Year 2	***M5: Finance for Engineers***	***M6: Consumer Products***	***M7: From Product Design tot Online Business***	***M8: Modelling and Analysis of Stochastic Processes***
				Necessary knowledge: M2 + M4
			Professional and Academic Skills	
Year 3	**M9: Elective (inter)national**	**M10: Elective (inter)national**	**M11: Preparation Thesis**	**M12: Thesis**

Binding Study Advise: 75% of Year 1 must be finished to continue

[1] All modules, except Module 6, are organised by the IEM programme. Module 6 is organised by the Industrial Design Engineering programme.

[2] For Modules 4 and 8 necessary knowledge means that the related module(s) must be (partially) finished.

Prerequisite: 75EC	**Prerequisite: 120EC**	**Prerequisite: core programme + research methodology part M11[3]**

In the Twente Educational Model (TEM) on which the B-IEM curriculum is based, practical exercises and relations with the work field play an important role, especially in the form of a project (or sometimes several small projects) which is at the heart of each module. Each module therefore consists of various components (see Table 2) which are logically clustered around a particular topic in such a way that the offered knowledge, skills and attitude of different scientific disciplines and approaches are applied in cases, assignments and/or the project. Students work in groups on project-oriented assignments and gain new knowledge rather independently (under the support and supervision of tutors). Such a teaching approach requires a variety of assessment methods – individual and group assignments, individual written tests, group papers and presentations, etc. - which are applied at different phases in each module. More detailed information on the exam formats, including the test plan, can be found in the module descriptions, in SIS Osiris and on the Canvas site of the module. Note that participating in the practical exercises is mandatory unless specified otherwise in the module test plan.

Table 2

Overview of the module components, their allocated EC's and weight for the determination of the module grade.

Module 1: Introduction to IEM	EC	Weight
Introduction to Mathematics + Calculus 1A*	4	30
Probability	2	20
Domain Knowledge	2	0
Research Methodology	2	10
TBK programming	1	0
Project and Skills	4	40
Total	15	100

Module 2: Operations Management	EC	Weight
Calculus 1B*	3	25
Operations Strategy	3	25
Operations Research	3	25
Skills	2	0
Project	4	25
Total	15	100

Module 3: Business Intelligence and Information Technology	EC	Weight
Statistics and Probability	3	20
Research Methodology	2,5	10
Databases & Business Intelligence	2	15

[3] We also allow to start with Module 12 if: (1) all modules of year one are successfully completed, (2) for the second year of the core programme the student meets the conditions as stated in Section 7.3.1, and (3) the research methodology part of the project plan is successfully completed.

Business Process Management & Enterprise Architecture	1,6	15
Project and Skills	5,9	40
Total	15	100

Module 4: Supply Chain Management	EC	Weight
Business Game and Skills	3	20
Demand/Supply Planning, Invent., Transp.	3	20
Sourcing and Supply Network Design	3	20
Statistics	3	20
Calculus 2*	3	20
Total	15	100

Module 5: Finance for Engineering	EC	Weight
Accounting and Finance	3,5	25
Option Pricing	2,5	15
Research Methodology	2,5	15
Project and Skills	6,5	45
Total	15	100
Module 6: Consumer Products	EC	Weight
Project Consumer Products and Skills	7,5	55
Technical Product Modelling 1	2,5	16
Manufacturing 1	2,5	16
Sustainable Supply Chains for Consumer Products	2,5	13
Total	15	100

Module 7: From Product Design to Online Business	EC	Weight
Product Design to Online Business Theory	4	25
Project	7	50
Skills	1	0
Linear Algebra*	3	25
Total	15	100

Module 8: Modelling and Analysis of Stochastic Processes for IEM	EC	Weight
Stochastic Models	5	33
Project Stochastic Models	1,5	10
Simulation and Heuristics	3	20
Project Simulation and Heuristics	3,5	24
Multidisciplinary Project	2	13
Total	15	100

Module 11	EC	Weight
Project Plan	12	100
Skills	3	0
Total	15	100

Module 12	EC	Weight
Bachelor Thesis TBK	15	100
Total	15	100

* These results remain valid indefinitely. See Section 7.2 for more information.

1.2 Study Load of the programme

The programme has a study load of 180 EC. Each EC represents 28 hours of study. This means three years study and a total amount of 5040 hours of study.

