Hochschule Aalen

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Study and Examination Regulations for Master's Degree Programs at Aalen University (SPO 30)

dated July 15, 2013

in the version of May 24, 202 4

Based on § 8 para. 5 in conjunction with § 32 of the Baden-Württemberg Higher Education Act (Landeshochschulgesetz LHG) in the version of January 1, 2005 (GBl. p.1), last amended by Article 1 of the Act of April 1, 2014 (GBl. p.99), in the version from April 9, 2004, the Senate of Aalen University - Engineering and Business decided on the following examination regulations on July 10, 2013. The Rector approved these study and examination regulations (SPO 30) by decree dated July 15, 2013.

On January 15, 2014, the Senate of Aalen University - Engineering and Business passed the 1st amendment to the study and examination regulations for Master's degree programs (SPO 30). By decree dated January 22, 2014, the Rector approved this amendment to the study and examination regulations.

On April 9, 2014, the Senate of Aalen University - Engineering and Business adopted the 2nd amendment to the Study and Examination Regulations for Master's Degree Programs (SPO 30). By decree dated April 28, 2014, the Rector approved this amendment to the study and examination regulations.

On July 16, 2014, the Senate of Aalen University - Engineering and Business adopted the 3rd amendment to the Study and Examination Regulations for Master's Degree Programs (SPO 30). By decree dated August 22, 2014, the Rector approved this amendment to the study and examination regulations.

On January 28, 2015, the Senate of Aalen University - Engineering and Business adopted the 4th amendment to the Study and Examination Regulations for Master's Degree Programs (SPO 30). By decree dated February 25, 2015, the Rector approved this amendment to the study and examination regulations.

On April 29, 2015, the Senate of Aalen University - Engineering and Business passed the 5th amendment to the study and examination regulations for Master's degree programs (SPO 30). By decree dated June 23, 2015, the Rector approved this amendment to the study and examination regulations.

On June 24, 2015, the Senate of Aalen University - Engineering and Business adopted the 6th amendment to the Study and Examination Regulations for Master's Degree Programs (SPO 30). By decree dated August 14, 2015, the Rector approved this amendment to the study and examination regulations.

On December 2, 2015, the Senate of Aalen University - Engineering and Business adopted the 7th amendment to the Study and Examination Regulations for Master's

Degree Programs (SPO 30). By decree dated December 22, 2015, the Rector approved this amendment to the study and examination regulations.

On January 27, 2016, the Senate of Aalen University - Engineering and Business adopted the 8th amendment to the Study and Examination Regulations for Master's Degree Programs (SPO 30). By decree dated March 4, 2016, the Rector approved this amendment to the study and examination regulations.

On June 8, 2016, the Senate of Aalen University - Engineering and Business adopted the 9th amendment to the Study and Examination Regulations for Master's Degree Programs (SPO 30). By decree dated July 18, 2016, the Rector approved this amendment to the study and examination regulations.

On November 30, 2016, the Senate of Aalen University - Engineering and Business adopted the 10th amendment to the Study and Examination Regulations for Master's Degree Programs (SPO 30). By decree dated December 9, 2016, the Rector approved this amendment to the study and examination regulations.

On May 31, 2017, the Senate of Aalen University - Engineering and Business adopted the 11th amendment to the Study and Examination Regulations for Master's Degree Programs (SPO 30). By decree dated June 9, 2017, the Rector approved this amendment to the study and examination regulations.

On January 31, 2018, the Senate of Aalen University - Engineering and Business adopted the 12th amendment to the Study and Examination Regulations for Master's Degree Programs (SPO 30). By decree dated March 21, 2018, the Rector approved this amendment to the study and examination regulations.

On April 25, 2018, the Senate of Aalen University - Engineering and Business adopted the 13th amendment to the Study and Examination Regulations for Master's Degree Programs (SPO 30). By decree dated May 16, 2018, the Rector approved this amendment to the study and examination regulations.

On October 30, 2019, the Senate of Aalen University - Engineering and Business adopted the 14th amendment to the Study and Examination Regulations for Master's Degree Programs (SPO 30). By decree dated December 4, 2019, the Rector approved this amendment to the study and examination regulations.

On November 20, 2019, the Senate of Aalen University - Engineering and Business adopted the 15th amendment to the Study and Examination Regulations for Master's degree programs (SPO 30). By decree dated December 4, 2019, the Rector approved this amendment to the study and examination regulations.

On January 29, 2020, the Senate of Aalen University - Engineering and Business decided on the 16th amendment to the Study and Examination Regulations for Master's Degree Programs (SPO 30). By decree dated March 4, 2020, the Rector approved this amendment to the study and examination regulations.

On April 29, 2020, the Senate of Aalen University - Engineering and Business adopted the 17th amendment to the Study and Examination Regulations for Master's Degree Programs (SPO 30). By decree dated May 6, 2020, the Rector approved this amendment to the study and examination regulations.

On February 10, 2021, the Senate of Aalen University - Engineering and Business adopted the 18th amendment to the Study and Examination Regulations for Master's Degree Programs (SPO 30). By decree dated February 22, 2021, the Rector approved this amendment to the study and examination regulations.

On April 14, 2021, the Senate of Aalen University - Engineering and Business adopted the 19th amendment to the Study and Examination Regulations for Master's Degree Programs (SPO 30). By decree dated April 28, 2021, the Rector approved this amendment to the study and examination regulations.

On October 26, 2022, the Senate of Aalen University - Engineering and Business approved the 20th amendment to the Study and Examination Regulations for Master's Degree Programs (SPO 30). By decree dated November 3, 2022, the Rector approved this amendment to the study and examination regulations.

On November 16, 2022, the Senate of Aalen University - Engineering and Business adopted the 21st amendment to the Study and Examination Regulations (SPO 30). By decree dated November 23, 2022, the Rector approved this amendment to the Study and Examination Regulations.

On June 28, 2023, the Senate of Aalen University - Engineering and Business approved the 22nd amendment to the Study and Examination Regulations (SPO 30). By order dated July 5, 2023, the Rector approved this amendment to the Study and Examination Regulations.

On May 15, 2024, the Senate of Aalen University - Engineering and Business passed the 23rd amendment to the Study and Examination Regulations (SPO 30). By decree dated May 24, 2024, the Rector approved this amendment to the Study and Examination Regulations.

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A. General part

§ 1a Scope of application

(1) These study and examination regulations apply to the Master's degree program:

1. Polymer Technology (consecutive) (PTC)
2. Technology Management (TMM)
3. Lightweight Construction (LBM)
4. Management (MIB)
5. Business Informatics (consecutive) (WIB)
6. Business Informatics (consecutive) (WIC)
7. Vision Science and Business (VSB)
8. Product Development and Manufacturing (PEF)
9. Ophthalmic Optics and Psychophysics (AOP)
10. Photonics (PH)
11. SME Management (MM)
12. International Marketing and Sales (MI)
13. Health Management (MH)
14. Applied Management Science (AMS)
15. Industrial Management (IDM)
16. Computer Science (MIN)
17. Advanced Materials and Manufacturing (AMM)
18. Business Development (Product and Start-up Management) (MBD)
19. Advanced Systems Design (Systems Engineering) (MSD)
20. Auditing, Finance & Governance (MAG)
21. IT Security Management (continuing education/training) (ITS)
22. Analytical and Bioanalytical Chemistry

(2) The office and function designations refer equally to women and men; otherwise, Section 11 (7) LHG applies accordingly.

§ Section 1 b General admission requirements

(1) Admission to the Master's degree program can only be granted to those who

1. fulfill the requirements for admission in accordance with the statutes for the university's own selection procedure for the respective Master's degree program
2. have completed any pre-study work experience defined in the relevant admission regulations,
3. submits a declaration stating whether a Master's examination has already been definitively failed in the same degree program or in a degree program determined by the university's statutes in accordance with Section 60 (2) No. 2 LHG at a university within the scope of the Basic Law.
4. provided there are no deviating regulations in the special section or in the corresponding module description.

Further admission requirements for the Master's degree programs are regulated in the respective selection statutes of the Master's degree programs as well as the Higher Education Admission Act (HZG) and the HVVO (Hochschulvergabeverordnung).

Module examinations or partial examinations can only be taken by students who are enrolled in the current semester. This also applies to the Master's thesis.

(2) Applicants with a university degree of at least 180 and less than 210 credit points will only be admitted on the condition that they earn the difference between the credit points already earned and the 210 credit points required in para. 1 no. 1 during the Master's degree program. The form in which these additional credits are to be acquired is regulated in the special section. In this case, the degree program is extended by one semester. If this is not regulated in the special section or in the associated admission regulations, the examination board of the degree program will decide on a case-by-case basis.

I. Section - General

§ Section 2 Standard period of study, course structure and number of hours

(1) The standard period of study for full-time consecutive degree courses in accordance with Section 1 (1) No. 1-4, No. 6, No. 8 to 12, No. 14 to 20 and No. 22 is three semesters or a maximum of six semesters for part-time students, five or six semesters for continuing education/part-time degree courses in accordance with Section 1 (1) No. 5 and No. 21, and four semesters for continuing education/part-time degree courses in accordance with Section 1 (1) No. 7 and No. 13. Deviations are regulated in the special section. An academic year consists of two consecutive semesters (winter semester and summer semester).

(2) Studies in the Master's degree programs according to § 1 para. 1 - 17 are divided into the semesters and study sections specified in the special section. It comprises the theoretical semesters and the module examinations or module components including the Master's thesis.

(3) The compulsory area comprises the modules or module components which must be studied in the individual semesters. The compulsory elective area comprises the modules or module components which students must select from the courses offered in the prescribed manner in the individual semesters of study. The total scope of the modules or module components required for the successful completion of the degree course in the compulsory and compulsory elective area in semester hours per week is specified in the special section. In addition, the assigned credit points must be indicated.

(4) The degree program has a modular structure. A module refers to a study unit consisting of one or more partial achievements (courses), which either build on each other methodically or belong together in terms of content. Among other things, block courses can also be defined as part of a module within the framework of so-called international weeks, summer schools, etc.

(5) The content of a module is designed so that it can be taught within one semester or within two consecutive semesters. A module examination must be taken for each module in accordance with §§ 15, 16. Deviating regulations must be justified in the corresponding module descriptions.

(6) Proof of at least 300 credit points in total (Bachelor's degree course and Master's degree course) and 90 credit points in the Master's degree course is required for the successful completion of a Master's degree course. Deviations are listed separately.

(7) The order and type of modules or module components specified in the special section may be changed in individual cases per semester by resolution of the faculty for compelling reasons.

§ 3 Examination structure

(1) The Master's examination consists of the modules or module components listed in the special section and the Master's thesis. Modules consist of one or more module components in an examination subject or in an interdisciplinary examination area. The modules of the Master's examination and the individual module components are specified in the special section. As a rule, modules are examined in conjunction with and with reference to the content of the courses (course-related examinations).

(2) A module examination or partial module examination concludes with a cross-course examination (module examination). If a module consists of several courses that are examined in individual module examinations, this must be defined and separately justified in the module description.

(3) In the special section, the coursework assigned to the individual modules / partial examinations of the semesters that must be completed for admission to the Master's examination is specified for each compulsory and compulsory elective area.

§ 4 Deadlines

(1) The module examinations or module part examinations for the Master's examination should be completed by the semester specified in the special section. The module examinations or partial module examinations may also be taken before the set deadlines provided that any necessary requirements are met. Students are responsible for meeting the deadlines; the university does not draw attention to impending missed deadlines.

(2) At the request of a student to the responsible examination board, the maternity protection periods as stipulated in the applicable law for the protection of working mothers (MuSchG) must be taken into account. The application must be accompanied by the necessary evidence. The maternity protection periods interrupt any period according to this SPO; the duration of maternity protection is not included in the period.

(3) Likewise, the deadlines for parental leave in accordance with the applicable law on the granting of child-raising allowance and parental leave (BEEG) must be taken into account upon application. The student must inform the responsible Examination Board in writing of the period or periods of parental leave they wish to take no later than four weeks before the date from which they wish to take parental leave, enclosing the necessary evidence. The student must be informed immediately of any new examination deadlines. The deadline for completing the Master's thesis cannot be interrupted by parental leave. The topic provided is deemed not to have been assigned. At the end of parental leave, the student will receive a new topic.

(4) An activity as an elected member of statutory committees, statutory bodies of the university or the student union for at least one year can be taken into account on request for up to one academic year when calculating the examination deadlines; the decision on this is made by the Chair of the Board (Section 32 (6) LHG).

§ Section 4 a Loss of entitlement to examinations

(1) The right to take examinations and admission to the degree program expires if the module examinations or specified partial examinations for the Master's examination have not been completed at the latest three semesters after the date specified in para. 1, unless the student is not responsible for exceeding the deadline. (§ 32 para. 5 LHG).

(2) Students will be informed in good time by the relevant degree program about the type and number of module examinations or partial examinations to be completed as well as the dates on which they are to be completed and also about the date of completion and submission of the Master's thesis and, if applicable, about the examination modalities of the oral Master's examination (colloquium).

(3) For students who are in the 6th or higher semester in the winter semester 2015 and who have lost their right to take examinations due to exceeding the time limit by more than three semesters, the right to admission to examinations for the Master's examination shall remain in force for a maximum of one year after the time of exceeding the time limit (para. 3), provided that they are not part of the course (e.g. Master's thesis) and provided that the examinations required in the current version of the study and examination regulations had already been completed at the time of exceeding the time limit. This regulation does not apply to students who are in their 5th semester or a lower semester in the winter semester 2015.

§ 5 Credit points and scope of learning

(1) Aalen University applies the "European Credit Transfer System (ECTS)". In accordance with the ECTS, credit points describe the average amount of time required to successfully complete a module. 1 credit point corresponds to a workload of 30 working hours.

(2) Credit points are allocated to the modules in the special section according to the workload of the students due to courses, preparatory and follow-up work, exam preparation and exams as well as practical work. Credit points are only awarded if all partial achievements of the respective module have been completed. Accordingly, credit points are awarded for the successful Master's thesis or for the successful oral Master's examination (colloquium) in accordance with the special section.

(3) The workload for one semester is usually 30 credit points. 90 credit points are required to pass the Master's examination. Exceptions are regulated in the special section.

(4) The workload of all modules and any module examinations is defined in module descriptions (in accordance with ECTS). The module descriptions are provided in German and/or, if applicable, in English and must be made available to students in an appropriate form.

§ 6 Teaching and examination languages

In the degree programs according to § 1, courses and examinations (module examinations, partial module examinations, Master's thesis, oral Master's examination (colloquium)) can generally be offered in German, alternately in German and English or exclusively in English. In the case of coursework and examinations with alternating languages, assignments are offered and solutions accepted in both languages. Further details are regulated in the special section.

II. Section - General examination bodies and responsibilities

§ Section 7 a Faculty Council

The Faculty Council advises and decides on all matters of fundamental importance to the faculty (Section 25 LHG).

Among other things, the approval of the Faculty Council is required for

a) Initial version of the special parts of the study and examination regulations of the Faculty's degree programs; approval requires the agreement of the responsible Study Commission.

b) Other changes to the special parts of existing study and examination regulations that require the approval of the Senate. The Central Examination Office must be involved in an advisory capacity.

c) Initial version of the admission statutes of the Faculty's degree programs. The Central Admissions and Recognition Office must be involved in an advisory capacity.

d) Other changes to the Faculty's admission statutes or program-specific parts of Aalen University's own selection procedure that affect the Faculty. The Central Admissions and Recognition Office must be involved in an advisory capacity

§ 7 b Examination board

(1) For the organization of Master's examinations and the tasks assigned by the study and examination regulations, an examination board is formed for each degree program; a joint examination board can be formed for related degree programs.

(2) According to para. 1, 1st half-sentence, the Examination Board consists of

- the chairperson,
- the dean(s) of studies,
- and four professors,

The chairperson and the four other professors are appointed by the faculty council to which the degree program is assigned from among the professors of this faculty and the professors of other faculties who regularly teach courses in the degree program.

(3) If a joint examination board is formed in accordance with Section 7 b (1), 2nd half-sentence, the examination board shall consist of

a) the chairperson

b) the deans of studies of the degree programs or, in the case of study areas, the respective dean of studies and the associated degree program coordinators

c) and three other professors

The chairperson and the three other professors are appointed by the Faculty Council, to which the vast majority of the related degree programs are assigned, from among the professors of this faculty and the professors of other faculties who regularly teach courses in the degree programs.

(4) Other professors, lecturers, the head of the Central Examination Office (or the person appointed for this purpose in accordance with Section 7 b of these statutes) and teaching staff for special tasks may be consulted in an advisory capacity. The term of office of the members corresponds to that of the Faculty Board and is four years. The Examination Board appoints a deputy chairperson from among the appointed members.

(5) Each member of the Examination Board in accordance with Section 7 b (2) or (3) has only one vote, irrespective of any double function within the scope of their duties. Votes may not be delegated to other members of the Audit Committee.

(6) The Examination Board shall ensure that the provisions of the study and examination regulations are complied with. At the request of the faculty, the Examination Board reports on the development of examination and study times as well as the distribution of module and overall grades. The Examination Board makes suggestions for the reform of the curriculum and the study and examination regulations. The Examination Board may delegate certain of its tasks to the Chairperson.

The Examination Board has the following tasks in particular:

1. Initial examination and resolution of the module descriptions for new study and examination regulations in agreement with the module supervisors/teachers; in cases pursuant to Section 22 a

(4), the Examination Board may only pass resolutions with regard to the organization of teaching and the establishment of and compliance with study and examination regulations in accordance with Section 3 of the State Higher Education Act (LHG).

2. Implementation of the changes to the study and examination regulations decided by the Faculty Council and Senate of Aalen University in the respective module descriptions; the Chair of the Examination Board is responsible for the prompt implementation. He or she can delegate this task to the module coordinator or other responsible persons. The module descriptions must be made known to the students in good time and in a suitable form or made accessible to the students.
3. Consultation and decision-making on changes to the module descriptions. Resolutions on amendments to existing study and examination regulations and module descriptions are passed in accordance with Section 22 a;
4. Appointment of examiners and assessors;
5. Deciding on the recognition of periods of study, credits and modules and, if applicable, partial credits;
6. Decisions on the extension of deadlines for the Master's thesis in accordance with § 25 Para. 6, on failure and withdrawal in accordance with § 19, cheating in accordance with § 20 and the invalidity of the Master's certificate and the Master's certificate in accordance with § 32 of these regulations;
7. Support in objection procedures in study and examination matters; (The Prorector for Teaching is responsible for deciding on objections in study and examination matters);
8. Decision on a second repetition of module examinations and, if applicable, partial examinations in accordance with § 18 and on the expiry of the right to take examinations and admission to studies in accordance with § 28 para. 4 LHG.
9. Decision on the submission of a medical certificate,
10. Decision on the approval of withdrawal from examinations.

(7) The members of the Examination Board have the right to be present when examinations are being taken.

(8) The members of the examination board and their deputies are subject to official secrecy. If they are not in public service, they must be sworn to secrecy by the chairperson.

(9) In the event of an objection, the Examination Board issues a statement to the Rectorate.

§ Section 7 c Admission/recognition office of the degree program

(1) An admissions/recognition office is appointed for each degree program for the recognition of achievements during admission and within the scope of the degree program; a joint admissions/recognition office can be appointed for related degree programs.

(2) The admissions/recognition office of the degree program consists of a professor (head) and a deputy. They are appointed by the faculty council to which the degree program is assigned from among the professors of the respective degree program. The term of office of the Head of the Admissions / Recognition Office corresponds to that of the Faculty Board and is four years.

(3) The head of the Admissions/Recognition Office ensures that the provisions and regulations relating to admissions and the recognition of achievements are complied with. At the request of the faculty, the Admissions / Recognition Office reports on developments in the area of admissions and the recognition of achievements. The Admissions / Recognition Office provides suggestions for the reform of admission and recognition practices and the corresponding regulations.

(4) The tasks of the Admissions/Recognition Office are in particular

a) Deciding on the number of admissions, the final target number and the number of applicants to be admitted in consultation with the Dean of Studies of the degree program and the Rectorate.

b) Contact person in the admission and enrollment procedure at Aalen University.

c) Examination and decision on applications for admission to a higher semester as well as the respective recognition of achievements within the scope of these applications.

d) Examination and decision on applications for recognition of achievements during the course of study.

e) System-based recording of recognition cases.

(5) The head of the Admissions/Recognition Office and his/her deputy are bound by official secrecy.

(6) In appeal proceedings, the Admissions / Recognition Office of the degree program submits a statement to the Rectorate.

(7) The tasks of the Admissions and Recognition Office can be transferred in whole or in part to the Dean of Studies, program coordinator, examination board or an academic staff member of the faculty by resolution of the Faculty Council.

§ Section 8 Examiners and assessors

(1) In addition to professors, lecturers and teaching staff for special tasks as well as persons experienced in professional practice and training who themselves have at least the qualification to be determined by the examination or an equivalent qualification may be appointed as examiners. As a rule, the examiner of a module examination or partial module examination is the person who was primarily responsible for the course on which this module examination or partial module examination is based in the semester in question. The examiners of the Master's thesis are to be appointed in accordance with § 25 Para. 2, the examiners of the oral Master's examination (colloquium) are to be appointed in accordance with § 26 a Para. 3.

(2) The person to be examined may propose the examiner or a group of examiners for the Master's thesis and the oral module examinations and, if applicable, partial module examinations. The proposal does not constitute a claim.

(3) The names of the examiners should be announced in good time.

(4) Only those who possess at least the qualification to be determined by the examination or an equivalent qualification shall be appointed as assessors.

(5) The examiners and assessors are subject to official secrecy. If they are not in public service, they must be sworn to secrecy by the chairperson of the examination board.

§ Section 9 Central Examination Board

(1) A Central Examination Board has been established at Aalen University - Engineering and Business. The Central Examination Board is composed of

1. the Rector as Chairperson,
2. Vice-Rector for Teaching,
3. the chairpersons of all examination boards
4. the head of the Central Examination Office (advisory function),
5. the person responsible for creating and amending the study and examination regulations of Aalen University (advisory function).

(2) The Central Examination Board has the following tasks

1. Dealing with legal issues relating to the study and examination regulations,

2. Coordinating the uniform application of the study and examination regulations at the university,
3. Dealing with cross-course examination matters.