1.3 Programme-specific characteristics

B-IEM is a fulltime programme. The programme consist of:

- A major: 10 core modules;
- A minor: two elective modules, scheduled in the first semester of the third year. The minor can be taken at the University of Twente, other universities in the Netherlands, or abroad.

1.4 Honours programmes

Students obtaining excellent results will be invited for participation in the University excellence honours programmes for broadening their knowledge. These programmes offer additional education to the programme. Participation means extra study load. Finalizing the excellence programme will be noted on the diploma supplement. Recommendation for participation is mandated to the study adviser. For extra information, see https://www.utwente.nl/en/excellence/.

2 Goals and final qualifications

2.1 Aim of the programme

As envisioned in UT's 'High Tech Human Touch' vision, B-IEM particularly focuses on organizational problems in contexts with high societal relevance. B-IEM students can analyse the root causes, can design solutions, can prospectively assess solutions in a (optimization/simulation/analytical) model, and can implement the outcomes in situations where typically they need to work together with people from various other disciplines. B-IEM graduates specifically are able to support scientific decision making, by choosing a method that fits the problem, which means that they combine quantitative and problem-solving approaches of engineers with research methods and qualitative insights from the social sciences.

The *first year* has been designed to provide a realistic experience of B-IEM, to give each student insight in his/her suitability (*level*, *effort*, and *orientation*). Students get acquainted with all B-IEM domains. The focus is on developing students' maturity through development of meta-cognitive competences such as planning, researching literature, and reflection. The project-based learning approach challenges students to solve a real-life HTHT case (project) in each of the four *second year* multidisciplinary teaching units (15 EC).

Since various modules are shared between programmes, students have to work in multidisciplinary teams and on external projects. In case of shared modules, rules and regulations of the organising programme apply (see Section 1.1). The *third year* gives room for a student's personal ambition and

personal choices. Students can broaden or deepen their personal interest by choosing a UT minor. Students can also choose courses outside UT, from (inter)national programmes to be approved by the programme management.

The programme leads to a T-shaped profile of BSc graduates with high level academic and professional skills. In support of the horizontal bar of the 'T', throughout the BSc programme, all UT students have 10 EC of reflection on science and corporate and social responsibility. Also, all engineering programmes share the mathematics learning line.

2.2 Intended learning outcomes (ILOs)

The ILOs (or the so called Final Qualifications) of the B-IEM programme correspond to the requirements formulated by colleagues in the Netherlands and abroad, and by professional practice. We distinguish two groups of competences: domain-specific and general competences, with a specific operationalization on general competences: reflection, working in (multidisciplinary) teams and preparation of student's lifelong learning, ethics, philosophy of science and Corporate Social Responsibility. Table 3 outlines the ILOs.

Table 3

Intended Learning Outcomes of the Bachelor Industrial Engineering and Management Science programme.

	A. Professional Academic Qualifications
	The graduate is able to identify, comprehend, assess, correctly apply, and integrate existing scientific knowledge that can be used for analysing problems and designing solutions, in the domains of: Production and logistics; Information systems; Finance and accounting; Other fields in business administration (law; marketing; human resources); Mathematics, statistics, empirical research methods.
A1	Has a global overview of the structure of research and design processes and is able to Identify the various steps in performed research and design Properly break up own research and design activities into subprocesses *These processes are intertwined: Research is needed for producing knowledge that is used for designing solutions in a specific context. Such knowledge is produced in a purposeful and methodical way (using scientific research methods). It may or may not be generalizable knowledge*
A2	Has an overview of quantitative and qualitative empirical research methods and is able to Analyse performed research as to the methodological aspects Select an appropriate method and explain this choice for research to be performed Apply this method in relatively simple cases
A3	Has an overview of quantitative modelling techniques for operational processes, specifically in the domains of Operations research models Information systems models Finance and accounting models and is able to Analyse the results of modelling activities Select an appropriate modelling technique and explain this choice

	Apply this technique in relatively simple cases.
A4	Is able to integrate existing knowledge, modelling techniques, and research results for designing, validating, and selecting solutions in relatively simple cases *This is challenging, because existing knowledge may not fully apply to a specific situation, models are always stylised, empirical research always has limitations, and some aspects have been left out of scope from the beginning anyway*
A5	Has an overview of implementation methods and processes and is able to (critically) Analyse ongoing or finished implementation processes Plan globally an implementation process in a relatively simple case
A6	Has an overview of evaluation methods and techniques and is able to Analyse the results of performed evaluations Select appropriate evaluation methods and explain this choice Carry out an evaluation in relatively simple cases
A7	In order to be able to meet these competencies, the graduate must have mastered the following disciplines: Mathematics and statistics - [2] (see Legend) Finance and accounting - [2] (see Legend) Production and logistics - [2] (see Legend) Information systems - [2] (see Legend) Law, organization theory, marketing - [1] (see Legend)
	B. General academic qualifications
B1	Is able to work autonomously and self-reliant
B2	Is able to work in multidisciplinary teams.
B3	Is able to communicate properly (in oral and written form) with various stakeholders
B4	Is able to conduct a bibliographic search and knows how to reference correctly
B5	Is able to reflect on professional behaviour and ethical and societal aspects of work
B6	Is able to reflect on and direct personal and professional development
B7	Is able to manage and concretise effectively his own learning process in the context of a MSc programme.
B8	Has enough basic knowledge and competencies to follow a broad range of MSc programmes which are adjacent to the IEM domain.

Level	Legend
[1]	Knowledge of the basic concepts and principles
[2]	Application in relatively simple and monodisciplinary cases
[3]	Application in relatively simple interdisciplinary cases

2.3 Connecting Masters' programme

Successfully completing the BSc B-IEM programme automatically qualifies a student for immediate admission to the MSc programme Industrial Engineering and Management.

3 Exam and interim examinations

3.1 Exam

The B-IEM Bachelor's programme is successfully completed if all the exams of the units of study (modules), including the minor, have been taken successfully. For a module the exam grade is

determined based on the module test plan, defined by the module coordinator. The following rules apply:

- The exam grade is at least 5.5 to finish the module successfully. In SIS the module grade is rounded towards the nearest integer;
- The project grade and the grades of module components are at least 5.5 (or a Pass for pass/fail components), unless described otherwise in the test plan;
- The module coordinator determines in the test scheme if and what compensation regulation is applied in the module;
- If a module component grade is equal to NVD (not completed successfully), the module is not successfully completed.

3.1.1 Final examination: the Bachelor thesis

During the thesis graduation project, students have to work individually and independently on a chosen subject of professional relevance in a company or institution in the Netherlands or abroad. *The individual graduation project* is an external research assignment, in which students have to show that they meet the programme intended learning outcomes. The graduation project involves the assessment of the total research process and of two deliverables, the Bachelor's graduation report and the presentation/defence of the research outcomes. The student is academically supervised by two examiners; an additional external supervisor from the hosting company/organisation takes care of daily supervision. The lead UT examiner is an expert on the assignment subject. The lead UT examiner monitors the progress of the project and grades the work, together with the second UT examiner. Only appointed UT-B-IEM examiners are authorised to grade the project; however, external supervisors are consulted as well. The final grade is based on the criteria of a detailed Bachelor Project Assessment form.

The bachelor thesis assignment has to be finished within the nominal study time (10 weeks). Reasons for delay can be:

- Insufficient level of and/or progress by the student;
- Insufficient (level of) supervision in the specific research topic;
- Special circumstances.

Extra graduation project time can only be authorised by the programme director with a maximum of 50% (5 weeks). The programme director may consult the supervisors and/or study adviser.

If a 'Green Light[4]' has not been obtained within the time set, the assignment may be graded as insufficient. The student then has to do a new assignment. The student can file an appeal at the Examination Board against the decision of the programme director. More information regarding the Bachelor graduation project can be found on the IEM Programme Information Canvas site.

3.2 Assessment formats

The exam format of (module) exams consists of a mixture of assessment methods. These may include individual and group assessment (various forms) of practical exercises, written test and reports, different forms of presentations (poster, verbal, paper).

[4] The thesis is regarded by the supervisors to be of sufficient quality to pass with a sufficient grade.

As mentioned before each module is composed of different components which are logically clustered around a particular topic in such a way that the offered knowledge, skills and attitude of different scientific disciplines and approaches are applied in the project. Each module contains interim tests per module component, that contribute to one integrated module grade (see Table 2 in Section 1.1). The module exam grade is registered if all module components are successfully finished.