§ Section 9 a Central Admissions / Recognition Committee

(1) A central admissions/recognition committee has been set up at Aalen University - Engineering and Business. The Central Admissions/Recognition Committee is composed of

1. the Rector as chairperson,
2. Vice Rector(s) for Teaching,
3. the heads of all admission/recognition offices of the degree programs or the person responsible for the degree program or degree program named in § 10 a the person responsible for the degree program or study area,
4. the head of the Central Admissions/Recognition Office (advisory function)
5. the person responsible for drawing up and amending the study and examination regulations and admission regulations and matriculation regulations of Aalen University (advisory function). function).

(2) The Central Admissions/Recognition Committee has the following tasks:

1. Coordination of the uniform handling of legal requirements in the area of admission and recognition
2. Dealing with cross-course matters and legal issues in the area of admission and recognition.

§ 10 Central Examination Office

(1) A Central Examination Office has been established at Aalen University - Engineering and Business. It reports to the Rectorate.

(2) The tasks of the Central Examination Office are in particular

1. Administrative processing and support of examination registration,
2. Administrative support in the administration of the results of module examinations and, if applicable, partial achievements,
3. administrative support for hardship and exclusion notifications,
4. Administrative handling of objection procedures,
5. Advice on study matters and legal issues relating to study and examination regulations.

§ 10 a Central Admissions and Recognition Office

(1) A central admissions/recognition office has been set up at Aalen University - Engineering and Business. It reports to the Rectorate.

(2) The tasks of the Central Admissions and Recognition Office are in particular

1. Handling admissions in cooperation with the degree programs,
2. Administrative support in the preparation of admission notifications and recognition and rejection notices in the area of recognition.
3. Administrative handling of objection procedures,
4. Advice on legal issues relating to admission and recognition

Section III - Courses, module examinations and partial achievements

§ Section 11 Courses

(1) Lectures, seminars, tutorials and other suitable courses are generally held on site, i.e. with the simultaneous presence of lecturers and students at the university (classroom teaching).

(2) In justified individual cases, face-to-face courses can also be broadcast online at the same time. The decision on the additional online transmission is at the discretion of the lecturer. Students are not entitled to an online transmission.

(3) In consultation with the relevant dean of studies, the rectorate may give its approval for a course to be offered online without the presence of students at the university for all or most of the semester in deviation from paragraph 1. If a course is taught by non-full-time teaching staff, the responsible dean of studies shall grant approval in accordance with sentence 1 instead of the rectorate.

(4) Access to courses transmitted online must be restricted to students who are entitled to participate. Compliance with data protection regulations must be ensured in advance.

§ Section 11 a Registration and admission to module examinations

(1) Examinations are generally taken during the examination period set by the University Senate, outside the lecture period of the respective semester.

(2) Students must register for the individual module examinations or partial module examinations scheduled for the respective semester via the online procedures available to Aalen University or, if applicable, in written form by the end of the 8th week of lectures of the semester at the latest, or in the period specified by the university in the form specified by the university. Deviating regulations are regulated in the special section. As an exception, late examination registrations are possible within the scope of available capacities until the examination registration deadline (para. 8 and 9), two weeks before the examination period set by the Senate of Aalen University, after which registration is excluded. In the case of late registration as defined in sentence 2, participation in the examination cannot be guaranteed, especially if capacities are exhausted. For late examination registration as defined in sentence 2, a fee will be charged in accordance with Aalen University's current fee regulations.

(3) Portfolio examinations must generally be registered with the respective module coordinator/examiner 1 week before the first examination element is completed. Deviating regulations will be announced at the beginning of the courses of the respective module.

(4) Participation in module or partial module examinations (paras. 2 and 3) is not permitted without prior registration, unless the student is not responsible for the failure to register.

(5) As a prerequisite for admission to a module examination or partial module examination, it may be required that other module examinations or partial module examinations have previously been passed. Further regulations are set out in the special section.

(6) Admission to a module examination of the Master's examination can only be granted to those who

1. is admitted to and enrolled in their Master's degree program at Aalen University - Engineering and Business,
2. have not lost their right to take examinations in this degree program,
3. have passed the module examination or partial module examination required in accordance with para. 5.

(7) Admission to a module examination may only be refused if

1. the requirements specified in paragraph 5 are not fulfilled in whole or in part or
2. in the same degree course or in a degree course with essentially the same content determined by the statutes of the university in accordance with § 60 Para. 2 No. 2 LHG, a course-related examination required by the study and examination regulations, the Bachelor's examination has been definitively failed or the person is in an examination procedure or
3. the examination entitlement has expired in accordance with § 32 Para. 4 LHG.

(8) Cancellation of examinations is possible up to two weeks before the examination period set by the Senate of Aalen University via the online procedure available to Aalen University or, if applicable, in written form. Deviating regulations are regulated in the Special Section.

(9) Cancellations of examinations that take place before the examination period set by the Senate of Aalen University can be made in writing to the relevant degree program office up to one week before the examination date.

§ 12 Examinations

(1) Examinations take place on site, i.e. with the simultaneous presence of examiners and students on university premises (attendance examination). In suitable cases, the examiner may conduct a face-to-face examination using electronic information and communication systems (online face-to-face examination). Video supervision (e.g. proctoring) is not permitted for online face-to-face examinations; otherwise, Section 32a (2) of the current version of the State Higher Education Act applies to online face-to-face examinations. Students have no legal entitlement to an online presence examination. The implementation of an online presence examination is subject to the technical possibilities of the university. Sentences 1 to 5 do not apply to examinations which, due to their nature, cannot be conducted on the university premises (e.g. learning diary or internship).

(2) In justified exceptional cases, the rectorate may, in agreement with the chairperson of the relevant examination board, grant permission for an examination to be conducted outside the university using electronic information and communication systems and video supervision (online remote examination). Section 32a and Section 32b of the current version of the State Higher Education Act also apply to online remote examinations; in particular, it must be ensured that the online remote examination is voluntary for students. The Rectorate may transfer the responsibility for approving oral online distance examinations in general or in individual cases to the chairperson of the relevant examination board. Students are not entitled to an online remote examination.

(3) Minutes must be taken during examinations, in which at least the name of the minute taker, the start and end of the examination and any special incidents must be recorded In the case of oral examinations, the main subjects, results and the course of the examination must also be recorded.

§ Section 12 a Types of examination

(1) The type of examination required as proof of a module examination is specified in the module descriptions for the respective degree programs. Module examinations can be

abbreviation	Name	Definition
PLS	Term paper / research report	Written elaboration, which does not necessarily overlap directly with the course content (e.g. seminar papers)
PLM	Oral examination	Examination discussion in oral form (classical manner) / in dialog with the student. The questions and tasks are based on the course content.

PLK	written written examination	written paper - open questions are set within the examination or an individual question or a "case" is presented. All variants are based on the course content
PLR	Presentation	The presentation is a discussion of a problem from the working context of the course with the inclusion and evaluation of relevant literature. The presentation consists of a written and / or an oral presentation.
PLL	Laboratory work	Practical activity within a laboratory. The results of this activity are usually recorded in the form of written papers, measurement protocols or a laboratory report. The content of the laboratory work is based on the actual course content and can include basic and in-depth knowledge dimensions.
PLE	Draft	The draft usually contains a written description of a given problem. Results for solving the problem are recorded in the form of written elaborations, sketches or drafts.
PLA	Practical work	Practical work primarily involves the application of technical skills in laboratories or similar.
PLT	Learning diary	Record perceptions, sensations, reflections and encounters on a daily basis and accompany the individual experience process in writing
PLF	Portfolio	Collection of coordinated achievements on a defined topic, usually in the form of a workbook. (e.g. work results, presentations, working papers, etc.)
PLP	Project	Project work essentially combines the characteristics of a written paper (or presentation) and an oral paper. Tasks/topics are assigned as project work. The content of the project work can build on the course content as well as deepen it.
PPR	Internship	e.g. practical semester
PMC	Multiple Choice	Examination in which the pass mark can only be achieved by marking the correct or incorrect answers

can be achieved. Written module examinations using the multiple choice method are generally excluded.

(2) The workload for students must be aligned with the qualification objectives and competencies of the modules so that studyability is guaranteed in the individual semesters.

(3) In justified exceptional cases, a module may consist of several partial module examinations in accordance with para. 1.

(4) The module examinations are generally taken during the examination period outside the lecture period of the semester.

(5) If, when registering for the examination, a student can credibly demonstrate that, due to a long-term or permanent physical disability, it is not possible to take module examinations or partial module examinations in full or in part in the intended form, the chairperson of the responsible examination board will allow the student to take the module examinations within an extended processing time or to take an equivalent module examination in a different form. A medical certificate may be required for this purpose.

(6) The module descriptions must be announced in good time before the start of the semester and made available to students in a suitable form.

§ Section 12 b Preliminary work (formative learning process)

In addition to § 12, in justified cases, work can also be completed as part of an ungraded preliminary performance (e.g. laboratory exercises, participation in a practical course, test, etc.). These achievements may also be required as a prerequisite for module examinations or partial module examinations.

§ Section 13 Oral examinations

(1) In oral examinations, students should demonstrate that they recognize the interrelationships of the examination area and are able to classify specific questions in these contexts. Furthermore, it should be determined whether they have a broad basic knowledge.

(2) An oral examination (PLM) is an examination interview with an integrated academic discussion.

a) Oral examinations must be taken in front of at least two examiners (peer examination) or in front of one examiner in the presence of an observer as a group examination or as an individual examination. Exceptions must be approved by the respective examination board.

b) The duration of the oral examination is a minimum of 15 minutes and a maximum of 30 minutes for each person to be examined and each subject. Further details may be specified in the special section or in the module description.

(3) Other oral examinations (e.g. papers, presentations, projects, etc.) are oral examinations in which written or other evidence is used to assess performance.

a) The written or other evidence used to assess performance must be submitted to the examiner shortly before or at the other oral examination.

b) Other oral examinations must be taken in front of at least one examiner as a group examination or as an individual examination. Exceptions must be approved by the respective examination board.

c) The duration of the other oral examination is a minimum of 15 minutes and a maximum of 30 minutes for each person to be examined and each subject, with a maximum of 45 minutes for discussion.

d) Further details may be specified in the special section or in the module description.

(4) Students who wish to take the same examination in a later examination period should be admitted as listeners, subject to room conditions, unless the person to be examined objects. However, admission does not extend to the consultation and announcement of the examination results. In the case of an

oral online remote examination, participation as a listener can be guaranteed by connecting; sentences 1 and 2 apply accordingly.

§ Section 14 Written examinations and other written assignments

(1) In the written examinations and other written assignments, students should demonstrate that they are able to solve problems and work on topics using the usual methods of their subject within a limited period of time and with any aids provided. The written examination should also determine whether they have the necessary basic knowledge. A choice of topics may be provided.

(2) A written examination or other written work is a performance that must be completed under supervision and within a set time limit.

(3) The duration of written examinations and other written assignments is specified in the module description.

(4) The duration of a written examination worth 5 credit points is generally a maximum of 240 minutes. For larger modules, the duration of the examination can be adjusted in relation to the credit points.

§ Section 14 a Multiple choice examinations

(1) Written examinations or other written work can be carried out in whole or in part using the multiple choice method.

(2) The multiple-choice examination tasks must be based on the knowledge required for the module and enable reliable examination results. The examination questions shall be prepared jointly by two examiners who themselves possess at least the qualification to be determined by the examination or an equivalent qualification. When setting the examination questions, it must be determined which and how many answers are recognized as correct. The number of answers to be marked in each case must be indicated on the task sheet. If only one of several possible answers is correct, the task is considered solved if only the correct answer is marked. If the marking is missing or incorrect, or if several answers are marked, the task is awarded zero points. If more than one of the possible answers is correct, the task is scored according to the proportion of correct answers. If no answers or too many answers are marked, the task is awarded zero points.

(3) The examination tasks must be checked to see whether they are incorrect in relation to the requirements of the module before the examination result is determined. Incorrect examination tasks are not to be taken into account when determining the examination result. The assessment shall be based on the reduced number of examination tasks. The reduction in the number of examination tasks must not be to the detriment of the candidate. In the course of the assessment of the examination performance, none of the tasks may be assessed with a negative score.

(4) An examination in the multiple-choice procedure is passed if at least 50% (minimum pass mark/minimum number of points) of the intended maximum number of points has been achieved or the number of points achieved is not more than 22% lower than the average examination performance of all candidates taking part in the examination.

(5) The performance in the multiple-choice procedure is to be assessed as follows:

1,0	very good	if 95 - 100 %	of the possible points have been achieved.
1,3	very good	if 90 - <94.9 %	

1,7	good	if 85 - <89.9 %	
2,0	good	if 80 - <84.9 %	
2,3	good	if 75 - <79.9 %	
2,7	satisfactory	if 70 - <74.9 %	
3,0	satisfactory	if 65 - <69.9 %	
3,3	satisfactory	if 60 - <64.9 %	
3,7	sufficient	if 55 - <59.9 %	
4,0	sufficient	if 50 - <54.9 %	
5,0	Not passed	if 0 - 49.9 %	

If the candidate has not achieved the minimum number of points required to pass the examination, the grade is "fail" (5.0).

(6) If the examination consists of both multiple-choice tasks and other tasks, the multiple-choice part is assessed in accordance with paragraphs 2 - 5. The other tasks are assessed according to the usual procedure. The overall assessment is calculated from the weighted results of both parts of the examination, whereby the weighting is based on the proportion of the examination accounted for by each type of task. A failed task part is included in the weighted overall assessment with the grade "insufficient" (5.0). The above regulations on the multiple-choice procedure do not apply if a written examination only contains a small number of multiple-choice items. This is the case if multiple-choice components do not account for more than 15% of the overall examination performance.

§ Section 14 b (unoccupied)

§ Section 14 c Group examination / group work

(1) If an examination is completed jointly by two or more students in the form of group work, the individual contribution to be assessed as an examination must be marked accordingly on the basis of sections, page numbers or other objective criteria, so that a clear distinction can be made that is clearly distinguishable and assessable

(2) An individual grade must be awarded for each student to be examined.

(3) The absence of one or more examination group participants due to illness does not affect the individual grades awarded to the remaining examination group participants.

§ Section 14 d Portfolio examination

(1) The portfolio examination is a standardized form of examination in which students can perform certain tasks in a formative, process-oriented, continuous manner and in various ways within the framework of courses in a module. In this way, the portfolio examination enables an adequate and competence-oriented adaptation of the examination form to the teaching and learning material on the one hand

and, on the other hand, an outstanding way of determining that the respective competence objectives have been achieved.

(2) A portfolio examination is made up of different types of examination elements accompanying the lecture. Up to three examination elements may be required as part of the portfolio examination. By way of derogation from sentence 2, exceptions are possible in particularly justified cases.

(3) Examination components that correspond to or exceed the scope of an oral examination (Section 13) or a written examination (Section 14) in terms of content and/or time are not permitted as part of a portfolio examination. The maximum duration of all examination elements may not exceed the duration of an equivalent individual examination (PLM, PLK).

(4) The type, scope and weighting of the individual examination elements are part of the module descriptions.

(5) The preparation of the module grade, which is awarded as part of a portfolio examination, is regulated in § 14 d Para. 4.

(6) Regulations on exam registration are set out in Section 11 (2) and (3) and regulations on exam deregistration are set out in Section 11 (9) in conjunction with Section 19 (2) and (3). § Section 19 (2) and (3).

(7) If one or more examination elements of a portfolio examination cannot be taken due to illness, the entire examination is deemed to have been failed.

§ 14 e Compulsory attendance

(1) Students are expected to attend courses and study on their own.

(2) Compulsory attendance - regular participation in a course or a defined part of a course

(3) part of a course - may, however, in justified individual cases be anchored in the special section and the respective module description or only in the respective module description. The corresponding justification must be listed in the special section or the module description.

(4) The requirement of regular attendance is fulfilled if students were generally present for at least 75% of the attendance time of the course or a defined part of a course. Deviating regulations can be specified in the relevant module description. Students who care for children or relatives in need of care, or disabled or chronically ill students can also fulfill the attendance requirement with less attendance upon request. The respective examination board will decide on such an application.

(5) The regular attendance of courses or defined parts of a course can be checked in compliance with data protection regulations.
course is only permissible in compliance with data protection regulations

a) as a prerequisite for the award of ECTS points
b) as proof of the active individual or collective participation of students for an examination,
c) in the case of preliminary courses / preliminary work, which serve as proof of the acquisition of required competencies and for admission to examinations.

The student's attendance list is sufficient proof of active and regular participation in lectures or comparable courses.

§ Section 15 Examination dates and examination material

(1) The module examinations or partial module examinations, which are to be completed as written or oral examinations, are completed during the examination period determined by the Senate of Aalen University following the lecture period of the respective semester. If, in justified cases, examinations are scheduled outside of the time specified in sentence 1, the corresponding dates must generally be announced at the beginning of the semester, but no later than 2 weeks before the respective examination date. Exceptions to the examination date are also possible for block courses. The announcement of the respective examination period for block courses is usually made at the beginning of the respective semester or at the latest 2 weeks before the examination date of the respective block course. The exact examination dates of the individual module examinations are announced to the persons to be examined in good time by means of suitable measures.

(2) The examination period decided by the Senate of Aalen University is usually three weeks. The examination period takes place at the end of the respective semester during the lecture-free period. Deviating regulations are decided by the Senate of Aalen University and announced publicly.

(3) The subject of the module examinations or partial module examinations are the subject areas of the courses assigned in accordance with the Special Section or the practical training.

§ 16 Assessment of module examinations / partial module examinations

(1) The grades for the individual graded module examinations are determined by the respective examiners.

(2) not taken

(3) Module examinations or partial module examinations or tutorials can be graded as "passed" or "failed". A corresponding definition must be specified in the module description

(4) The following grades are to be used for the assessment of module examinations or partial module examinations:

- 1 = very good = an outstanding performance;
- 2 = good = a performance that is significantly above the average requirements;
- 3 = satisfactory = a performance that meets average requirements meets average requirements;
- 4 = sufficient = a performance which, despite its shortcomings, still meets the requirements;
- 5 = failed = a performance that no longer meets the requirements no longer meets the requirements.

Individual grades can be increased or decreased by 0.3 to intermediate values in order to differentiate the assessment of the modules; the grades 0.7, 4.3, 4.7 and 5.3 are excluded.

(5) For module examinations that are taken in the form of portfolio examinations, the module grade is based on a points system. Here, points are to be determined for the individual examination elements according to the degree of fulfillment and additionally a table which issues a corresponding grade for the total number of points. The respective details are specified in the module description.

(6) Modules must consist of at least one graded module examination or partial module examination (module grade). If a module consists of several partial module examinations of which only one is graded, the grade of the graded partial examination corresponds to the final grade of the module. If a module consists of several graded partial module examinations, the module grade is calculated from the average of the grades of the individual partial module examinations. The grades of individual partial module examinations are weighted according to the credit points in the special section. Deviating regulations are specified in the special section.

The module grade is as follows:

Grade from - to	Designation	Definition
1,0 - 1,5	very good	very good
1,6 - 2,5	good	good
2,6 - 3,5	Satisfactory	Satisfactory
3,6 - 4,0	Sufficient	Sufficient
4,1 - 5,0	Failed	Fail

(7) In order to provide transparent and coherent information about the performance level of an individual student, Aalen University issues a table with the statistical distribution of the final examinations passed. This includes the grade, the corresponding number of grades, the corresponding percentage and the classification according to ECTS grades. The calculation is based on the cohorts of the last five semesters before the respective module examination and Master's examination passed. Relative ECTS grades are only shown if at least 30 graduates have successfully passed the corresponding module examinations or Master's examinations during this period.

(8) Section 16 applies accordingly to the calculation of the overall grade.

(9) When calculating the average, only the first decimal place after the decimal point is taken into account; all other places are deleted without rounding.

§ 17 Passing and failing a module examination / or partial module examination

(1) A module examination or partial module examination is passed (or completed) if it has been graded at least "sufficient" (4.0).

(2) A module is passed if the associated module examination or all associated partial module examinations have been completed. If a weighting of examinations has been defined in the corresponding module description with regard to the composition of the final grade of the module / partial module examination, this is passed after calculation of the module grade or partial module examination if it has been graded at least "sufficient" (4.0).

(3) If a module examination or partial module examination has not been passed, the examinee will be informed of this. They must also be informed whether and, if so, to what extent and within what period the module examinations or partial module examinations can be repeated. In justified cases, the Examination Board may schedule a new examination date

§ Section 18 Repetition of module examinations / or partial module examinations

(1) It is not permitted to repeat a passed module examination/module part examination.

(2) Failed module examinations/module components may be repeated once, provided that the deadlines specified in 4 are met. Failed attempts at other universities of applied sciences or universities in the Federal Republic of Germany may be credited, provided they are largely equivalent.

(3) A module examination or partial module examination is deemed to have been assessed with 5.0 and is therefore deemed to have been failed if

1. an examination date is missed without a written declaration of withdrawal,
2. the examination is scheduled and the person being examined withdraws without a valid reason,

3. a written or practical module examination or partial module examination is not completed within the specified processing time.

(4) In the cases of § 22, the module examination/module component examination that has not been graded "sufficient" (4.0) or "failed" must be repeated.

(5) The repeat examination can be taken during the examination dates of the following semester.

(6) Repeat examinations are held every semester, provided there are registrations.

(7) At the student's request, the Examination Board may, in justified cases, schedule a new examination date for the repeat examination, irrespective of the examination period at Aalen University.

(8) At the written request of the student, the Examination Board may allow a second resit of failed module examinations or partial module examinations - within the deadlines specified in § 4 - if the previous academic achievements as a whole justify the expectation that the degree program can be successfully completed. Those responsible for the degree program should conduct a study consultation with the students concerned.

(9) The third repetition of a module or partial performance is excluded

(10) Failed ungraded partial module examinations (e.g. tutorials) must be repeated in accordance with the deadlines specified in § 4. In justified cases, the Examination Board may schedule a new examination date.

(11) Students who have applied for a semester of leave due to a semester abroad are entitled to take examinations.

§ 19 Withdrawal and tardiness

(1) Participation in procedures for the completion of scheduled module examinations or partial module examinations that have been registered by students in accordance with § 11 is mandatory.