More programme specific information on the validity of results can be found in Section 7.2.

3.3 Required sequence of exams / prerequisites

The formal sequence of the modules and their exams is the order as recorded in Table 1. Departing from the order of modules needs approval from the study adviser on behalf of the programme director.

4 General Information

4.1 Admission to the programme

In addition to the stipulations in Article 4 of the Common Elements of this EER and the admission regulations laid down in the 'Colloquium Doctum', there are no extra statutory requirements.

4.2 Language of teaching and exams

The B-IEM programme is taught in English. All course materials (textbooks, readers, etc.) will be in English as well as the tests, exams and practical exercises.

4.3 International agreements

The B-IEM programme and its staff cooperate internationally with a large number of institutes and companies. Students are stimulated to benefit from this cooperation for their international experience. The options for an international experience are:

- Study abroad: In the first semester of the third year students can choose for a semester (30 EC) study abroad (exchange) at partner universities. Arrangements for study abroad at non-partner universities are subject to special procedures and requirements as specified on the UT study abroad website, www.utwente.nl/en/study-abroad. Detailed information on Faculty level can be found on the website www.utwente.nl/en/bms/education/study-abroad/ and the BMS Study Abroad Canvas site;
- The minor 'crossing boarders' gives students the opportunity to go abroad for a field study or a study tour. For more information we refer to the website www.utwente.nl/minor;
- Executing a bachelor thesis project abroad. Students can organise a thesis project on their own initiative. The thesis project needs approval from the supervisor before the start of the project execution.

4.4 Elective programme space

During the third year students have the following choices, provided they have obtained 75EC:

- Students can choose to do two 15 EC minor modules. Offered at the UT are: High Tech Human Touch minors, the Crossing Border minor, join-in minors[5] and the 'leren lesgeven' minor (in Dutch only). Minors may have admission requirements. For more information see the website www.utwente.nl/minor and the minor matrix;
- An additional choice is participation at the excellence programme at University level (https://www.utwente.nl/en/excellence/), see the IEM Programme Information Canvas site
- Students can choose to study abroad within their minor space. The courses are to be approved by the programme director with mandate of the Examination Board. For more information see Section 4.3.
- Students can choose the subject of their Bachelor thesis project and the country in which they would like to execute their research.

Students can participate in UT minors without approval of the Examination Board or the programme director. The exchange programme for study abroad needs approval of the programme director, on behalf of the Examination Board.

4.5 Composition of the Programme Committee

For the BSc and MSc programme Industrial Engineering and Management a programme committee (PC) is appointed by the Faculty Board. The committee is the advisory board for the programme director. The PC consists of students and lectures from the programmes on an equal basis. The members of the committee can be found on the website, https://www.utwente.nl/en/iem/programme-committee/

Tasks of the PC are:

- Advising (the programme director) on stimulating and ensuring the quality of the degree programme (WHW art 9.18);
- Advising on teaching and examination regulations (EER);
- Assessing the manner in which the EER is carried out;
- Advising (invited or not invited) on teaching and education issues related to both BSc and MSc programme.

For detailed information we refer to Art. 9.18 of the Higher Education and Research Act.

4.6 Composition of the Examination Board (EB)

The EB Management Science is the body that determines in an objective and expert manner whether a student meets the conditions set under the EER concerning the knowledge, comprehension and skills required to obtain a degree for the BSc IEM programme. The EB's main tasks are described in the common elements of this EER. The members of the EB, appointed by the Dean, and contact information can be found on the website: https://www.utwente.nl/en/bms/examboard/.

4.6.1 Fraud/plagiarism

The Education and Examination Regulation (EER) includes handling of cases of alleged fraud, which is also covered in the Rules and Guidelines of the Examination Board. At the programme level, students are

[5] Be aware that the math components of modules might overlap. See Section 7.4 for possible solutions.

instructed about fraud and plagiarism in several ways. For written exams, IEM works with external observers and examiners. For written assignment work, IEM lecturers can use a digital fraud scanner.

Although formally re-using one's own work is not considered fraud, submitting work from earlier years is not allowed in the B-IEM programme. When fraud is detected the Examination Board will assess and rule on the case.