(2) It is possible to withdraw from scheduled module examinations or partial module examinations up to two weeks before the examination period set by the Senate of Aalen University without giving reasons (§ 11). After this deadline, withdrawal is only possible upon request in exceptional circumstances. Approval is granted by the chairperson of the responsible examination office. Withdrawal from a repeat examination is only possible in exceptional circumstances or in the event of illness (§ 11).

(3) In the case of module examinations or partial module examinations scheduled outside the examination period, students may withdraw from an examination up to one week before the examination date without giving reasons.

(4) It is possible to deregister from a portfolio examination (entire examination with all examination elements) up to the end of the registration period in accordance with § 11. Cancellation of individual examination elements is not permitted.

(5) If an examination is missed without prior deregistration, the reason for missing the examination must be reported immediately in writing and substantiated (within three days of the examination date).

(6) Proof of inability to take the examination due to illness must be provided in the form of a medical certificate based on an examination that was generally carried out on the day of the missed examination. The medical certificate must be submitted to the relevant examination board. This medical certificate must state both the inability to take the examination and the duration of the inability to take the examination. If several examinations are missed during an examination period, the reasons for each individual absence must be reported immediately after the respective examination. However, if it is known at the time the certificate is issued that several examinations will be missed during the period of incapacity for examination, the excuse for all examinations concerned must be submitted

together in advance. In cases of doubt, a certificate from a doctor appointed by the university may be requested. The examination board can arrange a new examination date at short notice.

(7) Withdrawal from one or more examination elements of a portfolio examination due to illness leads to withdrawal from the entire portfolio examination. Results already obtained for individual examination elements of a portfolio examination must be provided again when the examination is retaken.

(8) Withdrawal during an examination is generally excluded. In the event of unforeseen illness that prevents the student from participating in the further examination procedure, the examination may be canceled. The reason for withdrawal must be reported to the examination board immediately in writing and substantiated by a medical certificate from the day of the relevant examination. A decision on the application is the responsibility of the examination board. If the withdrawal is recognized, the examination attempt will be counted as a withdrawal. If the withdrawal is not recognized, the attempt is counted and the examination is graded as "failed"

(9) Insofar as compliance with deadlines for the initial registration for module examinations or partial module examinations, the repetition of module examinations or partial module examinations and the reasons for missing module examinations or partial module examinations, as well as the deregistration from module examinations or partial module examinations is affected, the illness of the student is equivalent to the illness of a child to be cared for by the student. Para. 4 remains unaffected by this.

§ Section 20 Cheating and breach of regulations

(1) If the person being examined attempts to influence the result of their module examinations or partial module examinations by cheating or using unauthorized aids, the examination in question will be assessed as "failed" (5.0). Anyone who disrupts the orderly progress of the examination can be excluded from continuing the examination by the respective examiner or invigilator; in this case, the module examination or module part examination will be assessed as "failed" (5.0).

(2) If examinations are based in whole or in part on other work or publications without the use of verbatim quotations or quotations that are necessary in this respect, stating the source, this is to be regarded as a violation of good academic work (plagiarism) within the meaning of Section 3 (5) LHG.

a) In the case of a slightly negligent violation (simple violation) of the rules of good academic work, in particular in the case of a first-time incorrect or insufficient citation, a discussion will take place between the examiner(s) and the person being examined, in which attention is drawn to the observance of academic honesty. The Chair of the Examination Board must be informed of the discussion. The module examination or partial module examination is assessed as "failed" (5.0).

b) In the event of a grossly negligent or intentional violation of the rules of good academic work, in particular in the repeated case of incorrect or inadequate citation (serious violation) in a module examination or module component examination, this will be assessed as "definitively failed". This leads to ex officio de-registration from the degree program in question.

(3) The person affected by the decision may request within a period of four weeks that the decisions according to paragraph 1 sentences 1 and 2 be reviewed by the Examination Board.

§ Section 21 Crediting towards studies and examinations

(1) Periods of study, coursework and examinations are recognized as periods of study and module examinations without an equivalence assessment if they were completed at a university/university of applied sciences in the Federal Republic of Germany in a comparable degree program. Recognition with conditions may be possible.

(2) When transferring from another university, equivalent institutions or in justified cases, study and examination achievements as well as periods of study according to the Lisbon Convention that do not fall under paragraph 1 are generally recognized, provided that there are no significant differences

between the knowledge and skills acquired and those to be acquired at Aalen University. Non-recognition of study and examination achievements gained at other universities must be justified by Aalen University. Students can only apply for credit transfer if they have not yet taken part in the relevant course or examination at Aalen University for which credit is to be transferred.

(3) Achievements (knowledge and skills) gained outside the university system that are equivalent to those required for the successful completion of a degree program at Aalen University can be credited up to half of the coursework and examinations to be completed in the respective degree program.

(4) Paragraphs 1 and 2 apply accordingly to periods of study, study achievements and examination achievements in state-recognized distance learning courses and at dual universities (vocational academies); paragraph 2 also applies to periods of study, study achievements and examination achievements at technical and engineering colleges and officers' colleges of the former GDR.

(5) If coursework and examinations are credited as periods of study and module examinations, the grades - insofar as the grading systems are comparable - are to be adopted and included in the calculation of the overall grade. In the case of non-comparable grading systems, the note "passed" is included. It is permissible to mark the crediting in the certificate. Credit points are to be awarded for the recognized module examinations in accordance with § 5 and in accordance with the special section.

(6) If coursework, examinations and external work are credited as periods of study and module examinations, the grades - insofar as the grading systems are comparable - are to be adopted and included in the calculation of the overall grade. In the case of non-comparable grading systems or if no grade is available, the note "passed" is included. If no application for recognition is made for the above-mentioned coursework, examination achievements or external achievements, but the student registers for the corresponding examination, subsequent recognition is no longer possible. It is permissible to mark the recognition in the transcript. Credit points are to be awarded for the recognized module examinations in accordance with § 21 and in accordance with the Special Section.

(7) Failed coursework and examinations in a degree program at Aalen University can be officially counted as a failed attempt towards the permitted number of repeat examinations when changing within the major fields of study of a degree program. In the event of a discontinuation and resumption of studies in the same degree program, failed coursework and examinations at Aalen University are to be counted ex officio as failed attempts towards the permitted number of repeat examinations. The Examination Board can also determine this for associated study specializations.

(8) The head of the Admissions and Recognition Office of the degree program decides on the crediting of periods of study, study and examination achievements during the degree program. The international representative of the degree program or the relevant partnership representative may be consulted for advice on the recognition of periods of study, coursework and examinations completed abroad.

(9) If the requirements of paragraphs 1-6 are met, there is a legal entitlement to credit transfer. Recognition is granted upon application. It is the applicant's responsibility to provide the necessary information on the periods of study and examinations to be recognized.

§ Section 21a Application procedure and deadlines

(1) The recognition of periods of study and examinations shall only be granted upon application. The application must be submitted within a period of 6 weeks after the start of lectures of the respective semester in which admission to Aalen University took place or after resuming studies at Aalen University following a semester abroad/studies abroad.

(2) The applicant must be informed of this when applying for admission and the student when applying for a semester abroad/study abroad.

(3) The application must be submitted to the Admissions and Recognition Office assigned to the degree program or to the committee, dean of studies, program coordinator or responsible academic staff member of the faculty appointed by the Faculty Council.

(4) In particularly justified cases, the Admissions and Recognition Office of the degree program or the committee, dean of studies, program coordinator or responsible academic staff member of the faculty appointed by the Faculty Council may deviate from paragraph 1.

(5) In the case of other work completed during the course of study (e.g. summer school), the application for recognition must be submitted within 6 weeks of the start of lectures in the following semester in which the work was completed.

(6) Notwithstanding paragraph 1, in the case of recognition of credits for a major field of study in the main study program, the application for recognition must be submitted within 6 weeks of the start of lectures in the semester in which the major field of study is to be chosen.

§ Section 22 Partial module examinations

(1) A module may consist of several partial module examinations

(2) Partial module examinations or tutorials may be graded or ungraded. A graded partial module examination is passed (or completed) if it has been graded at least "sufficient" (4.0), an ungraded partial module examination is completed if it has been graded "passed". A corresponding definition must be specified in the module description.

(3) If a module is not passed, only the module component examinations that have not been graded "sufficient" (4.0) or "failed" must be repeated.

(4) Failed partial module examinations must be repeated in accordance with the deadlines specified in § 4 Para. 3. In justified cases, the Examination Board may schedule a new examination date.

§ Section 22 a Module descriptions

(1) A full-time professor of the degree program must be appointed as the module supervisor for each module. In cases of doubt, the Examination Board shall appoint the module coordinator.

(2) The module descriptions contain all the necessary information and examination modalities for the respective modules or partial module examinations. They should be made available to students in a suitable form in good time before the start of the semester.

(3) The module descriptions can be revised or amended by resolution of the respective examination board in agreement with the respective module supervisor / lecturer; exceptions to this are para. 4 and § 7b para. 6 no. 1. The member of the Rectorate responsible for teaching can intervene to regulate if necessary.

(4) An update of the module description by the module coordinator is possible in agreement with the lecturer(s) in accordance with Section 3 LHG without a decision by the Examination Board in the following points:

a) Use in degree programs
b) Form of knowledge transfer
c) Permitted aids
d) Teaching content
e) Literature
f) Remarks / Other

IV. Section - Master's examination

§ Section 23 Purpose and implementation

(1) The Master's examination is a research-oriented, academic thesis that should be completed with a high degree of independence. The Master's examination forms the professionally qualifying degree of the Master's degree program. The Master's examination determines whether the interrelationships of the subject have been understood, whether the student is able to apply their knowledge and methodological skills to a scientific problem and whether they have acquired the in-depth specialist knowledge necessary for the transition to professional practice.

(2) The module or partial module examinations of the Master's examination are generally taken during the course of study following the respective courses of the degree program.

§ Section 24 Subject-specific requirements and type and scope

(1) The special section specifies the type and number of module examinations or partial module examinations in the compulsory and compulsory elective areas that must be completed as a prerequisite for admission to the Master's examination.

(2) For students who register for their Master's thesis from the winter semester 2016/17 onwards, proof of successful completion of the Studium Generale must be provided as a prerequisite for registering for the Master's thesis. Exceptions are defined in the special section of these regulations.

(3) The subject of the module examinations or partial module examinations are the subject areas of the courses assigned to the examination subjects in accordance with the special section.

(4) Notwithstanding paragraph 2, admission to the Master's thesis may also be granted without submission of the Studium Generale after approval by the relevant Examination Board if proof is provided when registering for the Master's thesis that the Studium Generale will be taken as part of a semester abroad after the Master's thesis has been completed. Corresponding proof or agreements regarding the semester abroad must be submitted to the responsible committee when applying for the Master's thesis.

§ 25 Master's thesis

(1) The Master's thesis is an examination paper. In the Master's thesis, the student should demonstrate that a problem from the subject can be worked on independently using scientific methods within a specified period of time. The topic of the Master's thesis must be submitted at the earliest one semester before the end of the regular semester and at the latest three months after successful completion of all modules.

(2) The Master's thesis is supervised by two examiners from Aalen University, whereby the first examiner must always be a professor at Aalen University. After consultation with the respective supervisor, the Master's thesis can also be completed at an institution outside of Aalen University. The examiners are appointed by the relevant examination board.

(3) If professors are not available as second examiners, this can be supervised by lecturers or persons experienced in professional practice and training who themselves have at least the qualification to be determined by the Master's examination in the respective degree program or an equivalent qualification. If the Master's thesis is to be carried out at an institution outside the university, the approval of the chairperson of the relevant examination board is required. In cases of doubt, the member of the Rectorate responsible for teaching shall decide.

(4) The topic, task and scope of the Master's thesis must be limited by the examiner in such a way that the deadline for completing the Master's thesis can be met.

(5) The Master's thesis may also be completed in the form of a group thesis if the individual contribution to be assessed as examination work is clearly distinguishable and assessable on the basis of the

specification of sections, page numbers or other objective criteria that enable clear differentiation and fulfills the requirements according to paragraph 1.

(6) The workload for the Master's thesis is generally 29 or 30 CP including colloquium. It must be completed within a maximum of six months. If this is necessary to ensure equal examination conditions or for reasons for which the person being examined is not responsible, the completion time may be extended to a maximum of eight months; the decision on this is made by the Examination Board on the basis of a statement by the supervisor. The topic, task and scope of the Master's thesis must be limited by the supervisor in such a way that the deadline for completing the Master's thesis can be met.

§ Section 25 a Master's thesis - registration, issue and completion time

(1) The Master's thesis must be registered by the student at the degree program office in due time using the corresponding registration form.

a) The registration form contains the names of the first and second examiners, the topic of the Master's thesis, the supervising examiner's approval of the topic and the student's personal details. The registration form is completed by the degree program with the registration and submission date. Students can express topic requests. There is no entitlement to the consideration of topic requests.

b) Based on the registration form, the Examination Board decides on the registration for the Master's thesis and determines the start and submission date of the Master's thesis.

c) The student will be informed of the decision. The Master's thesis is deemed to have been registered when the Examination Board announces its positive decision.

(2) The topic of the Master's thesis may only be issued if the person to be examined

a) has been enrolled at Aalen University for at least one semester,

b) has provided evidence of the academic requirements in accordance with § 24.

(3) The topic of the Master's thesis must be issued at the earliest one semester before the end of the regular semester and at the latest three months after successful completion of all modules. If the topic is not issued within a period of three months, the relevant examination board shall determine a topic for the Master's thesis and inform the student accordingly.

(4) The Master's thesis must be completed within a maximum of six months. If this is necessary to ensure equal examination conditions or for reasons for which the person being examined is not responsible, the completion time may be extended to a maximum of eight months; the decision on this shall be made by the relevant examination board on the basis of a statement from the supervisor.

§ 26 Submission and assessment

(1) The Master's thesis must be submitted on time to the examination office/secretariat of the degree program or to the respective supervisor; the time of submission must be recorded. In addition to the written copies, the degree program may require the Master's thesis to be submitted in digital form.

(2) Upon submission, a written declaration must be made that the thesis - in the case of a group thesis, the part of the thesis marked accordingly - was written independently and that no sources or aids other than those specified were used.

(3) If the Master's thesis is not completed within the specified processing time, it will be graded as "insufficient" (5.0).

(4) The Master's thesis must be assessed by two examiners. One of the examiners must be the supervisor of the Master's thesis. The assessment procedure should not exceed four weeks.

(5) The Master's thesis must be defended before a colloquium. The members of the colloquium are the assessors of the thesis and the other professors of the respective Master's degree program. Members of the university may attend as guests . Following the colloquium, the reviewers determine the grade for the final oral presentation.

(6) The grade is calculated from the arithmetic mean of the grades awarded by the examiners.

(7) The overall grade for the Master's thesis is made up of

80% the grade for the written thesis (including associated practical activities),

20% the grade of the colloquium,

both parts must be passed individually. A failed colloquium can be repeated once if the written thesis is passed.

(8) The Master's thesis can be repeated once if the grade is worse than "sufficient" (4.0); a second repetition is excluded. The issue of a new topic must be applied for in writing to the Chair of the Examination Board within a period of two months after notification of failure. If the application deadline is missed, the right to take the examination expires, unless the person being examined is not responsible for the failure.

§ Section 26 a Oral Master's examination (colloquium)

(1) If provided for in the special part of the respective degree program, the student must take an oral Master's thesis (colloquium) in addition to the Master's thesis. Section 11 (2, 3 and 5) (Registration for admission to module examinations) applies accordingly to admission to the oral Master's examination.

(2) The colloquium must be conducted by two examiners. Notwithstanding sentence one, in justified cases the examination may be conducted by one examiner and one assessor.

(3) The persons to be examined are examined individually. The duration of the oral Master's examination is at least 20 minutes and a maximum of 60 minutes.

(4) Section 12 and Section 13 (4) sentence 2 apply to the conduct of the oral Master's examination using electronic information and communication systems.

§ Section 27 Additional subjects

(1) Students may take further examinations in addition to the modules/module components listed in the special section (additional subjects). The results of the examinations in these subjects are not taken into account when determining the overall grade. Likewise, no credit points are awarded for these subjects. They can be listed on the certificate at the student's request.

(2) In each semester, additional subjects worth a total of 10 ECTS credits may be taken outside the degree program in which the student is enrolled. In justified cases, the examination board of the degree program in which the student is enrolled may approve further additional subjects at the student's request.

(3) Achievements that have been completed outside Aalen University and are not recognized will not be listed as additional subjects on the transcript.

§ 28 Overall result and certificate

(1) The Master's examination is passed if all modules of the Master's examination as well as the oral Master's examination, if applicable, have been passed and the Master's thesis has been assessed as "sufficient" (4.0).

(2) The overall grade is calculated in accordance with § 16 from the module grades of the Master's examination including the Master's thesis. The weighting is based on the credit points shown in the special section.

(3) In the case of outstanding performance (overall grade of at least 1.3), the overall grade "passed with distinction" is awarded.

(4) As a rule, a certificate of successful completion of the Master's examination is issued within eight weeks of the final examination. All module grades, the topic of the Master's thesis and its grade as well as the overall grade are to be included in the certificate; the grades are to be provided with the decimal value determined in accordance with § 16 as an addition in brackets. If applicable, the field of study and the specializations as well as - upon request - the result of the examinations in the additional subjects (§ 27) and the duration of study required to complete the Master's examination must also be included in the certificate.

(5) The certificate shall bear the date on which the last examination (partial module examination, module examination, Master's thesis, oral Master's thesis) was completed. If the Master's thesis is the last examination completed, the date of submission must be entered. It shall be signed by the Rector and the Dean of the Faculty.

§ 29 Academic degree and Master's certificate

(1) Aalen University - Engineering and Business - awards the following degrees after passing the Master's examination, stating the specialization

- in the degree program "Polymer Technology (consecutive)" the Master's degree "Master of Science", short form "M.Sc.".
- in the degree program "Technology Management" the Master's degree "Master of Engineering", short form "M.Eng.".
- in the degree program "Lightweight Construction" the Master's degree "Master of Science", short form "M.Sc.".
- in the degree program "Management" the Master's degree "Master of Arts", short form "M.A.".
- the Master's degree "Master of Science", abbreviated to "M.Sc.", in the degree program "Business Informatics (continuing education / part-time)".
- in the degree program "Business Informatics (consecutive)" the Master's degree "Master of Science", short form "M.Sc.".
- in the degree program "Vision Science and Business" the Master's degree "Master of Science", short form "M.Sc.".
- in the degree program "Product Development and Manufacturing" the Master's degree "Master of Engineering", short form "M.Eng".
- in the degree program "Ophthalmic Optics and Psychophysics" the Master's degree "Master of Science", short form "M.Sc.".
- in the degree course "Photonics" the Master's degree "Master of Science", short form "M.Sc.".
- in the degree program "Mittelstandsmanagement" the Master's degree "Master of Arts", short form "M.A.".

- in the degree program "International Marketing and Sales" the Master's degree "Master of Arts", short form "M.A.".

- in the degree program "Health Management" the Master's degree "Master of Arts", short form "M.A.".

- in the degree program "Applied Management Science" the Master's degree "Master of Science", short form "M.Sc."

- in the degree program "Industrial Management" the Master's degree "Master of Engineering", short form "M.Eng.".

- in the degree program "Computer Science" the Master's degree "Master of Science", short form "M.SC.".

- in the degree program "Advanced Materials and Manufacturing" the Master's degree "Master of Science", short form "M.Sc.".

- in the degree program "Business Development (Product and Start-up Management)" the Master's degree "Master of Arts", short form "M.A.".

- in the degree program "Advanced Systems Design (Systems Engineering)" the Master's degree "Master of Science", short form "M.Sc.".

- in the degree program "Auditing, Finance & Governance" the Master's degree "Master of Arts", short form "M.A.".

- the Master's degree "Master of Science", abbreviated to "M.Sc.", in the degree program "IT Security Management (continuing education / part-time)".

- in the degree program "Analytical and Bioanalytical Chemistry" the Master's degree "Master of Science", short form "M.Sc."

(2) After submission of a certificate of discharge by the university, the Master's certificate with the date of the certificate will be issued at the same time as the transcript. This certifies the award of the Master's degree. The Master's certificate is signed by the Rector and bears the seal of Aalen University - Engineering and Business.

§ 30 Diploma Supplement, Transcript of Records

(1) In addition, the graduate will receive a "Diploma Supplement" in German and English in accordance with the "Diploma Supplement Model" of the European Union/Europarat/Unesco as well as a "Transcript of Records", which contains the essential information about the course content, the course of study and the academic and professional qualifications acquired with the degree as well as the profile of the degree program.

(2) The Diploma Supplement and the Transcript of Records bear the date of the certificate and are signed by the Dean of the Faculty or the Chair of the Examination Board of the degree program.

§ Section 31 Final failure

(1) The Master's examination is definitively failed if

a) a module examination or partial module examination of a compulsory or compulsory elective module is not passed or is deemed not to have been passed in the first repetition and a second repetition in accordance with § 18 has not been applied for within the set deadline or has not been permitted,

b) a module examination or partial module examination of a compulsory or compulsory elective module is not passed or is deemed not to have been passed in a second repetition granted in accordance with § 18,

c) the required ECTS points have not been achieved in the relevant semesters in accordance with the CP limits (minimum number of CP) specified in the special section of the respective degree program,

d) the Master's thesis has not been passed at the second attempt or is deemed to have been failed,

e) if provided for in the Special Section, the oral Master's examination has not been passed at the second attempt or is deemed to have been failed.

(2) If the Master's examination has been definitively failed, a certificate will be issued on request and on presentation of the relevant evidence and the certificate of exmatriculation, which contains the examinations passed (partial module examinations, module examinations, Master's thesis, oral Master's examination) and their grades as well as the examinations not yet passed and indicates that the Master's examination has been definitively failed.

§ Section 32 Invalidity of the Master's examination

(1) If the person being examined has cheated in a module examination or partial module examination and this fact only becomes known after the certificate has been issued, the grade of the module examination or partial module examination can be corrected in accordance with § 20. If necessary, the module examination can be declared as "failed" (5.0) and the Master's examination can be declared as failed. The same applies to the Master's thesis and, if applicable, the oral Master's examination.

(2) If the requirements for taking a module examination or partial module examination were not fulfilled without the person being examined intending to deceive about this, and this fact only becomes known after the certificate has been issued, this deficiency is remedied by passing the module examination or partial module examination. If a module examination was deliberately and wrongfully obtained so that it could be taken, the module examination or partial module examination can be assessed as "failed" (5.0) and the Master's examination can be declared failed. The same applies to the Master's thesis and, if applicable, the oral Master's examination.

(3) The student must be given the opportunity to comment before a decision is made.

(4) The incorrect certificate must be withdrawn and a new one issued if necessary. The "Master's certificate", the "Diploma Supplement" (English and German versions) and the Transcript of Records must also be confiscated together with the incorrect certificate if the Master's examination was declared failed due to cheating. A decision in accordance with paragraph 1 and paragraph 2 sentence 2 is excluded after a period of ten years from the date of issue of the certificate.

V. Section - Miscellaneous

§ Section 33 Inspection of the examination files

(1) Upon request, the examined person shall be granted access to their examinations, the related reports and the examination records; Section 29 of the State Administrative Procedure Act shall remain unaffected.

(2) The date of the inspection is to be agreed between the examiner and the person being examined. If several applications for examination inspection have been submitted for an examination, a joint date for examination inspection can be agreed between the examiner and the person concerned.

(3) Examination documents, reports and examination protocols may not be reproduced without the consent of the examiner or examiners.

(4) Inspection is only possible under supervision.

§ Section 34 Retention periods

Examination papers in text form, final theses and the minutes of oral examination procedures shall be kept for one year. This applies accordingly to examinations that are conducted using electronic information and communication systems.

§ Section 35 General studies

(1) In order to take into account the commitment to civil society, students must choose subjects from the "Studium Generale" program of Aalen University within the framework of the curriculum to the extent of one CP (30 hours workload). Courses or activities already completed can be recognized in accordance with the "Guidelines of the Studium Generale" passed by the Senate of Aalen University.

(2) The courses of the Studium Generale are divided into several areas, the contents of which vary from semester to semester.

(3) Student attendance must be verified for each course selected. Students are required to prepare a comprehensive report on all courses, lectures, seminars, activities and other work completed. The respective internship office decides whether the report has been passed.

(4) Proof of successful completion of the Studium Generale must be provided by the time of registration for the Master's thesis.

(5) Notwithstanding paragraph 5, students may register for the Master's thesis without submitting the Studium Generale if proof is provided when registering for the Master's thesis that the Studium Generale will be taken as part of a semester abroad after the Master's thesis has been completed. Corresponding proof or agreements regarding the semester abroad must be submitted to the Examination Board when applying for the Master's thesis.

(6) Exceptions are defined in the special section.

§ Section 36 Leave of absence

(1) Upon application, students can be granted leave of absence if they

1. wish to study at a foreign university or language school,
2. are unable to attend a course due to illness and whose illness prevents them from completing the expected coursework,
3. are doing voluntary military service or federal voluntary service,
4. are caring for or looking after their spouse or a relative in a direct line or first-degree relative by marriage who is in need of assistance within the meaning of the Federal Social Assistance Act,
5. are unable to attend a course due to their impending childbirth and the subsequent care of the child,
6. are serving a prison sentence,
7. are taking up a practical activity that serves the purpose of their studies,
8. have other reasons for a leave of absence.

As a rule, the period of leave of absence should not exceed two semesters.

(2) The application for the coming semester must be submitted before the start of the lecture period; in other cases, the leave of absence must be applied for immediately after the reason for the leave of absence has occurred.

(3) A leave of absence in the first semester of a degree program is not permitted unless the student is not responsible for the reason for the leave of absence.

(4) Students on leave of absence do not participate in the self-administration of the university. They are not entitled to attend courses or use university facilities, with the exception of library facilities.

(5) Students on leave of absence are not entitled to take module or partial module examinations.

(6) Students may take leave of absence in accordance with § 3 para. 1 and § 6 para. 1 of the Act for the Protection of Working Mothers (MuSchG) in the version published on June 20, 2002 (BGBl. IS. 2318) in the respective valid version and parental leave in accordance with § 15 para. 1 to 3 of the Federal Parental Allowance and Parental Leave Act of December 5, 2006 (BGBl.IS. 2748) in the respective valid version; they must be granted leave of absence for this purpose upon application. Students on leave of absence in accordance with sentence 1 are entitled to attend courses, complete coursework and examinations and use university facilities. Periods according to sentence 1 are not counted towards the leave of absence according to paragraph 1 sentence 2.

§ Section 37 Electronic communication with students

(1) Results of examinations and coursework are generally announced electronically. The results are deemed to have been announced on the third day after the results are available to the addressee in Aalen University's online student portal.

(2) Other notifications, information and inquiries from the university to students can also be made electronically. These are sent to the students using the e-mail address assigned by the university. The corresponding upload of certificates and notifications is possible in the upload portal for students after notification. On the third day after the electronic message was available to the student, access is deemed to have been granted.

B.Special section

§ Section 38 Explanations and abbreviations:

(1) The following data must be listed in the study and examination regulations for all degree programs:

- the allocation of module examinations / module part examinations in the compulsory area to the individual semesters of study,
- the allocation of module examinations / module part examinations in the compulsory elective area to the individual semesters of study,

(2) If the standard curriculum includes compulsory electives or elective subjects, the student must select enough of the specified subjects to achieve the number of credit points required in the regulations for the degree programs.

(3) The following abbreviations are used in the tables in the special section:

Module, partial performance no.	Number of the module and partial module examination	
Type of course	V = Lecture	In the lectures, the subject matter is presented by the lecturers in the form of regular presentations and, where possible, supported by appropriate teaching materials and the use of multimedia aids. They serve to convey facts and methods.
	E = Excursion	Excursions are illustrative lessons outside the university. They primarily serve to supplement the theoretical knowledge taught and provide an insight into future areas of activity.
	L = Laboratory	Course in which practical, experimental and/or constructive work is carried out to deepen and/or extend the material taught in the associated lectures. skills within the framework of scientific or scientific vocational training are taught
	P = Project	Projects include interdisciplinary or individual subject-related planning and/or realization processes, which are worked on in cooperative forms under the guidance of the lecturer and presented in a paper or presentation followed by a scientific discussion. Characteristic is the largely independent and self-organizing work of the students.
	S = Seminar	Seminars are characterized by the active contribution of the students to the course. The seminar is characterized by intensive interaction between lecturers and students and the development of predominantly new problems using scientific methods alternating between lecture and discussion. The students work independently on longer contributions, present solutions and report on their own or other students' work.
Module, partial performance no.	Module number and partial module examination	
	Ü = Exercise	Exercises serve to supplement and deepen the material taught in the lectures using suitable examples. At the same time, students

		should learn how to apply the knowledge and methods taught in the lectures by working on tasks in an exemplary manner. Short interactions between lecturers and students are common.
	PR = practical course / internships	Practicals are experimental exercises in which students can apply the theoretical knowledge acquired in other courses to specific practical examples and gain knowledge through independent work. They are characterized by the largely independent work of the students, acquisition and deepening of knowledge by working on scientific practical or experimental tasks. Teachers guide the students. Students carry out observations, work and experiments, apply their knowledge and draw scientific conclusions.
	K = Colloquium	The content of a colloquium is a scientific discussion on a specific problem. It serves to supplement the teaching activities through an exchange of experiences with representatives from different areas of society. It also serves to present the results of students' academic work for academic discussion with other students and lecturers.
	EX = Experiment	Students learn to apply their knowledge of literature research, experimental design, data collection and evaluation from the courses Fundamentals, Advanced Statistics and Scientific Work. They are able to review the current state of research on a topic and carry out experimental studies. Results are presented in report form.
	EL = e-learning	E-learning refers to forms of teaching in which the teaching and learning material is offered and used exclusively via electronic media. Interaction between teachers and students can also take place electronically. E-learning courses are generally used to impart factual and methodological knowledge. They can be combined with conventional forms of teaching (blended learning).
	X = not fixed	This type of course depends on the course selected (this only applies to compulsory elective modules, Studium Generale, etc.).
1, 2, 3, 4, 5, 6, 7	Number of semester hours per week (SWS) in the respective semester	
CP	Credit points (ECTS)	

§ 39 Master Polymer Technology

I - Preamble - Qualification goals

The Polymer Technology degree program deals with the field of plastics technology. The Master's degree program teaches knowledge and skills that enable graduates to analyze and present plastics technology issues independently and as part of a team, to draw conclusions and to develop new solutions. Graduates are able to examine and evaluate complicated technical issues and problems on the basis of their acquired technical expertise and with the help of modern simulation techniques and, if necessary, contribute to improvements and innovations through possible solutions.

Thanks to their broad and well-founded academic training, graduates can be successfully employed as "plastics engineers" in the fields of material development, product development and simulation, production and quality assurance in all areas of industry with plastics engineering requirements immediately after completing their studies.

Graduates are able to work on, solve and successfully complete engineering tasks and projects, particularly in connection with plastics engineering problems, both independently and as a member of a team.

On the basis of the knowledge and skills acquired in the Bachelor's degree program, students will consistently deepen their knowledge of plastics engineering, which will expand their own engineering expertise. Students learn to systematically tackle much more complex issues, apply problem-solving strategies, develop possible solutions and carry out projects independently and on their own responsibility. Their scientific aptitude is promoted. They acquire the ability to make decisions based on the knowledge they have acquired and to justify and defend them scientifically to team members, superiors and experts.

Successful completion of the course qualifies students for an engineering career, particularly in the field of plastics technology, which is an engineering discipline in its own right and an integral part of mechanical engineering, automotive and aerospace engineering, medical technology, consumer goods and the sports industry.

Graduates typically work in plastics engineering in the fields of materials development, molded parts development, plastics processing and quality assurance.

The ability to engage in civil society is anchored in the Studium Generale. Aalen University implements the requirements of the Bologna Process by integrating the Studium Generale into the course of studies. By participating in the Studium Generale, students acquire additional soft skills and interdisciplinary competencies that are essential for their future careers. There are many different types of Studium Generale events, including public lectures, seminars, activities in social institutions or voluntary work in committees, which enable graduates to discuss current and historical topics and develop an understanding of different perspectives.

II - Program structure and scope

(1) The Master's degree course in Polymer Technology comprises a total of 3 semesters with a total of 46/48 semester hours per week.

(2) Participation in at least 2 excursions is compulsory.

(3) The duration and structure of the course, the courses with semester hours per week, modules with examinations, as well as their weighting for grading and corresponding credit points (CP) are shown in the table below.

(4) Students can take examinations in both German and English. Exceptions to this are the written examinations in the subjects "Foreign Language", which must be taken in the chosen language.

(5) In order to take into account the commitment to civil society, students must choose subjects from the "Studium Generale" program of Aalen University in the scope of 1 CP (30 hours workload) as part of the curriculum. Previously completed courses or activities can be recognized according to the "Guidelines of the Studium Generale" passed by the Senate of Aalen University.

(6) Master's thesis
The regulations of §§ 23 ff of these statutes apply.
The Master's thesis must be assessed by two examiners. One of the examiners must be the supervisor of the Master's thesis. External supervisors may not be appointed as first assessors.

(7) The Master's certificate and the Master's diploma are issued in German. In addition, the Diploma Supplement and the Transcript of Records are issued in German and English.

(8) Additional exclusion from the program:

Admission and the right to participate in examinations expires if the student has achieved less than 15 ECTS points after the 1st semester of study, This regulation applies to students who begin their studies in the Polymer Technology degree program from the winter semester 2016/17.

Curriculum: Master of Science in Polymer Technology

No.	Module Course	Type	Semester SWS			CP
			WS	SS	WS/ SS	
14006	**Polymer Materials**				Master Thesis	**5**
14201	Polymer Materials	V	4			5
14007	**Polymer Testing**					**5**
14202	Polymer Testing	V,Ü	2			5
14203	Polymer Testing Lab	L	2			
14005	**Foreign Language***					**5**
14211	Technical English C1	V,Ü	4			5
14212	German A 2	V,Ü	8			5
14010	**Polymer Physics and Rheology**					**5**
14207	Polymer Physics	V,Ü	2			5
14208	Advanced Rheology	V,Ü	2			
14011	**Polymer Processing - Injection Molding**					**5**
14209	Injection Molding	V,Ü	2			5
14210	Injection Molding Lab	L	2			
	Obligatory Module (one of two)					
14008	**Polymer Design and Mould Design**					**5**
14204	Polymer Design	V,Ü	2			5
14205	Mould Design	V,Ü	2			
14020	**Sales and Marketing**					**5**
14318	Sales and Marketing	V	4			5
14013	**Multi Materials and Characterization**					**5**
14301	Multilayer Processing Lab	L		2		5
14302	Micro Testing Lab	L		2		
14014	**Quality Management**					**5**
14303	Product Quality	V		2		2
14304	DOE	V,Ü		2		3
14015	**Scientific Project (one of five)**					**5**
14309	Engineering & Quality	L		2		5
14306	Control Engineering	L		2		5
14305	Processing	L		2		5
14308	simulation	L		2		5
14307	technology	L		2		5

No.	Module Course	Type	Semester SWS			CP
			WS	SS	WS/ SS	
14016	**Polymer Processing - Extrusion**					**5**
14310	Extrusion	V,Ü		2		
14311	Extrusion Lab	L		2		5
14017	**Advanced Process Simulation**					**5**
14312	Process Simulation	V,Ü		2		5
14313	Process Simulation Lab	L		2		
	Obligatory Module (one of four)					
14018	**Mould Design****					**5**
14314	Advanced Mould Design	V,Ü		2		5
14315	CAD Mould Design	L		2		
14019	**Modeling and Control**					**5**
14316	Material Modeling	V,Ü		2		5
14317	Control Engineering	V,Ü		2		
14009	**Polymers in Application**					**5**
14206	Polymers in Application	V, Ü		4		5
14021	**Multi-material composites**					**5**
14319	Composites	V		4		5
14999	**General studies**					**1**
14999	General Studies				**X**	1
9999	**Master Thesis**					**29**
9999	Master Thesis	P				29
	Total SWS		**24/28**	**22**		
	Total CP		**30**	**30**	**30**	**90**
	Total examinations		**6**	**7**	**MA+ SG**	

*Students whose mother tongue is not German must choose the subject German. Students whose native language is German must choose English.

** This module can only be selected if the module
Polymer Design and Mould Design was selected in the first semester.

§ 40 Technology Management degree program (Master of Engineering)

I - Preamble - Qualification objectives

The Master's degree program in Technology Management focuses on global, technical, economic and socio-political issues. It combines a very sound education in engineering with knowledge and skills from business administration and management, which are also increasingly required of engineers.

Students should be prepared at the technical level in particular for the areas of research, development, design and testing in mechanical and vehicle engineering (in the specialization "Development and Management") and for the areas of process development, production planning and production in mechanical and vehicle engineering (in the specialization "Production and Management").

Graduates

- are able to analyze technical issues independently and as part of a team and explain them to other people,
- can organize and carry out projects independently and on their own responsibility and apply problem-solving strategies,
- have the ability to make qualified decisions, taking into account the knowledge they have acquired, and to justify and represent these decisions to team members, superiors and experts,
- can work in a team-oriented manner on the basis of varied project work, present and explain their own work content and examine and constructively criticize the work content of other team members,
- can write technical reports and clearly describe the problem, develop solutions, plan, carry out and present experiments, interpret results and select the best possible solutions,
- are able to lead larger teams, organize their work and define and set goals.

Graduates of the Development and Management specialization are able to control development and innovation processes in the company. They can apply various CAE simulation techniques, check simulation results and assess whether the simulation describes reality sufficiently well.

Graduates of the Production and Management specialization can plan and control production processes in the company. They can design processes for selected production methods and analyze, assess and optimize process results.

The ability to engage in civil society is anchored in the Studium Generale. Aalen University implements the requirements of the Bologna Process by integrating the Studium Generale into the course of study. By participating in the Studium Generale, students acquire additional soft skills and interdisciplinary competencies that are essential for their later professional life.

There are many different types of Studium Generale events, including public lectures, seminars, activities in social institutions or voluntary work in committees, which enable graduates to discuss current and historical topics and develop an understanding of different perspectives.

II - Program structure and scope

(1) The Technology Management degree program has two undergraduate majors: "Development and Management" and "Production and Management". When enrolling, students are required to choose a specialization. Students are not permitted to switch between the two specializations.

(2) Some lectures are offered in English.

(3) Admission to the Technology Management degree program requires a Bachelor's degree in a degree program with a mechanical engineering or production engineering focus, usually with 210 ECTS credits, and is regulated by its own admission regulations.

(4) The standard duration of study for the Master's degree course in Technology Management is 3 semesters.

(5) The total number of courses required for successful completion of the degree program is 90 ECTS credits.

(6) The duration and structure of the course, modules, courses with the number of semester hours per week and the number of ECTS credits (CP) can be found in the following table and in the course module handbook. Students specializing in "Development and Management" take modules from the areas of "Business Administration and Management" and "Technology (specialization in Development and Management)". Students specializing in "Production and Management" take the modules from the areas of "Business Administration and Management" and "Technology (specialization in Production and Management)". All students are required to take "Project Work", "Master's Thesis" and "General Studies". Deviating regulations are defined in para. 7.

(7) Elective modules are provided for the elective areas "Business Administration and Management", "Technology" in the specialization in Development and Management and "Technology" in the specialization in Production and Management, which students can choose depending on the course offered. The subjects offered in each semester are announced to students at the beginning of the semester via the relevant media and notice boards.

(8) After application and approval by the head of the examination office, up to three modules each from the areas of "Business Administration and Management", "Technology (majoring in Development and Management)", "Technology (majoring in Production and Management)" and "Project Work" can be replaced by other modules from Master's degree programs at Aalen University. The range of scientific projects is limited. This module can be taken as long as supervision of the work is guaranteed. If this is not the case for individual students, this module must be replaced in accordance with sentence 1.

(9) The duration of the entire degree program, including the Master's thesis, is a maximum of 6 semesters. If the maximum duration is exceeded, admission to the degree program expires. Furthermore, admission and the right to participate in examinations expires if the student has achieved less than 30 ECTS points after the 2nd semester, unless the student is not responsible for not achieving the minimum value.

Curriculum of the degree program "Technology Management" (M.Eng.)

No.	**Compulsory area (both specializations)** **Module /** Course	Type	Semester (SWS)			CP (ECTS points)
			WS (winter semester)	**summer semester** (summer semester)	**3.** Semester	
Business Administration and Management - Selection 5 **from the elective modules offered** (for modules offered in the respective semesters, see notice board)						
26001	**Economic and analytical foundations of management**					**5**
26101	Economic and analytical foundations of management	V	4			5
26002	**Corporate Management**					**5**
26102	Corporate Management	V		4		5
26003	**Product Management and Innovation Management**					**5**
26103	Product management and innovation management	V	4			5
26004	**Quality Management** (will no longer be offered from summer semester 2017)					**5**
26201	Product Quality	V		2		5
26202	Design of Experiments	V, Ü		2		
26005	**Production Management**					**5**
26203	Production Management	V		4		5
26029	**Quality management**					**5**
26210	Quality management	V	4			5
26006	**Elective subject Business Administration 1 from the Master's program at Aalen University (after approval)**					**5**
26301	Elective subject Business Administration 1 from the Master's program at Aalen University		X	X		5

No.	Compulsory area (both specializations) Module / Course	Type	Semester (SWS)			CP (ECTS points)
			WINTER SEMESTER (winter semester)	summer semester (summer semester)	3. semester	
26007	**Elective subject Business Administration 2 from the Master's program at Aalen University (after approval)**					**5**
26302	Elective subject Business Administration 2 from the Master's program at Aalen University		X	X		5
26026	**Elective subject Business Administration 3 from the Master's program at Aalen University (after approval)**					**5**
26309	Elective subject Business Administration 3 from the Master's program at Aalen University		X	X		5
	Total CP		25			
	Total exams		5			
	Total CP Ideal course		10	15		
	Total examinations Ideal course		2	3		

No.	Areas / compulsory elective modules **Module /** Course	Type	Semester (SWS)			CP (ECTS points)
			WS (winter semester)	summer semester (summer semester)	3. semester	
	Technology (specialization in Development and Management - TME) - Selection 6 from the elective modules offered (for modules offered in the respective semesters, see notice board)					
26008	**FEM**					**5**
26104	FEM	V	4			5
26009	**Simulation of control systems**					**5**
26105	Simulation of control systems	V		2		5
26010	**Acoustics**					**5**
26204	Acoustics	V		2		5
26011	**Special gearboxes**					**5**
26205	Special gearbox	V		2		5
26012	**Driving dynamics**					**5**
26206	Driving dynamics	V		2		5
26013	**Lightweight construction**					**5**
26106	Lightweight construction	V		4		5
26030	**Physical Modeling**					**5**
26211	Physical Modeling	V, Ü		4		5
26031	**Lightweight construction, FEM and topology optimization**					**5**
26212	Lightweight construction, FEM and topology optimization	V, Ü		4		5
26033	**Structural Mechanics**					**5**

26214	Structural Mechanics	V, Ü		4		5

No.	Areas / Compulsory elective modules Module / Course	Type	Semester (SWS)			CP (ECTS points)
			WS (winter semester)	summer semester (summer semester)	3. semester	
26034	**Computational Fluid Dynamics**					**5**
26215	Computational Fluid Dynamics (CFD)	V	2			5
26216	Exercises Computational Fluid Dynamics (CFD)	Ü	2			
26014	**Elective TME 1 from the Master's program of Aalen University (after approval)**					**5**
26303	Elective subject TME 1 from the Master's program at Aalen University		X	X		5
26015	**Elective subject TME 2 from the Master's program at Aalen University (after approval)**					**5**
26304	Elective subject TME 2 from the Master's program at Aalen University		X	X		5
26027	**Elective subject TME 3 from the Master's program at Aalen University (after approval)**					**5**
26310	Elective subject TME 3 from the Master's program at Aalen University		X	X		5
	Total CP		30			
	Total exams		6			
	Total CP Ideal course		15	15		30
	Total examinations Ideal course		3	3		

No.	Areas / compulsory elective modules **Module /** Course	Type	Semester (SWS)			CP (ECTS points)
			WS (winter semester)	**summer semester** (summer semester)	**3.** semester	
	Technology (specialization in Production and Management - TMP) - Selection 6 from the elective modules offered (for modules offered in the respective semesters, see notice board)					
26016	**Casting materials and lightweight construction with simulation**					**5**
26107	Cast materials and lightweight construction with simulation	V,L		4		5
26017	**Laser Application Technology**					**5**
26108	Laser Application Technology	V	4			5
26018	**Machining technology and plant management**					**5**
26207	Machining technology and plant management	V		4		5
26019	**Robotics**					**5**
26208	Robotics	V	4			5
26020	**Generative manufacturing**					**5**
26109	Generative manufacturing	V,L	4			5
26021	**Simulation of forming processes**					**5**
26209	Simulation of forming processes	V,Ü		4		5
26032	**Advanced Laser Technology**					**5**
26213	Advanced Laser Technology	V,Ü	4			5
26035	**Resource-efficient machining technology**					**5**
26217	Resource-efficient machining technology	V,P		4		5
26036	**Free Form Fabrication Technologies**					**5**
26218	Free Form Fabrication Technologies	V,P	4			5

No.	Areas / Compulsory elective modules **Module /** Course	Type	Semester (SWS)			CP (ECTS points)
			WS (winter semester)	**summer semester** (summer semester)	**3.** semester	
26022	**Elective subject TMP 1 from the Master's program at Aalen University (after approval)**					**5**
26305	Elective subject TMP 1 from the Master's program at Aalen University		X	X		5
26023	**Elective subject TMP 2 from the Master's program at Aalen University (after approval)**					**5**
26306	Elective subject TMP 2 from the Master's program at Aalen University		X	X		5
26028	**Elective subject TMP 3 from the Master's program at Aalen University (after approval)**					**5**
26311	Elective subject TMP 3 from the Master's program at Aalen University		X	X		5
	Total CP		30			
	Total exams		6			
	Total CP Ideal course		15	15		
	Total examinations Ideal course		3	3		

No.	**Module /** Course Both focal points	Type	Semester (SWS)			CP (ECTS points)
			WS (winter semester)	**summer semester** (summer semester)	**3.** semester	
	Project work (PA) - 1 out of 2					
26024	**Scientific project**					**5**
26307	Scientific project	P	X	X		5
26025	**Elective PA from the Master's program at Aalen University (after approval)**					**5**
26308	Elective PA from the Master's program of Aalen University	V, Ü	X	X		5
269999	**Master's thesis**					
9999	**Master thesis**				**x**	**29**
26999	**General studies**					
26999	**General studies**				**x**	**1**
10000	Total incl. Master's thesis and general studies (typical)					90
	Total SWS		Depending on choice			
	Total CP		5		29+1	
	Total examinations		1		1+1	
	Total CP Ideal course		5		29+1	
	Total exams Ideal course		1			
	Total SWS Total		Depending on choice			
	Total CP Total		60		29+1	
	Total examinations Total		12		MA + SG	
	Total SWS Total Ideal course		30	30	30	

	Total examinations Total ideal course		6	6	MA+ SG	

§ 41 Degree program in Lightweight Construction (Master of Science)

I - Preamble - Qualification goals

The Master's degree program in Lightweight Construction deals with the design, development and production of lightweight structures.