5 Transitional arrangement

Language of the thesis and colloquium: For cohort 2017 and older, it is allowed to write the thesis in Dutch, provided the examiners are Dutch. The same students are allowed to execute the colloquium in Dutch when no non-Dutch speaking persons are in the audience. This arrangement will be terminated at the start of the academic year 2020-2021 for all cohorts.

6 Study Advise first year (Binding Study Advise)

As formulated in the Common EER, Article 6.3, students get a (binding) recommendation regarding their study progress during the first year and on the continuation of studies at the end of the first year. This recommendation is based on the number of successfully finished modules and ECs together with the advice of the study adviser to the programme director. **A negative recommendation at the end of the first year is binding**. A student who receives a negative (binding) recommendation cannot enrol in the B-IEM programme for the next three academic years. A positive recommendation at the end of the first year is given if the student meets the criteria below.

A positive recommendation on the continuation of studies for the B-IEM programme can be attained in two ways:

1. The student has successfully finished 75% of the first year study load, as defined in the common EER Article 6.3, paragraph 3.
2. The student meets <u>all</u> of the following criteria:
   A. At least 75% of the total study load has been finished successfully (based on the weights of the tests graded with at least a 5.5 and all tests from successfully finished modules);
   B. Two modules have been completed successfully;
   C. For each module the project has been completed successfully;
   D. Of the two not successfully finished modules, at least for one module the student <u>only failed one individual test</u>[6]<u>;</u>
   E. At least six out of the eight below mentioned tests have been passed (passing a test means that its result is at least 5.5 or the test is part of a successfully finished module):
      i. Three Mathematic tests (M1, M2, M4)
      ii. Three Statistics and Probability tests (M1, M3, M4)
      iii. One Operations Research test (M2)
      iv. One Demand/Supply Planning, Inventory test (M4)

[6] Note: the skills part of a module also counts as an individual test.

Obtaining a positive BSA through calculation 2 does not imply that the results of the module components of the not finished modules are declared indefinitely valid. In some cases, however, the validity of module components may be extended (see Section 7.3). The programme director has to approve the positive recommendation on the continuation of studies. If a student de-enrols before February 1st, the student is not allowed to enrol in B-IEM modules until the next academic year.

7 Additional subjects

7.1 Graduation with distinction (Cum laude)

The B-IEM programme has a regulation for graduating with distinction for the bachelor's degree programme. If during the Bachelor's examination, the student has given evidence of exceptional capability, 'cum laude' (with distinction) will be recorded on the degree certificate. A student is considered to have exceptional capability if each of the following conditions is met:

a) The weighted average grade awarded for the individual tests, as registered in SIS, for the study units of the first year (B1), the second year (B2) and Module 11 of the third year (B3), is at least 8.0. To calculate this weighted average grade, the weights in SIS are used;
b) In the determination of this average, the units or individual tests that were not evaluated with a numerical grade or for which an exemption was granted, are not taken into account. Also the grade of the Bachelor thesis is not included in the calculation;
c) No individual test of a study unit was evaluated as fail or evaluated with a grade < 5.5;
d) The grade for the Bachelor thesis is at least an 8;
e) The programme must have been completed within four years, unless special circumstances justify the delay, to be determined by the Examination Board.

In exceptional cases the Examination Board may grant the designation of 'graduation with distinction' if the conditions mentioned above have not been fully met. The rules applied by the Examination Board can be found in the Rules & Regulations of the Examination Board.

7.2 Validity of test results

Only the following grades remain valid:

1) The grades of successfully completed modules
2) In Modules 1,2,4 and 7:
    a. The grades of the 'Mathematics' components;
    b. The grades of all other module components, if they are all successfully completed according to the assessment schedule.

Under specific conditions, the B-IEM programme offers an additional extension of the validity of test results with one year (see Section 7.3). Units of study that have been successfully completed, or parts of successfully finished units of study, cannot be done again.

7.3 Extension of validity of test results with one year

Starting point of the rule to extend the validity of test results with one year is that students should preferably finish 60EC each year, or at least 45EC each year, so they will graduate within four years. Student's study progress will be checked each year in August. To prevent inequitable study delay the B-

IEM programme applies the rules as specified in Sections 7.3.1 to 7.3.3 as agreed on with the Examination Board in 2014.