The Master's degree program teaches knowledge and skills that enable graduates to analyze and present technical issues, draw conclusions and develop new solutions independently and as part of a team. Graduates are able to examine and evaluate complicated technical issues and problems on the basis of their acquired technical expertise and with the help of modern simulation techniques and, if necessary, contribute to improvements and innovations through possible solutions.

Thanks to their broad and technically sound academic training, graduates can be successfully employed as "mechanical engineers" in the fields of development, design, production and testing in the automotive and aviation industries and industries with lightweight construction requirements immediately after completing their studies.

Graduates are able to work on, solve and successfully complete engineering tasks and projects, both independently and as a member of a team, particularly in connection with lightweight construction problems.

On the basis of the knowledge and skills acquired in the Bachelor's degree course, students are able to consistently deepen their knowledge of the subject, which expands their own engineering expertise and promotes their scientific skills. Students learn to systematically tackle significantly more complex issues, apply problem-solving strategies, develop possible solutions and carry out projects independently and on their own responsibility. They acquire the ability to make decisions based on the knowledge they have acquired and to justify and defend them scientifically to team members, superiors and experts.

Successful completion of the course qualifies students for an engineering career in the fields of mechanical engineering, automotive and aeronautical engineering, medical technology, plastics technology, consumer goods and the sports industry.

The ability to engage in civil society is anchored in the Studium Generale. Aalen University implements the requirements of the Bologna Process by integrating the Studium Generale into the course of studies. By participating in the Studium Generale, students acquire additional soft skills and interdisciplinary competencies that are essential for their later professional life. There are many different types of Studium Generale events, such as public lectures, seminars, activities in social institutions or voluntary work in committees, which enable graduates to discuss current and historical topics and develop an understanding of different points of view.

II - Program structure and scope

(1) The Faculty of Mechanical Engineering/Materials Engineering offers a Master of Science in Lightweight Engineering for students with a Bachelor's/Diploma degree. The number of places is limited.

(2) Some lectures are offered in English.

(3) Admission to the Lightweight Construction degree program requires a Bachelor's/Diploma degree in a degree program with a mechanical engineering or production engineering focus, usually with 210 ECTS credits, and is regulated by its own admission regulations.

(4) The standard duration of study for the Master's degree course in Lightweight Construction is 3 semesters.

(5) The total number of courses required for successful completion of the degree program is 90 ECTS credits.

(6) The duration and structure of the course, modules, courses with the number of semester hours per week and the number of ECTS credits (CP) can be found in the following table and in the course module handbook. The elective subject is selected from the Master's degree program at Aalen University and requires the approval of the head of the examination office.

(7) The criteria for passing the examination can be found in the module/course descriptions.

(8) The duration of the entire degree program, including the Master's thesis, is a maximum of 6 semesters. If the maximum duration is exceeded, admission to the degree program expires. Furthermore, admission and the right to participate in examinations expires if the student has achieved less than 40 ECTS points after the 2nd semester, unless the student is not responsible for not achieving the minimum value.

Curriculum of the Master of Science in Lightweight Engineering degree program

No.	**Module /** Course	Type	Semester of study (SWS)			CP (ECTS points)
			WS (winter semester)	summer semester (summer semester)	3. semester	
	Courses in the winter semester					
27001	**Finite elements**					**5**
27101	FEM	V,Ü	4			5
27002	**Engineering Materials**					**5**
27102	Engineering Materials	V	4			5
27003	**Polymeric Materials**	**V**				**5**
27103	Polymer Materials	V	4			5
27004	**Casting materials and lightweight construction with simulation**					**5**
27104	Casting materials and lightweight construction with simulation	V		4		5
27005	**Plastic injection molding**					**5**
27105	Injection Molding	V	2			5
27106	Injection Molding Lab	V, L	2			
27006	**Elective subject (after approval)**					**5**
27107	Lectures from the Master's program of Aalen University	V	4			5
	Courses in the summer semester					
27007	**Lightweight construction**					**5**
27108	FEM - Topology Optimization	V		4		5
27008	**Connection technology**					**5**
27109	Joining technology	V		3		5
27110	Bonding technology	V		2		
27009	**Generative manufacturing**					**5**
27111	Additive manufacturing processes	V,L	2	2		5
27010	**Technical Design**					**5**
27112	Industrial Design	V	4			5

No.	**Module /** Course	Type	Semester (SWS)			CP (ECTS points)
			WS (winter semester)	**summer semester** (summer semester)	**3.** semester	
27011	**Engineering with plastics**					**5**
27113	Polymers in Application	V		4		5
27012	**Multi-material composites**					**5**
27114	Composites	V		4		5
9999	**Master thesis**					
9999	Master thesis				x	29
27555	**General studies**					
27555	General studies				x	1
	Total SWS		26	23		
	Total CP		30	30	30	90
	Total examinations		6	6	MA + SG	

§ Section 42 Master of Arts in Management degree program

(1) The regulations of the general part of the study and examination regulations apply to the Master's degree program, insofar as they are not regulated differently by § 42.

(2) Admission to the Master's degree program in Management requires a first professionally qualifying Bachelor's/Diploma degree with a scope of generally 210 CP and is regulated by its own admission regulations.

(3) General information

a) The Master of Arts in Management degree program consists of the following three undergraduate majors:

- "Health Management" (§ 42 a),
- "International Marketing and Sales" (§ 42 b - currently not filled),
- "SME Management" (§ 42 c - currently not filled).

b) The courses and associated examinations are held in German or English. The language is specified in the module description.

(4) Structure and content

a) Each specialization is divided into four parts and is defined in the respective special part of the specialization

b) The modules and courses offered in the core elective program may be subject to change. There is no entitlement to attend a specific module or course.

c) The degree program may issue guidelines on the choice of compulsory elective modules by resolution of the Examination Board by means of a notice or announcement in the usual form.

d) The structure of the degree program, the modules / sub-modules, the courses with the number of hours per week per semester and the number of credit points (CP) for the respective specializations can be found in the following tables and in the module descriptions in the module handbook for the degree program or specialization.

e) Deviations from this and changes to the module descriptions require approval.

(5) No separate workload has been defined in the curriculum for the Studium Generale, as the corresponding workload is already integrated into the standard course of study.

(6) Master's thesis

The Master's thesis can only be started if at least 255 credit points have been achieved in the previous course of study (Bachelor's and Master's degree program) (85% of the total 300 CP to be achieved).

By resolution of the Examination Board, the degree programme may issue additional guidelines by notice or announcement in the usual form, which regulate the content and formal requirements for the Master's thesis as well as questions of procedural organization and assessment.

§ Section 42 a "Master of Arts in Management" major in Health Management

(1) The general regulations of Section 42 of the "Master of Arts in Management" degree program apply to the Health Management specialization of the Management degree program.

(2) The "Health Management" specialization can be studied while working and has a standard period of study of four semesters. The last semester is used to complete the Master's thesis.

(3) Structure and content

The Health Management specialization is divided into four parts:

a) Compulsory major program comprising seven modules, each worth 5 CP,

b) Compulsory elective program in which two modules with 5 CP each must be selected from a predefined list,

c) Free compulsory elective program, in which three further modules with 5 CP each can be selected from the entire range of courses offered by the degree program or, with the approval of the examination board, from the Master's courses offered by the university,

d) Master's thesis with 30 CP.

(4) Exclusion from the degree program

a) In the professionally integrated specialization "Health Management", the right to take examinations and admission to the degree program expires if the student has achieved less than 20 credit points after the 2nd semester or less than 30 credit points after the 3rd semester.

b) The right to take examinations and admission to the degree program shall not expire if the student is not responsible for not achieving these minimum values. The Examination Board will decide on this at the student's request.

Curriculum Master Management

Major in Health Management

No.	Compulsory program Modules / Courses	Type	Semester (SWS)				CP
			1	2	3	4	
32000	**Leadership in GW**		**3**				**5**
32100	Leadership in Healthcare	S, Ü	2				5
32102	Relationship and network management	V, S, Ü		1			
32002	**HR management in the healthcare sector**		**3**				**5**
32200	Corporate and personnel strategy	V, Ü	2				5
32202	HRM in practice	V, S		1			
32004	**Stakeholder management**			**4**			**5**
32300	Seminar on Management Issues I	V, S		2			5
32302	Seminar on management issues II	S			2		
32006	**Public Health**		**3**				**5**
32400	Theoretical foundations of public health	V, Ü	2				5
32402	Health systems research and design	V, Ü	1				
32008	**Technology assessment**			**3**			**5**
32500	Health Impact Assessment	V, S, Ü		1			5
32502	Health Technology Assessment	V, S, Ü			2		
32010	**Demographic challenge in GW**				**3**		**5**
32600	Demography and health system financing	V, S			1		5
32602	Practical demography project	P			2		
32012	**Law in health care**			**4**			**5**
32700	Law of statutory health insurance / SGB V	V		2			5
32702	General medical law	V			2		

No.	Compulsory elective program (at least 2 modules) Modules / Courses	Type	Semester (SWS)				CP
			1	2	3	4	
32014	**Introduction Management in health care facilities**		**3**				**5**
32103	Aspects of quantitative business administration	V, Ü	2				5
32104	Aspects of qualitative business administration	V, EXERCISE	1				
32016	**Quality and sustainability management**			**3**			**5**
32203	Service and quality	S, Ü		1			5
32204	Processes and Innovations	S, Ü, P			2		
32018	**Advanced Management Skills**		**3**				**5**
32303	Change Management	S, Ü	2				5
32304	International Management Skills in Healthcare	S, Ü		1			
32020	**Health Promotion**			**3**			**5**
32403	Quality assurance in health promotion	V		1			5
32404	Occupational health management	S, Ü			2		
32022	**Introduction to the German healthcare system**		**2**				**5**
32503	Institutions	V	1				5
32504	Financing and remuneration	V	1				
32024	**Contract management**			**4**			**5**
32603	Collective and selective contracts	V		2			5
32604	Contract analysis and controlling	V		2			
32026	**Compliance and ethics**			**3**			**5**
32703	General compliance and business ethics	V		1			5
32704	Healthcare Compliance	V, S			2		
32027	**Master thesis**					**X**	**30**
9999	Written master thesis					X	*
9998	Master thesis colloquium					X	*

* Weighting according to § 26 para. 4 of the general part of the SPO.

§ 42 b "Master of Arts in Management" major in International Marketing and Sales

The study focus International Marketing and Sales is regulated in § 45 Master Management of the Study and Examination Regulations for Master's degree programs at Aalen University, SPO 29 in the currently valid version.

§ 42 c "Master of Arts in Management" major in SME Management

The specialization in SME Management is regulated in § 45 Master Management of the Study and Examination Regulations for Master's degree programs at Aalen University, SPO 29 in the currently valid version.

§ 43 Master's in Business Information Systems (continuing education/training)

I - Preamble - Qualification goals

The part-time Master's degree program in Business Information Systems combines knowledge areas of business administration and computer science. The field of knowledge is also related to quantitative methods (especially statistics, operations research) and law. The recent development of the discipline is characterized by a strong increase in the importance of the (decentralized) generation and use of business decision-relevant data and the associated technologies (e.g. data science, digitization, Internet of Things).

Thanks to their interdisciplinary education, which is based equally on the content of business informatics and business administration, graduates are able to take on qualified specialist and management functions in practically all sectors in which business aspects and information technology come together. The spectrum of activities ranges from IT/software development and the use of operational application systems to commercial fields of activity.

The graduates

- can act as interdisciplinary "interpreters" who are able to formulate specialist business application requirements and develop technical solutions from these.
- are able to familiarize themselves with previously unknown areas of business administration, computer science and business informatics in the narrower sense and use the acquired knowledge to determine alternative solutions to problems and select the most advantageous one
- are able to develop quantitative models with which they can analyze, explain and evaluate relationships.
- develop complex processes in the IT environment and can independently compile solutions to optimize these processes.
- are able to raise and answer questions from business administration, computer science and business informatics in the narrower sense (also against the background of the professional experience acquired in a practical context) and to defend them argumentatively against laypersons and experts.
- are able to analyze business requirements and assess the usefulness of certain methods or materials as well as argue appropriately and convincingly for measures to be taken to solve problems.
- are able to develop their own areas of interest and work focus against the background of professional projects and independently develop their own skills and learning.
- are able to reflect on current professional challenges against the background of the course content covered in an exchange with fellow students and conduct interdisciplinary and interdisciplinary discussions.
- can lead groups responsibly in the context of complex tasks and achieve and represent group results within the given time frame.
- are capable of scientific work based on the projects, presentations and case studies carried out and a corresponding Master's thesis.
- are able to engage in civil society on the basis of the courses in the Studium Generale.

II - Program structure and scope

(1) The Master's degree program in Business Informatics (continuing education / part-time) comprises a workload of 90 CP for a first professional degree with 210 CP or 120 CP for a first professional degree with 180 CP.

(2) A workload of at least 300 CP must be achieved in the sum of the Bachelor's and Master's degree programs.

(3) The standard period of study is 5 semesters (90 CP) or 6 semesters (120 CP).

(4) The course is divided into a compulsory elective area of Business Informatics, a compulsory elective area of Business Administration, Studium Generale and a Master's thesis. The 120 CP variant also includes a project thesis.

(5) The examinations are usually taken during the attendance weekends. Students must register for this via the online procedures available at Aalen University (or in writing if necessary) at least three weeks before the examination date. Cancellation of examinations is possible up to one week before the examination date via the online procedures available at Aalen University (or in written form, if applicable).

(6) The Master's thesis is completed part-time and takes nine months to complete.

(7) Curriculum - 90-CP program:

No.	**Module /** Course	Type	Semester SWS		CP
			1. - 3.	4. - 5.	
25100	**Compulsory elective module Business Informatics (6 of 13, corresponding to 30 CP)**				**30**
25101	IT outsourcing and IT governance	V,Ü,L	3		**5**
25102	Enterprise Resource Planning	V,Ü,L	3		**5**
25103	Business Process Management	V,Ü,L	3		**5**
25104	Business Intelligence	V,Ü,L	3		**5**
25105	Cloud computing	V,Ü,L	3		**5**
25106	In Memory Data Management	V,Ü,L	3		**5**
25107	Business analytics: application development	V,Ü,L	3		**5**
25108	Business analytics: big data	V,Ü,L	3		**5**
25109	Information Management	V,Ü,L	3		**5**
25110	Cyber Security	V, EX, L	3		**5**
25111	Application Security	V, Ü, L	3		**5**
25112	Penetration testing and computer forensics	V, Ü, L	3		**5**
25113	IT security management	V, Ü, L	3		**5**

No.	**Module /** Course	Type	Semester SWS		CP
			1. - 3.	4. - 5.	
25200	**Compulsory elective module Business Administration**				**30**

No.	Module / Course	Type	Semester SWS		CP
			1. - 3.	4. - 5.	
	(6 of 9, corresponds to 30 CP)				
25201	ABWL for computer scientists	V,Ü	3		**5**
25202	Quantitative methods of business administration	V,Ü	3		**5**
25203	General Management	V,Ü	3		**5**
25204	Organizational Theory	V,Ü	3		**5**
25205	Accounting and Controlling	V,Ü	3		**5**
25206	Corporate Finance	V,Ü	3		**5**
25207	Project Management	V,Ü	3		**5**
25208	Marketing Management	V,Ü	3		**5**
25209	Service Management	V,Ü	3		**5**
25999	**General Studies**				**1**
25999	General Studies	S	X		1
25400	**Master thesis**			**X**	**29**
9999	Master thesis	P		X	29
	TOTAL		**36**		**90**

(8) Curriculum - 120 CP program:

No.	Module / Course	Type	Semester SWS		CP
			1. - 4.	5. - 6.	
25100	**Compulsory elective module Business Informatics (8 of 13, corresponding to 40 CP)**				**40**
25101	IT outsourcing and IT governance	V,Ü,L	3		**5**
25102	Enterprise Resource Planning	V,Ü,L	3		**5**
25103	Business Process Management	V,Ü,L	3		**5**
25104	Business Intelligence	V,Ü,L	3		**5**
25105	Cloud Computing	V,EX,L	3		**5**
25106	In Memory Data Management	V,Ü,L	3		**5**
25107	Business analytics: application development	V,Ü,L	3		**5**
25108	Business analytics: big data	V,Ü,L	3		**5**
25109	Information Management	V,Ü,L	3		**5**
25110	Cyber Security	V, EX, L	3		**5**
25111	Application Security	V, Ü, L	3		**5**
25112	Penetration testing and computer forensics	V, Ü, L	3		**5**
25113	IT security management	V, Ü, L	3		**5**
25200	**Compulsory elective module Business Administration (8 of 9, corresponding to 40 CP)**				**40**
25201	ABWL for computer scientists	V,Ü	3		**5**
25202	Quantitative methods of business administration	V,Ü	3		**5**
25203	General Management	V,Ü	3		**5**
25204	Organizational Theory	V,Ü	3		**5**
25205	Accounting and Controlling	V,Ü	3		**5**
25206	Corporate Finance	V,Ü	3		**5**
25207	Project Management	V,Ü	3		**5**
25208	Marketing Management	V,Ü	3		**5**
25209	Service Management	V,Ü	3		**5**

No.	**Module /** Course	Type	Semester SWS		CP
			1. - 4.	5. - 6.	
25300	**Project work**				**10**
25301	Project work	P		X	10
25999	**General studies**				**1**
25999	General Studies	S	X		1
25400	**Master's thesis**				**29**
9999	Master thesis	P		X	29
	TOTAL		**48**		**120**

§ 44 Master's degree program in Information Systems (consecutive)

I - Preamble - Qualification goals

The consecutive Master's degree program in Information Systems combines knowledge of business administration, computer science and other disciplines such as quantitative methods and statistics in order to provide answers to questions about competitive business models and underlying technologies with this interdisciplinary understanding.

This interdisciplinary knowledge enables graduates to analyse, develop and evaluate information systems, associated data and underlying processes in and between organizations. This enables them to better understand the strategies, structures, functions and processes of companies and corporate networks and to organize them for the future.
The synergetic interaction of research, teaching and practice is a central component of the interdisciplinary degree program in Business Information Systems, which thus addresses all relevant requirements of a still highly attractive job market in the field of Business Information Systems.
Graduates can therefore be employed in a variety of business areas and sectors. They take on a kind of "translation function" between the business world of thought and language on the one hand, and a technically anchored system world on the other.

The consecutive Master's degree course in Business Information Systems focuses on the interlinking of business-relevant aspects and aspects of information technology and processing. The focus is on "Big Data", i.e. the analysis and interpretation of large amounts of data, which represents a challenge in every medium-sized and larger company.

However, "big data" is no longer an issue that only affects information technology. For more and more companies and organizations, the ability to process and analyse constantly growing volumes of data has become a high priority. The reason for this is the increasing importance of this data and its impact on business processes in a global economy and its participants.
Big data can also provide insights into the redesign of existing processes, existing organizations, entire industries and even social issues. This is why the interlinking of business management aspects with aspects of computer science is a decisive factor for the Master's degree in Information Systems. Graduates can act as interdisciplinary "interpreters" who are able to mediate between highly specialized programmers, commercial requirements and the needs of company management in a solution-oriented manner.

Graduates are able to raise and answer questions from business administration, computer science and business informatics in the narrower sense and to defend these in an argumentative manner.
Graduates can analyze business requirements and assess the benefits of certain methods and IT tools, as well as argue appropriately and convincingly for strategies to be adopted to solve the challenges in business practice.
Graduates are also able to develop their own areas of interest and work focus against the background of professional projects and to further develop their own skills independently. They are able to reflect on current professional challenges against the background of the course content covered in exchange with their fellow students and conduct interdisciplinary and cross-disciplinary discussions. In groups, they can assume responsibility for complex tasks and represent the group results achieved in a technically competent and argumentative manner.

The Master's degree program in Information Systems (consecutive) also lays the foundation for graduates to have the opportunity to go into science and research and contribute to innovations and further developments in information systems - especially in the area of "Big Data" - for example as part of a doctoral thesis. Graduates are qualified to work scientifically on the basis of the projects, presentations and case studies carried out, as well as a corresponding Master's thesis.

II - Program structure and scope

(1) The regulations of the general part of the study and examination regulations apply to the Master's degree program, insofar as they are not regulated differently by § 44.

(2) Admission to the Master's degree course in Business Information Systems requires a Bachelor's degree with, as a rule, 210 CP and is regulated by its own admission regulations.

(3) The standard course of study for students on the Master's degree course in Information Systems comprises three semesters. Please refer to the admission regulations for special regulations for students with a Bachelor's degree of less than 210 CP.

(4) The total number of courses from the compulsory elective modules required for successful completion of the degree program is 90 ECTS credits. With regard to the regulations for students with a Bachelor's degree of less than 210 CP, please refer to the admission regulations.

(5) In accordance with the table below, all examinations of the compulsory modules, one examination of the compulsory electives and the Master's thesis must be passed. Failure to take an examination is equivalent to an unexcused deregistration and will be assessed with 5.0. The criteria for passing the examination are set out in the module/course descriptions valid for the respective semester. Students also choose a compulsory elective module from the courses offered in the degree program according to the table below.

(6) The examinations in the compulsory elective modules must be registered for by the student within the period announced on the notice board. An examination that is not taken will not be assessed as a whole. The compulsory elective module must be selected from the fields of Business Administration or Computer Science from the Master's degree programs offered at Aalen University. The compulsory elective modules must be approved by the head of the Examination Office or alternatively by the Examination Board.

(7) The duration and structure of the degree program, courses with semester hours per week, module examinations, their weighting for grading and the number of credit points can be found in the table below or in the module handbook of the degree program.

(8) The prerequisite for registering for the Master's thesis is at least 45 ECTS credits as part of the Master's degree program.

(9) Additional exclusion from the degree program: Admission and the right to participate in examinations expires if

a) the student has achieved less than 15 CP from this Master's degree program after the 1st semester, or if

b) the student has achieved a total of less than 40 from this Master's program after the 2nd semester.

Curriculum

No.	Compulsory areas & compulsory elective modules Modules / Courses	Type	Semester of study SWS			CP
			1	2	3	
	Business Informatics (compulsory area)					

35001	**Quantitative methods and statistics**					**5**
35101	Quantitative Methods and Statistics	V,Ü	4			5
35002	**Big Data - Basics**					**5**
35102	Big Data - Basics	V,Ü	4			5
35003	**Big data - technologies and use cases**					**5**
35201	Big Data - Technologies and use cases	V,P		4		5
35004	**In-Memory Data Management**					**5**
35202	In-Memory Data Management	V,Ü		4		**5**
35005	**Business Analytics**					**5**
35203	Business Analytics	V,Ü		4		5
35006	**Online Marketing & Web Analytics**					**5**
35206	Online Marketing & Web Analytics	V,Ü		4		5
	Business Administration / Marketing / Management (compulsory area)					
35011	**International Project Management**					**5**
35111	International Project Management	P	4			5
35012	**Customer Relationship Marketing**					**5**
35112	Customer Relationship Marketing	V,Ü	4			5
35013	**Market Research**					**5**
35113	Market Research	V,Ü	4			5
35014	**Business Intelligence & Controlling**					**5**
35114	Business Intelligence & Controlling	V,Ü	4			5
35015	**Corporate management and control**					**5**
35215	Corporate management and control	V,Ü		4		5

No.	Compulsory areas & compulsory elective modules Modules / Courses	Type	Semester SWS			CP
			1	2	3	
	Compulsory electives					
35021	**Compulsory elective subject**					**5**
35221	Compulsory elective subject			4		5
35030	**Master thesis**					**29**
9999	**Preparation of the Master's thesis**				X	25
9998	**Colloquium**				X	4
35999	**General studies**					**1**
35999	General Studies					1
	Total total offer in CPs					**90**

§ 45 Master's degree program in Vision Science and Business (Optometry) (continuing education/in-service), Master of Science (M.Sc.)

I - Preamble - Qualification goals

The part-time Master's program M.Sc. Vision Science and Business (Optometry) relates the already existing knowledge that the student gained during the Bachelor's degree. The Master students can ascertain what field of activity in the area of optometry they would like to specialize in after graduation. The wider expertise can be practiced in an optometric setting or in the area of research and industry.
During lectures, workshops, seminars and labs, the students can interpret advanced and professional methodic skills. The students will be able to organize and plan their projects and evaluate their tasks. The students will be able to summarize and justify their research and master thesis. The students will develop entry-level research design such as proposing the proper methodology for data collection as a means of testing the research hypothesis, data analysis skills such as reporting and summarizing the research results with appropriate statistical methods. They can value a deeper appreciation for the scientific literature through extensive library research. The graduates are then able to apply the gained competences in their professional career.

The students will be able to correlate clinical findings to their knowledge in ocular disease. They will be able to develop and carry out appropriate management and treatment including involvement of multidisciplinary healthcare providers. The students can transfer their knowledge and skills in understanding normal variations and abnormal findings of the anterior and posterior portion of the eye. The students are able to assess their patient's ocular health status and apply their competences in new disciplines such as vision therapy, pediatric optometry and low vision. Furthermore, the students can apply modern calculation and production techniques.

Furthermore, social competence plays a big role in optometry, especially for the empathetic interaction with customers/patients. The students can analyze and structure problems in the clinical field. They will be able to design a solution based on basic scientific research techniques. The students will integrate presented material within current practice settings, whenever applicable.

After completion of the Master study program, the students can respond to and solve problems of (mis-)understanding as well as providing comprehensible explanations in order to create a baseline of trust. "Hands-on" labs and projects only help to practice and deepen these competences since the students already demonstrate the basics of these soft skills due to prior relevant work experience. Students can relate this teaching in English into the course of their studies. The students can study and practice in the U.S.A. for a total of four weeks in this degree program.

With the Master's degree, graduates are prepared for future challenges they face in optometry. The content allows students to apply knowledge gained in everyday practice with customers. Fields of activities incorporate optical stores, contact lens institutes, optometric practices, ophthalmologic clinics, industry and research. In addition, it facilitates the pursuit of further education, such as a PhD degree and/or Doctor of Optometry (OD) degree program.

All Master students have to attend all compulsory modules such as
- Ophthalmic Project (5 CP),
- Leadership (5 CP) and
- Master Thesis (30 CP).

If the student opts for "Primary Eye Care" and has to achieve 90 CPs in the Master's program the student should select the following modules
- Human Biology (5 CP),
- Pathology (5 CP),
- Pharmacology (5 CP),
- Ocular Disease (10 CP),
- Vision Therapy and Binocular Vision (10 CP),

- Pediatric Optometry (5 CP),
- Sports Vision (5 CP), and
- Business Management (5 CP).
-

If the student has to achieve 120 CPs, he should choose moreover the following modules

- Clinical Optometry (5 CP),
- Low Vision (5 CP),
- Contact Lenses (5 CP),
- Clinical Project Study (5 CP),
- Clinical Case Studies: Logbook (5 CP), and
- Business Simulation (5 CP).

⇨ If the students opt for "Primary Eye Care", they will be able to transfer primary eye care competences to their clinical practice.

If the student opts for "Research" and has to achieve 90 CPs in the Master's program the student should select the following modules

- Research Project (20 CP)
- Optical Fabrication Technology (10 CP),
- Workplace Design (5 CP),
- Audio and Vision (5 CP),
- Eye Glass Design (5 CP),
- Business Management (5 CP).
-

If the student has to achieve 120 CPs, he should choose moreover the following modules

- Ocular Disease (10 CP),
- Vision Therapy and Binocular Vision (10 CP),
- Business Simulation (5 CP), and
- Marketing Management (5 CP).
-

⇨ If the students opt for "Research", they will be able to transfer their research competences to industry and clinical positions.

II - Program structure and scope

(1) The part-time Master of Science (M.Sc.) Vision Science and Business (Optometry) (continuing education/part-time) comprises a standard period of study of 4 semesters.

(2) The total amount of coursework required for successful completion of the program, including a previous Bachelor's degree, is at least 300 credit points.

(3) Admission to the Master of Science (M.Sc.) Vision Science and Business (Optometry) degree program is regulated by its own admission regulations.

(4) The tuition fees for the Master of Science (M.Sc.) Vision Science and Business (Optometry) degree program are regulated in a separate fee statute.

(5) The duration and structure of the course, modules with credit points and semester hours per week are shown in the table below.

(6) The weighting of the grades for the modules in the Master's certificate is based on the credit points of the modules.

(7) Students with a Bachelor's degree of 180 CP choose at least 80 CP from the compulsory elective area, students with a Bachelor's degree of 210 CP choose at least 50 CP from the compulsory elective area.

Master of Science (M.Sc.) Vision Science and Business (Optometry)

Compulsory area

No.	Modules / Courses	Type	Semester SWS				CP
			1	2	3	4	
29010	**Ophthalmic Project**						**5**
29110	Ophthalmic Project	V,P	1				5
29123	Ophthalmic Project Presentation	P	x				
29011	**Leadership**						**5**
29210	General Studies	V,P		2			5
29225	Leadership and Communication	V,P		1			
29051	**Master Thesis**						**30**
29251	Master Thesis	P				x	30
29351	Master Thesis Presentation	P				x	

Compulsory elective area

No.	Modules / Courses	Type	Semester SWS				CP
			1	2	3	4	
No.	**Module** Course	**Type**	**Semester** SWS				**CP**
			1	2	3	4	
29012	**Human Biology**						**5**
29111	Ocular Anatomy	V	2				5
29112	Physiology	V	2				
29013	**Pathology**						**5**
29113	Histology	V,L	2				5
29114	Systems Pathology	V	2				
29014	**Pharmacology**						**5**
29115	General Pharmacology	V	2				5
29116	Ocular Pharmacology	V	2				
29015	**Ocular Disease**						**10**
29117	Intro to Ocular Disease 1	V,L	3				10
29118	Intro to Ocular Disease 2	V,L		4			
29016	**Clinical Optometry**						**5**
29119	Intro to Ocular Disease 3	V,L		1			5
29120	Clinical Optometry Boston USA	V,P		1			
29017	**Research Project**						**20**
29211	Research Project	P	x	x			20
29212	Research Project Presentation	P		x			
29018	**Vision Therapy and Binocular Vision**						**10**
29213	Binocular Vision Disorders	V,L		2	2		10
29214	Vision Therapy	V,L			4		
29019	**Pediatric Optometry**						**5**
29215	Pediatric Optometry	V,L			2		5
29318	Case Management Pediatric	V,P			2		
29020	**Sports Vision**						**5**
29216	Sports Vision	V,L				1	5
29217	Sports Vision Field Study USA	V,P				1	
29021	**Low Vision**						**5**
29218	Low Vision	V,L		3			5
29310	Low Vision Project	P		x			

No.	Modules / Courses	Type	Semester SWS				CP
			1	2	3	4	
29022	**Optical Fabrication Technology**						**10**
29219	Project Management and Innovation	V,P			2		10
29311	Surface Processing and Coating Technology	V,L				2	
29023	**Contact Lenses**						**5**
29220	Contact Lenses	V,L		2			5
29312	Contact Lenses Project	P		x			
29024	**Workplace Design**						**5**
29221	Vision, Light and Ergonomics	V,L			2		5
29313	Workplace Design Project	P			x		
29025	**Audio and Vision**						**5**
29314	Audio and Vision	V,L		2			5
29319	Audio and Vision Project	V,L		1			
29026	**Eye Glass Design**						**5**
29315	Eye Glass Design	V,L			2		5
29320	Eye Glass Design Project	V,L			2		
29027	**Marketing Management**						**5**
29121	Marketing Management	V,L				2	5
29122	Marketing Project	V,P				1	
29028	**Business Simulation**						**5**
29222	Business Strategy	V,P		2			5
29223	Business Simulation Project	V,P			2		
29029	**Business Management**						**5**
29224	Value Based Management	V,L			2		5
29317	Business Plan	V,P			2		
29030	**Clinical Project Study**						**5**
29321	Clinical Project	V,L			1		5
29322	Clinical Project Presentation	P			x		
29031	**Clinical Case Studies: Logbook**						**5**
29323	Clinical Experience	V,L				1	5
29324	Case Documentation	P				x	

§ 46 Product Development and Manufacturing degree program (Master of Engineering)

I - Preamble - Qualification goals

The Product Development and Manufacturing degree program focuses in particular on technical content from development and manufacturing in mechanical engineering. The degree program qualifies graduates in particular for demanding activities in research, development, design, testing, process development, production planning and production, especially in mechanical engineering and in companies in the automotive engineering sector, but also in related industries.

Graduates

- are able to analyze technical issues independently and as part of a team and explain them to other people,
- are able to analyze complicated technical problems with the help of modern simulation techniques, develop possible solutions and evaluate them,
- can approach complex issues systematically, organize and carry out projects independently and on their own responsibility and apply problem-solving strategies.
- They have the ability to make qualified decisions based on the knowledge they have acquired and to justify and defend these decisions to team members, superiors and experts.
- They can work in a team-oriented manner on the basis of varied project work, present and explain their own work content and examine and constructively criticize the work content of other team members.
- Graduates can write technical reports and clearly describe the problem, develop solutions, plan, carry out and present experiments, interpret results and select the best possible solutions.
- Graduates' engineering thinking and working skills are further developed, as are their scientific approach to problems and their communication skills.

Graduates specializing in development can apply various CAE simulation techniques, check simulation results and assess whether the simulation describes reality sufficiently well. They deepen their knowledge and skills in product development in selected subject areas.

Graduates with a focus on production can design processes for selected production methods, partly with the aid of simulation techniques, and analyze, assess and optimize process results.

The ability to engage in civil society is anchored in the Studium Generale. Aalen University implements the requirements of the Bologna Process by integrating the Studium Generale into the course of study. By participating in the Studium Generale, students acquire additional soft skills and interdisciplinary competencies that are essential for their future careers. There are many different types of Studium Generale events, including public lectures, seminars, activities in social institutions or voluntary work in committees, which enable graduates to discuss current and historical topics and develop an understanding of different perspectives.

II - Program structure and scope

(1) The Faculty of Mechanical/Materials Engineering offers a Master of Engineering in Product Development and Manufacturing for Bachelor students who have achieved an above-average degree. The number of study places is limited and access is regulated by admission regulations. Some subjects are offered in English.

(2) Admission eligibility

The following requirements apply for admission to this degree program: Completed degree with a standard period of study of at least seven semesters (Diplom or Bachelor's degree) in subject-related courses with 210 credit points (CP) with above-average performance. Deviations from this require the approval of the selection committee.

(3) Implementation

a) The Master's degree program can be started in the winter and summer semesters.

b) The duration and structure of the course, modules, courses with semester hours per week and the number of credit points can be found in the following table and in the course module handbook.

c) In the second semester, students specialize in "Development" and "Production". 20 CP are offered for each specialization. There are further elective options in both specializations.

d) The examinations attempted once in a compulsory elective area must be passed. Subsequent changes to a specialization and/or elective subject are not permitted.

e) The Studium Generale must be completed as a compulsory module worth 1 credit point.

f) In a compulsory elective module, at least 10 CP must be earned from the modules of the other specialization and/or - after application to and approval by the Dean of Studies - from the Master's courses offered by the university. A proposal for possible compulsory elective subjects that have been approved in advance will be announced on the notice board.

(4) Exclusion from studies

The duration of the entire course of study, including the Master's thesis, is a maximum of 6 semesters. If the maximum duration is exceeded, admission to the degree program is revoked. Furthermore, admission and the right to participate in examinations expires if the student has achieved less than 40 CP after the 2nd semester, unless the student is not responsible for not achieving the minimum CP value.

Curriculum of the Master of Engineering degree program "Product Development and Manufacturing"

The sum of the credit points includes all CP in accordance with para. 3.

No.	**Module /** Course	Type	**Semester** (SWS)			CP (ECTS points)
			WS (winter semester)	**summer semester** (summer semester)	**3.** semester	
17001	**Mathematical Modeling**					**5**
17201	Mathematical models and methods	V	3			5
17202	Exercises in Mathematical Models and Methods	Ü	1			
17002	**Physical Modeling**					**5**
17101	Physical Modeling	V,Ü		4		5
17003	**Product development**					**5**
17203	Digital product development and production	V	2			5
17102	Digital Product Creation and Manufacturing Laboratory	L		2		
17004	**FEM**					**5**
17204	FEM	V	2			5
17205	FEM, exercises	Ü	2			
17005	**Materials 1**					**5**
17206	Engineering materials	V	4			5
17006	**Materials 2**					**5**
17207	Use of innovative materials: polymers	**V**	2			5
17208	Non-destructive component testing	**V**	2			
			18	**6**		**30**

No.	**Module /** Course	Type	Semester (SWS)			CP (ECTS points)
			WS (winter semester)	summer semester (summer semester)	3. semester	
	Focus on development					
	Elective area Development (3 of 5 modules from 17015, 17016, 17017, 17018, 17008)					
17015	**Machine dynamics/driving dynamics**					**5**
17103	Vehicle dynamics	V,L		2		5
17016	**Acoustics**					**5**
17104	Acoustics	V,L		2		5
17017	**Special gearbox**					**5**
17105	Special gearbox	V,T		2		5
17018	**Simulation of control systems**					**5**
17106	Simulation of control systems	V,L		2		5
17008	**Elective subject E1 from the Master's program of Aalen University (after approval)**					**5**
17107	Elective subject E1 from the Master's program of Aalen University (after approval)		4			5
17009	**Flow simulation** (usually 17209 with 17210; at the student's request 17211 with 17212 instead)					**5**
17209	Computational Fluid Dynamic (CFD)	V	2			5
17210	Exercises Computational Fluid Dynamic (CFD)	Ü	2			
17211	Advanced Process Simulation	V		2		5
17212	Process Simulation Lab	Ü		2		
17010	**Compulsory elective module with a focus on development**			**8**		**10**

No.	**Module /** Course	Type	Semester (SWS)			CP (ECTS points)
			WS (winter semester)	summer semester (summer semester)	3. semester	
	Total SWS Development focus		**8 (0)**	**14 (20)**		**20**
	Total CP Development focus		**10 (0)**	**20 (30)**		**30**
	Total examinations Development focus		**2 (0)**	**2 + WP (4 + WP)**		
	Total SWS Development focus Total		**18 + 8**	**6 + 6 + 8WP**		
	Total CP Development focus Total		**30 (20)**	**30 (40)**		**60 + MA**
	Total examinations Development focus Total		**4 + 2**	**2 + 2+2WP**		
	Focus on production					
	Elective area Production (2 of 3 modules from 17019, 17020, 17021)					**10**
17019	**Cast materials and lightweight construction with simulation**					**5**
17108	Casting materials and lightweight construction with simulation	V,L		4		5
17020	**Analysis and simulation of forming processes**					**5**
17109	Analysis and simulation of forming processes	V,Ü		4		5
17021	**Analysis and simulation of material behavior**					**5**
17110	Analysis and simulation of material behavior	V,Ü		4		5
17012	**Production management**					**5**
17111	Lean Management	V		4		5

No.	**Module /** Course	Type	Semester (SWS)			CP (ECTS points)
			WS (winter semester)	**summer semester** (summer semester)	**3.** semester	
17013	**Manufacturing technologies (1 of 2)***					**5**
17112	Machining technology and plant management	V, L		4		**5**
17213	Laser Application Technology	V	4			**5**
			0/4	**10/16**		**20**
17014	**Compulsory elective module with focus on manufacturing**		**8**			**10**
	Total SWS Production focus		8 (12)	**16 (12)**		
	Total CP Production specialization		10 (15)	**20 (15)**		
	Total examinations focus on production		0+2 WP (1+2 WP)	**4 (3)**		
	Total SWS Production focus Total		18+8	**6+16**		
	Total CP Production focus Total		30 (35)	**30 (25)**		
	Total examinations Total		4+2WP	**2+4**		
9999	**Master thesis**				**X**	**29**
9999	Master thesis				X	29
17999	**General studies**				**X**	**1**

* The specified number of examinations must be selected from the respective module and examined.

The sum of the credit points includes all CP in accordance with para. 3.

§ 47 Master's degree program (consecutive) M.Sc. in Ophthalmic Optics and Psychophysics

I - Preamble - Qualification objectives

The overriding objective of the Master's degree program in Ophthalmic Optics and Psychophysics is to qualify graduates for a research or development-related professional activity at the interface between natural science disciplines such as physics and optics on the one hand and medicine on the other. Graduates have a sound and broad knowledge in the fields of ophthalmic optics, optometry, psychophysics, binocular vision, spectacle lens design, contact lenses and scientific methodology. However, the Master's degree course in Ophthalmic Optics and Psychophysics is broader in content and more scientifically based than a purely subject-related degree course and thus provides graduates with a wider and more sustainable range of career opportunities. Graduates of the course are qualified to work scientifically due to the challenging projects and case studies carried out as part of the course and a corresponding Master's thesis.