7.3.1 Extension for unfinished B1 (first year) and B2 (second year) modules

To be allowed to have approval for the extension of the validity of results of a not successfully completed module with one year, a student has to meet the following criteria:

- A minimum of 75% of the yearly study load has been finished successfully (based on the weights of the tests);
- Two modules of the student's current academic year have been finished completely. 'Modules of the student's current academic year' means: modules of the first year (B1) of the B-IEM programme for students in their first year of enrolment, modules of the second year (B2) of the B-IEM programme for students in their second year of enrolment[7].
- In this module, the student failed only one individual test.

If a student meets the above mentioned criteria, the failed test will be offered during the next academic year. The compensation rules, as determined by the module coordinator and stated in the module description, in force during the academic year the student enrolled in the module the first time, will still be in force.

If the student does not successfully complete the failed test during the next academic year, (s)he will have to redo the entire module (except for successfully finished parts of this module of which the results remain valid).

7.3.2 Extension for third year modules

The third year (B3) consists of two elective modules, the thesis preparation and the thesis project.

- For the elective modules the rules of the offering programme are applicable;
- B-IEM offers the elective HTHT module: Aerospace Management & Operations. For this module the lecturer determines the test opportunities which will be described in the module manual on the Canvas site[8];
- Module 11: Preparation Thesis is flexible and individual. For specific information we refer to its Canvas site;
- Module 12: Thesis is flexible and individual. See its Canvas site.

7.3.3 Special circumstances

Personal circumstances can lead to adjustment of the criteria for extension of the validity of test results. The conditions set for such extensions depend on the situation of the student. In any case conditions are:

- The student reports the disability or (foreseen) personal circumstances to the study adviser (preferably beforehand or as soon as possible);

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[7] For second year students it is advised to complete (not yet finished) first year modules first. These are therefore seen as modules of 'the current academic year', and count when determining this requirement.

[8] In 2019 the HTHT module Aerospace Management & Operations will not be offered. However, students eligible for a re-take of a module part can contact the programme management to make arragements.

- The Examination Board recognises the special circumstances;
- The maximum extension of the validity of test results is one academic year (the year following the year in which the delay is requested) unless the Examination Board decides otherwise.

In case of extreme, unforeseen circumstances, , the Examination Board will be asked for advice. The programme director takes the final decision. The study adviser can be consulted for extra information and advice.

7.3.4 TOM 2.0 in 2020-2021

Starting in the academic year 2020-2021, the educational model of the University of Twente is likely to change. In the new educational model (TOM 2.0), the Units of Study will be module components instead of the current Units of Study, which are modules. This means that starting in the academic year 2020-2021, results for module components that are successfully completed remain valid indefinitely.
Be aware that the validity of the results attained in the current academic year will be determined as specified in Sections 7.3.1 and 7.3.2.

7.4 Overlap of math components in modules

In some cases, due to changing to another study programme or choosing a minor module, an overlap in the math module component shared with the other technical programmes may occur. In these cases the following rules apply:

- **B-IEM student takes a technical minor course:**
  In case of overlap in a minor module still to be finished, the overlapping math component must be removed from that module, reducing the ECs for this module. The module coordinator needs to fill in a grade form stating the remaining EC for the module without the math component. The student is to submit this form to BOZ (Educational Affairs Office) for registration in the study programme. A replacement course must be taken, with permission of the study adviser, and added to the study programme.
- **Student finishes a module, after that switches to B-IEM and wishes to incorporate the module in the minor of his/her B-IEM programme:**
  When a finished module of a previously taken programme is to be incorporated in the B-IEM study programme as a minor module, the math component cannot be removed from the original module. In this case, the overlapping math component must be removed from the unfinished module of the current programme. The number of ECs for this module will be reduced, the module coordinator needs to fill in a grade form stating the remaining EC for the module without the math component. A replacement course must be taken, with permission of the study adviser, and added to the study programme.
- **Student took a module, after that switches to B-IEM and does not wish to incorporate the module in the minor of his B-IEM programme:**
  If there is overlap due to a previously taken module that will not be incorporated as a minor, the overlapping math can be the basis to ask for an exemption in the B-IEM programme. The student can ask for this exemption at the Examination Board Management Sciences (see https://www.utwente.nl/en/bms/examboard/for-students/). In this case, the math grade cannot be transferred; it will be registered as exempted.

All arrangements have to be initiated by the student.