Graduates of the Master's degree program in Ophthalmic Optics and Psychophysics

- are able to examine and assess the performance of the visual system according to clinical standards;
- are able to use subject-specific screening procedures appropriately and interpret their results competently;
- have practical research skills and knowledge in the fields of spectacles, contact lenses, vision research, hearing and vision;
- can apply the methods of statistics, test planning and quality control to clinical and research-related issues as well as to industrial developments and describe, analyze, explain and evaluate correlations;
- can define the optical design of spectacle lenses on the basis of systematic measurements of the visual requirements of spectacle wearers and analyze and evaluate them using suitable subjective and objective methods;
- know all relevant subject-specific parameters of contact lens fitting and their determination and are able to independently perform and verify target-oriented and optimized contact lens fittings, especially in difficult cases;
- know the possibilities and limitations of the various refraction methods and can select the appropriate methods and use them, especially in difficult cases;
- are familiar with all potential factors that can lead to limitations in binocular vision and can draw the correct conclusions for the provision of visual aids to customers and patients;
- are familiar with other sensory-physiological examination procedures relevant to their specialty, such as static and kinetic perimetry and the examination of contrast vision, twilight vision, glare sensitivity and color vision;
- have basic knowledge of electrophysiological examination procedures;
- have a basic understanding of interdisciplinary and interdisciplinary relationships in the field of pharmacology and can assess the potential use of medication in eye diseases.

In addition to specialist and scientific skills, the personal development and motivation of students is promoted through method-related training ("skills labs") and social interaction - e.g. through direct contact with test subjects, visually impaired people and patients.

Graduates of the Master's degree program in Ophthalmic Optics and Psychophysics

- are proficient in appropriate communication and have an empathetic understanding of their customers and patients;
- have basic competence in the area of "good clinical practice (GCP)";
- are able to independently develop questions for scientific problems, draw further conclusions and defend these in an argumentative manner to both experts and laypersons;
- are able to structure and independently carry out small research projects. To this end, they apply their knowledge of time and project management;
- can independently develop new subject areas, evaluate information and draw practical conclusions, taking into account both ophthalmic / technical-optical and medical aspects;
- can combine the subject-specific methods of ophthalmic optics and psychophysics with the methods of the disciplines of optics and medicine in order to develop new solutions to problems in complex contexts.

Successful completion of the Master's degree program enables students to work in professional fields such as sensory function testing or industrial research and development, in addition to the traditional professional fields in ophthalmic optics and optometry. The related fields of activity include, among others:

- Optometric competence centers,
- contact lens centers,
- ophthalmology clinics or practice associations,
- Eye laser centers,
- research institutes,
- Research and development departments in the field of ophthalmic lens development and the development of ophthalmic measuring devices,
- Institutions and authorities acting as experts (e.g. in the field of traffic engineering, quality control, process monitoring, ergonomics and workplace safety),
- Institutions that deal with practical life skills, the improvement of sensory functions and rehabilitation.

The Master's degree course in Ophthalmic Optics and Psychophysics also qualifies graduates for access to the higher civil service, as is necessary, for example, for a position as a teacher at technical and vocational schools.
After successfully completing the Master's degree program in Ophthalmic Optics and Psychophysics, graduates can pursue a doctorate at a German or international university (e.g. Dr. sc. hum.).

The ability to engage in civil society is anchored in the Studium Generale. Here (e.g. in seminars or while working in social institutions), students acquire additional soft skills and interdisciplinary competencies that are essential for their future careers. As a result, graduates are able to discuss current and historical topics and develop an understanding of different points of view.

II - Course structure and scope

1. The consecutive Master of Science (M.Sc.) degree program in Ophthalmic Optics and Psychophysics comprises a standard period of study of 3 semesters.

2. The total amount of coursework required for successful completion of the degree program, including a previous Bachelor's degree, is at least 300 credit points.

3. Admission to the Master of Science (M.Sc.) in Ophthalmic Optics and Psychophysics is regulated by its own admission regulations.

4. The duration and structure of the course, modules with credit points and semester hours per week are shown in the table below.

5. The weighting of the grades for the modules in the Master's certificate depends on the credit points of the modules.

6. The modules of semesters 1 and 2 do not build on each other, so that the order of semesters 1 and 2 can be swapped.

Master's degree program *M.Sc. Ophthalmic Optics and Psychophysics* - Compulsory area

No.	Modules / Courses	Type	Semester of study SWS			CP
			1	2	3	
76001	**Eye diseases**					**5**
76101	Eye diseases A	V	2			5
76102	Eye diseases B	V	2			
76002	**Innovation management and design Ophthalmic optics**					**5**
76103	Innovation and quality management	V,Ü	2			5
76104	Design	V,Ü	1			
76105	Case studies/scenarios	V,S	1			
76004	**Scientific methodology**					**5**
76108	Interdisciplinary project work	P	2			5
76109	Experimental Design/Statistics	V,Ü	2			
76005	**Practical ophthalmic optics - specialization**					**10**
76110	Refraction and screening - specialization A	L,S	4			10
76201	Contact lenses - specialization B	L,S		4		
76006	**Lens design**					**5**
76202	Lens design	V,Ü		4		5
76203	Practical course in ophthalmic lens development	L		2		
76007	**Binocular vision**					**5**
76204	Binocular vision	V		2		5
76205	Binocular vision practical course	L		2		
76008	**Pharmacology**					**5**
76206	Fundamentals of Pharmacology	V		2		5
76207	Ocular drug effects	V		2		
76009	**Contact lenses 4**					**5**
76208	Contact lenses 4	V,L		2		5
76209	Practical course contact lenses 4	V,L,P		2		

No.	Modules / Courses	Type	Semester SWS			CP
			1	2	3	
76010	**Master thesis**					**29**
9999	Master thesis	P				29
76999	**General studies**					**1**
76999	General Studies	P				1
	Total SWS (compulsory area)		16	22		
	Total CP (compulsory area)		20 + 10 WP*	25 + 5 WP	30	90
	Total examinations		4 + 2 WP	5 + 1 WP	MA + SG*	

**WP=compulsory elective area, MA=Master's thesis, SG=Studium Generale*

Master's degree program *M.Sc. Ophthalmic Optics and Psychophysics* - Compulsory elective area

Two compulsory elective modules must be taken in semester 1 and one compulsory elective module in semester 2.

In total, compulsory elective modules worth at least 15 credit points must be chosen in the Master's degree program in Ophthalmic Optics and Psychophysics.

In addition to the modules in the list, suitable modules from other degree programmes can also be recognized as compulsory electives on application.

No.	Modules / Courses	Type	Semester of study SWS	CP
76901	**Biophotonics**			**5**
76801	Biophotonics	V	3	5
76802	Biophotonics Laboratory	L	1	
76902	**Interferometry**			**5**
76803	Interferometry	V	4	5
76903	**Optics Technology**			**5**
76804	Optics Technology	V	3	5
76805	Optics Technology Laboratory	L	1	
76904	**Technical Optics - Experimental Project**			**5**
76806	Technical optics - experimental project	P	4	5

No.	Modules / Courses	Type	Semester SWS	CP
76905	**Project Hearing and Seeing**			**5**
76808	Special aspects of hearing and seeing	V	1	5
76809	Hearing and vision project	P	3	
76906	**Visual system project**			**5**
76810	Project work in the Vision Research Competence Center	P	4	5
76907	**Lens project**			**5**
76811	Project work in the ophthalmic lens competence center	P	4	5
76908	**Audiology project**			**5**
76812	Project work in the Audiology Competence Center	P	4	5
76910	**Biochemistry and biotechnology**			**5**
76813	Biochemistry	V	2	5
76814	Biotechnology	V	2	
76911	**Introduction into Matlab / Simulink**			**5**
76815	Introduction into Matlab / Simulink	V	4	5
76912	**Special eye diseases**			**5**
76816	Neuroophthalmology	V	2	5
76817	Special physiology of the retina	V	1	

§ 48 Master's degree program in Photonics

I - Preamble - Qualification objectives

Generic objective of Master of Photonics program is to qualify the students for an employment in the area of applied research and development. This Master of program is a three semester consecutive program. Mandatory and optional courses exist in parallel.

Language of instruction is English. Thus, the program is accessible for international students. In addition, this allows an international career. The mixture of national and international students improves the open-minded, social and intercultural competence.
Strictly, the term "Photonics" stands for the science of photon. Today the term incorporates many novel disciplines. In the essence, graduates of the Photonics Master course preferably work in one of the following occupational areas:

- optical information and communication
- industrial manufacturing
- lighting
- life science.

Graduates are particularly well educated for a leading position in research and development, where advanced theoretical knowledge of physics and optics are combined with practical experience. Examples are

- development and application of lasers and laser systems,
- development of fiber-optic components and systems,
- design and development of optical instruments,
- novel techniques for lighting and displays,
- design and application of medical systems for diagnosis and therapy.

The students will learn

Specifically "Photonics" not only denotes the particle properties of light, the term incorporates all practical applications of optics, and the potential to create, transport and process optical signals. Photonic techniques are used in various fields. The combination of medical problems and photonic technologies proved to exhibit a high economical potential.

Consequently, this Master course provides a profound knowledge of innovative technologies in Photonics. The student achieves the qualification for a leading position in industry or research. Attending courses, the students expand their scientific knowledge in quantum optics, photonic detectors and devices, optical communication networks, lasers and non-linear optics, optical metrology systems, and physical optics. In optional courses, students identify special photonic subjects in addition.

Projects provide social and analytical skills: By means of laboratory work, students find either self-reliant or in a team the solution path for a complex problem. Students present their intermediate results to fellow students.

This Master diploma of Photonics by Aalen Applied University achieves the degree Master of Science for subsequent doctoral thesis.

II - Program structure and scope

(1) The regulations of the general part of the study and examination regulations apply to the Master's degree program, insofar as they are not regulated differently by § 48.

(2) Admission to the Photonics degree program is governed by its own admission regulations.

(3) The standard course of study for the Master's degree course in Photonics comprises three semesters. The duration of the entire course, including the Master's thesis, is a maximum of 6 semesters. If the maximum duration is exceeded, admission to the course expires due to exclusion, unless the student is not responsible for exceeding the deadline.

(4) The total number of compulsory and compulsory elective courses required to successfully complete the degree program is 90 ECTS credits. Of these, 70 ECTS credits must be earned in the compulsory area and 20 ECTS credits in the compulsory elective area. In the 1st + 2nd semester, 2 electives each should be completed from the range of courses offered by the degree program.

(5) In accordance with the table below, all examinations from the mandatory units, including any preliminary examinations, must be passed. Any examination not taken will not be counted.

(6) Every student is automatically registered for all examinations from the compulsory area of their current semester as well as for examinations from the compulsory area of previous semesters that have not yet been completed. Students must register for the examinations from the elective area within the period announced on the notice board. It is also possible to deregister from examinations that have already been registered for during the same period. An examination not taken will not be assessed.

(7) Contrary to Section 18 (2) sentence 1 of these statutes, each failed examination may be repeated a maximum of two times. A failed 3rd attempt leads to exclusion from this degree program.

(8) The duration and structure of the degree program, courses with semester hours per week, subject examinations with examinations and the number of ECTS credits can be found in the following tables. Further information can be found in the module handbook of the degree program.

(9) Contrary to § 35 Studium Generale, no separate workload has been defined in the curriculum, as this is already integrated in the standard course of study in module 33001 "Project / Soft Skills".

(10) The Master's thesis includes a public oral colloquium presentation (graded at 20% of the thesis) and a written report on the Master's thesis (graded at 80% of the thesis). To register for the Master's thesis, students must have at least 50 ECTS credits and have passed the Project module examination.

(11) Additional exclusion from the degree program:
Admission and the right to participate in examinations expires if

a) the student has achieved fewer than 15 ECTS credits after the 1st semester of study,

b) the student has achieved a total of less than 30 ECTS credits after the 2nd semester,

c) the student has not achieved at least 40 ECTS credits after the 3rd semester.

Master Examination
Mandatory Courses:

No.	**Subject examination/ Lecture**	Type	Sem.1 h/week	Sem. 2 h/week	Sem. 3 h/week	ECTS
33001	**Project / Soft Skills**					**5**
33101	Project / Soft Skills	L	4			5
33002	**Interferometry**					**5**
33102	Interferometry	V	4			5
33003	**Quantum Optics**					**5**
33103	Quantum Optics	V,L	4			5
33004	**Photonics Detectors and Devices**					**5**
33104	Photonics Detectors and Devices	V	4			5
33005	**Laser and Non-linear Optics**					**5**
33201	Laser and Non-linear Optics	V		4		5
33006	**Optical Communication Networks**					**5**
33202	Optical Communication Networks	V		4		5
33007	**Optical Metrology Systems**					**5**
33203	Optical Metrology Systems	V, L		4		5
33008	**Physical Optics**					**5**
33204	Physical Optics	V		4		5
9999	**Master Thesis**					**30**
9999	Master Thesis				X	30
	Sum of h/week (Mandatory Courses)		**16**	**16**		
	Sum of required ECTS-scores		**20**	**20**	**30**	**70**
	Total number of examinations in optional and mandatory section		**6**	**6**	**1**	

Optional Courses (2 Optional Courses with 10 ECTS-scores in each semester):

No.	**Subject examination/ Lecture**	Type	Sem.1 h/week	Sem. 2 h/week	Sem. 3 h/week	ECTS
33030	**Optical Fiber Communication**					**5**
33130	Optical Fiber Communication	V, E	6			5
33031	**Analog Signal Processing**					**5**
33131	Analog Signal Processing	V,L	4			5
33032	**Advanced Image Processing**					**5**
33132	Advanced Image Processing	V,L	4			5
33033	**Laser Application Technology**					**5**
33133	Laser Application Technology	V, L	4			5
33034	**Matlab/ Simulink**					**5**
33134	Matlab/ Simulink	V, L	4			5
33035	**Fundamental Optics**					**5**
33135	Fundamental Optics	V, L	2			5
33036	**Optical Design**					**5**
33236	Optical Design	V, L		2		5
33037	**Optics Technology**					**5**
33237	Optics Technology	V, L		4		5
33038	**Biophotonics**					**5**
33238	Biophotonics	V,L		4		5
33039	**Advanced Optical Design**					**5**
33239	Advanced Optical Design	V,L		4		5
33040	**Laser Technology**					**5**
33240	Laser Technology	V,L		4		5
33041	**Illumination**					**5**
33241	Illumination	V		4		5
33042	**Light Technology (offered by HAW Weingarten and Opsira GmbH)**					**5**
33242	Light Technology (offered by HAW Weingarten and Opsira GmbH)	V, L		X		5

No.	**Subject examination/ Lecture**	Type	Sem.1 h/week	Sem. 2 h/week	Sem. 3 h/week	ECTS
33043	**International Photonics (courses of-fered in Halmstad or Barcelona)**					**15**
33243	International Photonics (courses of-fered in Halmstad or Barcelona)	V, L		X		15
	Sum of h/week (Optional Courses)		**24**	**22**		
	Sum of required ECTS-scores (Optional Courses)		**10**	**10**		**20**
	Total ECTS-scores		**30**	**30**	**30**	**90**

§ 49 Study program "SME Management (Master of Arts)"

I - Preamble - Qualification objectives

The **consecutive Master's in SME Management** is a full-time course with a standard period of study of three semesters and offers graduates with above-average qualifications from Bachelor's courses in economics a specialization in the field of SME management. It is designed as a more application-oriented course of study starting in the winter semester. The last semester is used to write the Master's thesis (§ 45 SPO 29). The courses and associated examinations are held in German or English. The language is specified in the module description (§ 45 SPO 29). Upon completion of the program, graduates are awarded the degree **of Master of Arts in Management**.

In the Master's degree course in SME Management, graduates learn to solve management and leadership tasks in medium-sized companies. Special emphasis is also placed on qualifying students to assess and independently implement business ideas. Students can select in-depth specialist knowledge in the areas of state-of-the-art practice-oriented management methods and cross-sectional skills, which they apply in the course of diverse regional and international collaborations, case studies and practical projects. The curriculum of the Master's program in SME Management is characterized in particular by a great deal of freedom of choice for students. This includes the opportunity to take a closer look at topics such as innovation management and sustainability in order to develop their own problem-solving strategies. Furthermore, graduates have the following skills:

- Graduates have acquired in-depth knowledge in the field of management and can apply this within management tasks in medium-sized companies.
- Graduates are able to solve problems independently thanks to the social skills they have acquired through projects and case studies.
- They also have the ability to argue with negotiating skills and can therefore be convincing in the private sector.
- Graduates are proficient in analytical methods to understand complex procedures and processes and are able to describe, analyze, explain and evaluate interrelationships.
- By completing the Master's thesis, graduates are able to work scientifically and think critically.
- They have the ability to defend their research results and to present complex issues convincingly in writing and orally.

II - Program structure and scope

(1) General information

a) The "Mittelstandsmanagement (Master of Arts)" course is a full-time course with a standard period of study of three semesters. The last semester is used to complete the Master's thesis.

b) The courses and associated examinations are held in German or English. The language is specified in the module description.

(2) Admission

Admission to the course is regulated in a separate set of admission regulations.

The selection committee decides on the additional work to be completed by applicants with a degree of less than 210 credit points in accordance with the admission regulations.

(3) Structure and content

a) The degree program is divided into four parts:
   - Compulsory core program comprising six modules with 5 CP each (3 modules in the first semester, 3 modules in the second semester),
   - In the compulsory elective area, a module worth 5 CP must be selected from the compulsory elective area in the first and second semesters.
   - Free compulsory elective program, in which two modules of 5 CP each are to be selected in the first and second semesters from the entire compulsory elective offer of the degree program or, with the approval of the examination board, from the Master's offer of Aalen University,
   - Master's thesis with 30 CP.

b) The modules and courses offered in the core elective program may be subject to change. There is no entitlement to attend a specific module or course.

c) The degree program may issue guidelines on the choice of compulsory elective modules by resolution of the Examination Board by means of a notice or announcement in the usual form.

d) The structure of the degree program, the modules / sub-modules, the courses with the number of hours per week per semester and the number of credit points (CP) can be found in the following tables and in the module descriptions in the module handbook of the degree program.

(4) Master's thesis

The Master's thesis can only be started if at least 255 credit points have been achieved in the previous course of study (Bachelor's and Master's degree program) (85% of the total 300 CP to be achieved).

By resolution of the Examination Board, the degree programme may issue additional guidelines by notice or announcement in the usual form, which regulate the content and formal requirements for the Master's thesis as well as questions of procedural organization and assessment.

(5) No separate workload has been defined in the curriculum for the Studium Generale, as the corresponding workload is already integrated into the standard course of study.

(6) Exclusion from the degree program

a) Admission to the degree program expires if the student has achieved fewer than 15 credit points after the first semester of study or fewer than 40 credit points after the second semester of study.

b) the right to take examinations and admission to the degree program expires if the student has not completed all the examinations required for the final examination by the end of the sixth semester after commencement of studies at the latest.

c) The right to take examinations and admission to the degree program shall not expire if the student is not responsible for the failure to meet this deadline. The Examination Board will decide on this at the student's request.

"SME Management" Compulsory program						
No.	**Module/** Course	**Type**	**Semester** SWS			**CP**
			1	2	3	
36001	**Leadership competence**		**4**			**5**
36101	Leadership competence	V, Ü	4			5
36002	**Scientific methodology**		**4**			**5**
36102	Scientific Methodology	V, Ü,	4			5
36003	**Business start-up**		**4[1)]**			**5**
36201	Business start-up	V, Ü, P	4			5
36004	**SME management & practice transfer**		**4[1)]**			**5**
36202	SME Management & Practice Transfer	V, Ü, P	4			5
36005	**SMEs and law**			**4**		**5**
36203	Small and medium-sized enterprises and law	V, Ü,		4		5
36006	**Innovation and cooperation management**		**4**			**5**
36103	Innovation and cooperation management	V, Ü, P	4			5
	Number of SWS		**16**	**8**		
	Number of CP		**15**	**15**		**30**
	Number of exams		**3**	**3**		

[1)]In the first and second semester, 2 SWS each are planned, the ECTS points are credited in the 2nd semester.

The corresponding examination takes place in the 2nd semester

"SME Management" Compulsory elective area (at least 2 modules)						
No.	**Module/** Course	**Type**	**Semester** SWS			**CP**
			1	2	3	
36007	**Portfolio management**			**4**		**5**
36204	Portfolio Management	V, Ü		4		5
36008	**Relationship Marketing**		**4**			**5**
36104	Relationship Marketing	V, Ü, P	4			5
36009	**Sustainable success assurance**			**4**		**5**
36205	Sustainable success assurance	V, Ü, P		4		5
36010	**Information and media management**			**4**		**5**
36206	Information and media management	V, Ü, P		4		5
36011	**Strategic Management**			**4**		**5**
36207	Strategic Management	V, Ü, S		4		5
36012	**Supply Chain Management**		**4**			**5**
36105	Supply Chain Management	V, Ü, P	4			5
36013	**Alternative forms of financing in SMEs**		**4**			**5**
36106	Alternative forms of financing in SMEs	V, Ü, S, P	4			5
	Number of SWS		**4**	**4**		
	Number of CP		**5**	**5**		**10**
	Number of exams		**1**	**1**		

"SME Management" - Additional elective area (at least 4 modules)						
No.	**Module/** Course	**Type**	**Semester** SWS			**CP**
			1	2	3	
36014	**Elective module 1**					**5**
36107	Elective module 1 (Subjects from the compulsory elective area of the degree program or from the Master's program at Aalen University after approval)	V, Ü, S, P	X			5
36015	**Elective module 2**					**5**
36108	Elective module 2 (Subjects from the compulsory elective area of the degree program or from the Master's program at Aalen University after approval)	V, Ü, S, P	X			5
36016	**Elective module 3**					**5**
36208	Elective module 3 (Subjects from the compulsory elective area of the degree program or from the Master's program at Aalen University after approval)	V, Ü, S, P		X		5
36017	**Elective module 4**					**5**
36209	Elective module 4 (Subjects from the compulsory elective area of the degree program or from the Master's program at Aalen University after approval)	V, Ü, S, P		X		5
	Number of SWS					
	Number of CP		**10**	**10**		**20**
	Number of exams		**WB[2)]**	**WB[2)]**		

[2)]Number of examinations depending on choice

Master's thesis						
No.	**Module/** Course	**Type**	**Semester** SWS			**CP**
			1	2	3	
9999	**Master thesis**				**X**	**30**
9999	Written Master's thesis				X	30
9998	Master thesis colloquium				X	
	Total number of SWS		**20 + WB[3)]**	**12 + WB[3)]**		
	Total number of CP		**30**	**30**	**30**	**90**
	Total number of exams		**4 + WB[3)]**	**4 + WB[3)]**	**2**	**14**

[3)] WB = elective area

§ 50 Degree program " International Marketing & Sales (Master of Arts) "

I - Preamble - Qualification goals

The Master's degree course in International Marketing and Sales is a **consecutive attendance** course and is designed as a more application-oriented course. It is designed as a full-time, half-time course of study beginning in the winter semester. With a standard period of study of three semesters, the last semester is used to complete the Master's thesis. The courses and associated examinations are generally held in English. The language is specified in the module description.

On completion of their studies, graduates are awarded the **degree of Master of Arts in International Marketing and Sales.** This degree is geared towards the needs of manufacturing companies and provides graduates with the core competencies for tasks at the first to third management level. Internationalization and application orientation are at the forefront of the course. Graduates are optimally prepared for their work in sales/purchasing, firstly through the creation of a sound knowledge base and secondly through the English language of instruction, for which very good knowledge is already a prerequisite for admission.

- Graduates have acquired in-depth knowledge of marketing and sales in the industry. They are able to evaluate and design the core processes from product development to series production.
- Graduates are able to present and defend their research results and complex issues precisely in English, both orally and in writing. They have the ability to persuade and negotiate in an international context, as project work dominates the course.
- Graduates' qualifications are based on the stages of the "product of life cycle". They are able to plan and design the core processes along the value chain. Upon successful completion of the Master's thesis, graduates are able to work markets extremely successfully and independently as marketing and sales professionals. They can independently improve and design processes in the areas of marketing and sales and increase their efficiency.
- Graduates of the program are capable of scientific work due to the high-level projects and case studies carried out as part of the program and a corresponding Master's thesis.
- They are proficient in team building and organizational management in an intercultural environment and are able to act independently and critically because project work in teams is required in courses; often in cooperation with external, international partners from business and science.

II - Program structure and scope

(1) General information

a) The Master of Arts in International Marketing & Sales is a full-time course with a standard period of study of three semesters. The last semester is used to complete the Master's thesis.

b) The courses and associated examinations are offered in German or English. The language is specified in the module description.

(2) Admission

Admission to the degree program is regulated in separate admission regulations.

The selection committee decides on the additional work to be completed by applicants with a degree of less than 210 credit points in accordance with the admission regulations.

(3) Structure and content

a) The degree program is divided into four parts:
   - Compulsory core program comprising six modules (3 modules in the 1st semester, 3 modules in the 2nd semester) with 5 CP each,
   - In the compulsory elective area, a module worth 5 CP must be selected from the compulsory elective area in the first and second semesters.
   - Free compulsory elective program, in which two modules of 5 CP each are to be selected in the first and second semesters from the entire compulsory elective offer of the degree program or, with the approval of the examination board, from the Master's offer of Aalen University,
   - Master's thesis with 30 CP.

b) The modules and courses offered in the core elective program may be subject to change. There is no entitlement to attend a specific module or course.

c) The degree program may issue guidelines on the choice of compulsory elective modules by resolution of the Examination Board by means of a notice or announcement in the usual form.

d) The structure of the degree program, the modules, the courses with the number of hours per week per semester and the number of credit points (CP) can be found in the following tables and in the module descriptions of the degree program.

(4) No separate workload has been defined in the curriculum for the Studium Generale, as the corresponding workload is already integrated into the standard course of study.

(5) Master's thesis

The Master's thesis can only be started if at least 255 credit points have been achieved in the previous course of study (Bachelor's and Master's degree program) (85% of the total 300 CP to be achieved).

The degree programme can issue additional guidelines by resolution of the Examination Board by means of a notice or announcement in the usual form, which regulate the content and formal requirements for the Master's thesis as well as questions of procedural organization and assessment.

(6) Exclusion from the degree program

a) The right to take examinations and admission to the degree program expires if the student has not completed all the examinations required for the final examination by the end of the sixth semester after the start of the degree program at the latest.

b) The right to take examinations and admission to the degree program shall not expire if the student is not responsible for the failure to meet this deadline. The Examination Board will decide on this at the student's request.

"International Marketing and Sales Compulsory program						
No.	**Module/** Course	**Type**	**Semester** SWS			**CP**
			1	2	3	
34001	**Scientific Methodology**		**4**			**5**
34101	Methods of Scientific Analysis	V, Ü, S, P	4			5
34002	**Market Research in Marketing & Sales**		**4**			**5**
34102	Market Research	V, Ü, S, P	4			5
34003	**Marketing & Sales I**		**4**			**5**
34103	Advanced Marketing & Sales	V, Ü, S, P	4			5
34004	**Marketing & Sales II**			**4**		**5**
34201	Marketing of Industrial Goods	V, Ü, S, P		4		5
34005	**Legal Environment of Marketing & Sales**			**4**		**5**
34202	Distribution Law	V, Ü		4		5
34006	**CRM Development**			**4**		**5**
34203	Advanced CRM & Development	V, Ü, S, P		4		5
	Number of SWS		**12**	**12**		
	Number of CP		**15**	**15**		**30**
	Number of exams		**3**	**3**		

"International Marketing and Sales" Compulsory elective area (at least 2 modules)						
No.	**Module/** Course	**Type**	**Semester** SWS			**CP**
			1	2	3	
34007	**Managerial Economics**		**4**			**5**
34104	Managerial Economics & Pricing	V, Ü, S, P	4			5
34008	**Complex Organizational Structures**		**4**			**5**
34105	Development of Global Organizations	V, Ü, S, P	4			5
34009	**Persuasion & Negotiation**		**4**			**5**
34106	Addressing & Winning Customers	V, Ü, S, P	4			5
34010	**Business Intelligence**			**4**		**5**
34204	Advanced Business Intelligence	V, Ü, S, P		4		5
34011	**Diversity Management**			**4**		**5**
34205	Team Work Processes	V, Ü, S, P		4		5
34012	**Market Economics**			**4**		**5**
34206	International Economics and Markets	V, Ü, S, P		4		5
	Number of SWS		**4**	**4**		
	Number of CP		**5**	**5**		**10**
	Number of exams		**1**	**1**		

"International Marketing and Sales" - Additional elective area (at least 4 modules)						
No.	**Module/** Course	**Type**	**Semester** SWS			**CP**
			1	2	3	
34013	**Elective module 1**					**5**
34107	Elective module 1 (Subjects from the compulsory elective area of the degree program or from the Master's program at Aalen University after approval)	V, Ü, S, P	X			5
34014	**Elective module 2**					**5**
34108	Elective module 2 (Subjects from the compulsory elective area of the degree program or from the Master's program at Aalen University after approval)	V, Ü, S, P	X			5
34015	**Elective module 3**					**5**
34207	Elective module 3 (Subjects from the compulsory elective area of the degree program or from the Master's program at Aalen University after approval)	V, Ü, S, P		X		5
34016	**Elective module 4**					**5**
34208	Elective module 4 (Subjects from the compulsory elective area of the degree program or from the Master's program at Aalen University after approval)	V, Ü, S, P		X		5
	Number of SWS					
	Number of CP		**10**	**10**		**20**
	Number of examinations		**2 (WB)**	**2 (WB)**		

Master's thesis						
No.	**Module/** Course	**Type**	**Semester** SWS			**CP**
			1	2	3	
9999	**Master thesis**				**X**	**30**
9999	Written master thesis				X	24
9998	Master's thesis colloquium				X	6
	Total number of SWS		**16 + WB***	**16 + WB**		
	Total number of CP		**30**	**30**	**30**	**90**
	Total number of exams		**4 +2 (WB)**	**4+2 (WB)**	**2**	**14**

*WB = elective area

§ Section 51 Master of Arts in Health Management degree program

I - Preamble - Qualification objectives

General information

The Master's degree course in Health Management is a consecutive attendance course and is designed as a strongly application-oriented course. It is designed as a half-cycle course starting in the winter semester. The Master's degree course has a standard duration of four semesters. The last semester is used to complete the Master's thesis. The courses and associated examinations are held in German or English. The language is specified in the module description.

Target groups

As a "**practice-integrated degree course**", the Master's degree course in Healthcare Management offers students the opportunity to work professionally during their studies and thus gain access to the entire field of healthcare management. The combination of studies and practical activities is intended to promote the practical transfer of in-depth and detailed knowledge on the one hand and to enable the establishment and expansion of a network of contacts with potential industry employers, associations and academia on the other.

As a **2-pillar concept**, the Master's degree program in Health Management offers comprehensive teaching of content and skills from the fields of economics and health science. Building on this, students are able to choose between elective modules from the fields of economics and health sciences as well as supplementary legal modules in a target group-oriented manner. This is intended to enable students to sharpen their individual profile. The Master's degree program in Health Management thus enables prospective students with an economics background to acquire specialist knowledge from the healthcare sector. In addition, students with a health science background can expand their leadership skills and deepen their basic business knowledge.

Global objective

On completion of their studies, graduates are awarded the degree of Master of Arts in Health Management (M.A.). Graduates of the Master's degree program in Healthcare Management are prepared to take on leadership roles in healthcare and business management. In particular, graduates master the skills required to manage companies in the health and social sector. In addition, graduates are able to take on and assume responsibility for health-related management tasks in all sectors, especially in occupational health management. They are able to select modern, practice-oriented management methods according to their suitability, apply and control them professionally, as well as transfer core concepts of business and health management in a practice-oriented manner and apply, control and evaluate them efficiently based on their experience from case studies and practical projects. They also have broad and proven leadership and social skills.

Detailed objectives

Graduates will face major challenges in coping with the upcoming fundamental changes in the healthcare sector (demographic change/technical progress). The skills and qualifications acquired on the Master's degree course in Healthcare Management will enable them to fill a variety of positions/functions in the healthcare sector as specialists with management responsibility in the constantly growing healthcare and nursing market. As stakeholders, they also gain in-depth knowledge of national and international healthcare systems. The focus is on teaching business skills and competencies for future managers in the healthcare sector, with the aim of integrating them into their future field of activity. The cross-actor orientation, which is reflected both in the target group of first-year students and the course content, and thus consequently in the potential fields of work, is immanent to the concept.

Students use the specialist and methodological skills they have acquired to analyze, structure and evaluate real-life issues across all stakeholders. They solve tasks from the entire healthcare market comprehensively and independently.

- **Professional competence: Health science subject canon:** Graduates are able to transfer the in-depth and detailed knowledge they have acquired in areas such as public health, demographic challenges, technology assessment and health law as well as occupational health management to fields of activity and areas of health management and to provide professional support for the associated control or change processes. Furthermore, they are able to contribute this knowledge to area-specific discussions

in a professional and scientifically sound manner and to transfer their knowledge and skills to related areas. (Exemplary areas of application here are tasks at association level and self-administration)

- **Professional competence: Business administration:** Graduates are able to apply the management and personnel skills acquired during their studies and their organizational-strategic know-how, e.g. in the areas of strategic corporate management, stakeholder management and healthcare compliance. With the help of the in-depth knowledge they have acquired, they will be able to assess, design and support quality-oriented management of industry companies and, if necessary, develop it further. (Exemplary areas of application here are tasks in classic functional, business management organizational units of healthcare facilities)
- **Leadership skills:** Graduates will be able to work independently and autonomously in a results-oriented manner as well as to lead teams in a results-oriented manner. In this context, they are able to scientifically examine and evaluate current issues in professional practice (independent literature research, creation of designs and integration of new case law).
- **Methodological competence**: As part of a scientific analysis, graduates are able to consider system-related characteristics in professional or practice-oriented fields of application and weigh up, select, apply and evaluate the appropriate methodology for the specific individual case from the multitude of business and health management instruments and methods.
    - **Special methodological competence in research:** In the event that modules with a research focus are selected in the compulsory elective area, graduates also acquire the following skills: Based on their broad knowledge of interdisciplinary research methods, graduates will be able to describe, analyze and explain connections and differences between the various disciplines. Graduates of the compulsory elective area of research modules have analytical thinking and judgment skills and the practical research skills to create research projects and publications.
- **Social skills:** Graduates are able to plan, manage and evaluate complex projects and transfer their acquired knowledge and skills to specific project assignments in a results-oriented manner. To ensure effective communication, they have in-depth communication and presentation skills as well as a strong ability to work in a team. In addition, they will be able to provide professional guidance to working groups and teams, lead them in a results-oriented manner and represent the results of their work.

Overall competence:

Graduates are able to evaluate patient-oriented and stakeholder-related contexts in the healthcare system and to define and assess control options derived from this. They can confidently and effectively describe and present the issues that arise and the results found in German and English, both orally and in writing.

The ability to engage in civil society can be promoted, among other things, through participation in the Studium Generale. Here (e.g. in seminars or through activities in social institutions), students acquire further soft skills and interdisciplinary competencies that are essential for their later professional life. As a result, graduates are able to discuss current and historical topics and develop an understanding of different points of view.

II - Program structure and scope

(1) The regulations of the general part of the study and examination regulations apply to the Master's degree course in Health Management, insofar as they are not regulated differently by this § 51.

(2) Admission to the Master's degree course in Health Management requires a first professionally qualifying Bachelor's/Diploma degree with a scope of generally 210 CP and is regulated by its own admission regulations.

(3) Structure and implementation

a) The Master's degree course in Healthcare Management can be studied on a career-integrated basis and has a standard period of study of four semesters. The last semester is used to complete the Master's thesis.

b) The modules and courses offered in the compulsory elective program may be subject to change. There is no entitlement to attend a particular module or course.

c) At the beginning of each semester, the degree program publicly announces a list of the compulsory elective modules available in addition to the compulsory elective modules and publishes it in the relevant media. The examinations in the compulsory elective modules of the degree program as well as courses from the Master's courses offered by Aalen University or Master's courses offered by other universities must be approved by the head of the examination office of the degree program and registered by the student via manual registration within the examination registration period.

d) The courses and associated examinations are held in German or English. The language is specified in the module description.

e) The Master's degree program may issue guidelines on the choice of compulsory elective modules by resolution of the Examination Board by means of a notice or announcement in the usual form.

f) Changes to the elective modules are issued by resolution of the Examination Board by notice or announcement in the usual form.

g) The structure of the degree program, the modules / sub-modules, the courses with the number of hours per week per semester and the number of credit points (CP) can be found in the following tables and in the module descriptions in the module handbook of the degree program.

h) Deviations from this and changes to the module descriptions require approval.

(4) The Master's degree program in Health Management is divided into four parts:

a) Compulsory program comprising seven modules with 5 CP each,

b) Compulsory elective program of the Master's degree course, in which two modules with 5 CP each must be selected from a specified list,

c) Free compulsory elective program, in which three further modules with 5 CP each can be selected from the entire Master's program or, with the approval of the examination board, from the Master's program offered by the university,

d) Master's thesis with 30 CP.

(5) No separate workload has been defined in the curriculum for the Studium Generale, as the corresponding workload is already integrated into the standard course of study.

(6) The Master's thesis can only be started if at least 255 credit points have been achieved in the previous course of study (Bachelor's and Master's degree course) (85% of the total 300 CP to be achieved).

(7) The Master's degree programme may, by resolution of the Examination Board, issue additional guidelines by notice or announcement in the usual form, which regulate the content and formal requirements for the Master's thesis as well as questions of procedural organization and assessment.

(8) Exclusion from studies

a) In the professionally integrated Master's degree course in Health Management, the right to take examinations and admission to the course expires if the student has achieved fewer than 20 credit points after the 2nd semester or fewer than 40 credit points after the 3rd semester.

b) The right to take examinations and admission to the Master's degree program shall not expire if the student is not responsible for not achieving these minimum values. The Examination Board will decide on this at the student's request.

Curriculum Master's degree program "Health Management"

No.	Compulsory program Modules / Courses	Type	Semester (SWS)				CP
			1	2	3	4	
32000	**Leadership Skills in Healthcare**		3				**5**
32100	Leadership in Healthcare	S, Ü	2				5
32102	Relationship and network management	V, S, Ü	1				
32002	**HR management in the healthcare sector**		**3**				**5**
32200	Corporate and personnel strategy	V, Ü	2				5
32202	HRM in practice	V, S		1			
32004	**Stakeholder management**			**4**			**5**
32300	Seminar on Management Issues I	V, S, P		2			5
32302	Seminar on management issues II	S, P			2		
32006	**Public Health**		**3**				**5**
32400	Theoretical foundations of public health	V, Ü	2				5
32402	Health systems research and design	V, Ü	1				
32008	**Technology assessment**			3			**5**
32500	Health Impact Assessment	V, S, Ü		1			5
32502	Health Technology Assessment	V, S, Ü		2			
32010	**Demographic challenges in the healthcare sector**				**3**		**5**
32600	Demography and health system financing	V, S			1		5
32602	Practical demography project	P			2		
32012	**Health law**			**4**			**5**
32700	Law of statutory health insurance / SGB V	V		2			5
32702	General medical law	V			2		
	SWS Compulsory section		**8**	**8**	**7**	**0**	
	CP Compulsory area		**10**	**10**	**15**		**35**
	Compulsory examinations		**2**	**2**	**3**		

No.	Compulsory elective program (at least 2 modules per semester) Modules / Courses	Type	Semester (SWS)				CP
			1	2	3	4	
32014	**Management/Business administration in healthcare facilities - a cross-section**		**3**				**5**
32103	Aspects of quantitative business administration	V, Ü	2				5
32104	Aspects of qualitative business administration	V, EXERCISE	1				
32016	**Quality and sustainability management**			**3**			**5**
32203	Service and quality	S, Ü		1			5
32204	Processes and innovations	S, Ü, P			2		
32018	**Advanced Management Skills**		**3**				**5**
32303	Change Management	S, Ü	2				5
32304	International Management Skills in Healthcare	S, Ü		1			
32020	**Health Promotion**			**3**			**5**
32403	Quality assurance in health promotion	V		1			5
32404	Occupational health management	S, Ü			2		
32022	**Introduction to the German healthcare system**		**2**				**5**
32503	Institutions	V	1				5
32504	Financing and remuneration	V	1				
32024	**Contract management**			**4**			**5**
32603	Collective and selective contracts	V		2			5
32604	Contract analysis and controlling	V		2			
32026	**Healthcare Compliance**			**3**			**5**
32703	General compliance and business ethics	V		1			5
32704	Healthcare Compliance	V, S			2		
32027	**Elective area 1**						**5**
32801	Elective subject from the Master's program at Aalen University		X				5
32028	**Elective area 2**						**5**
32802	Elective subject from the Master's program at Aalen University		X				5
32029	**Elective area 3**						**5**
32803	Elective subject from the Master's program at Aalen University		X				5
	CP Elective area		**10**	**10**	**5**		**25**

No.	Master's thesis Modules / Courses	Type	Semester (SWS)				CP
			1	2	3	4	
32030	**Master's thesis***					**X**	**30**
9999	Written Master's thesis					X	30
9998	Master thesis colloquium					X	
	SWS total**		**8 + WP**	**8 + WP**	**7 + WP**	**0**	
	CP total**		**10 PB + 10 WP**	**10 PB + 10 WP**	**15 PB + 5 WP**	**30**	**90**
	Total exams**		**2 + WP**	**2 + WP**	**3 + WP**	**MA**	

* Weighting according to § 26 para. 4 of the general part of the SPO.
** WP = compulsory elective area, PB = compulsory area, MA = Master's thesis

§ 52 Applied Management Science degree program (Master of Science)

I - Preamble - Qualification objectives

In contrast to traditional Master's programs, the focus of the Research Master's program is on applied research. Students work independently on current research topics in the economic and social sciences as well as at the interfaces of business and technology in several projects. This also ensures optimal practical relevance.
The overarching aim of the Applied Management Science degree program is to prepare graduates for a research-related career in the areas of

- Research and development
- corporate strategy
- management consultancy

consulting. In addition, the Master's program is a good basis for a subsequent doctorate and an academic career at universities.
Graduates' qualifications are geared towards the large number of business areas in which it is necessary to tackle complex issues themselves and to develop and defend scientifically sound opinions. The associated ability to use mathematical and statistical methods as analytical tools is highly valued as an attractive qualification.

Social skills such as independence, assertiveness, conflict resolution, initiative and a sense of responsibility are integrated into the course as soft skills within individual courses and through independent work on the respective research projects. The Studium Generale also offers the opportunity to deepen these skills individually.
Depending on their subject specialization through the various elective modules, graduates of the Master's degree course in Applied Management Science have the following qualifications at the end of their studies:

Professional competence

Knowledge and understanding:
1. They have in-depth knowledge in their respective subject specialization.

Skills:
2. At the end of the course, graduates are able to model, simulate and analyze applied economic issues using quantitative methods.
3. Graduates are proficient in understanding and writing scientific texts and are thus able to structure and communicate complex arguments.

Interdisciplinary competence

Social competence:
4. They are able to work closely with their respective supervisor, contributing appropriately.

Independence:
5. They are able to independently derive scientifically based recommendations for action by tackling complex problems independently and developing new solutions.
6. They are able to present and defend their results independently, both orally and in writing, in a manner appropriate to the target group.

II - Program structure and scope

(1) The Faculty of Business Administration and Economics offers a Master of Science in Applied Management Science for Bachelor graduates who have achieved an above-average degree.

(2) Admission is regulated by separate admission regulations.

(3) Implementation

a) The Master's program is offered once a year. The Master's program consists of a total of 3 semesters of standard study time, of which 2 semesters with 30 CP and a further semester in which the Master's thesis is completed, which is assessed with 29 CP. In each of the first two semesters, a research paper must be completed, including a research report and colloquium. Each research paper is awarded 10 CP.

b) The duration and structure of the degree program, modules, courses with the number of hours per week per semester and the number of credit points can be found in the following table and in the module handbook of the degree program.

c) The Studium Generale is a compulsory module worth 1 CP and must be completed within the study period.

d) Upon application, modules/partial modules passed from Master's programmes at German and foreign universities can be recognized by the Examination Board/Examination Office Director.

(4) In the compulsory elective area, 4 modules of 5 CP each must be selected. In the first semester, 1 module and in the second semester 3 modules should be selected from the compulsory elective modules offered or from the Master's program at Aalen University (after consultation with the advisor).

(5) Exclusion from studies

The duration of the entire degree program, including the Master's thesis, is a maximum of 6 semesters. If the maximum duration is exceeded, admission to the degree program expires. Furthermore, admission and the right to participate in examinations expires if the student has achieved less than 40 CP after the 2nd semester, unless the student is not responsible for not achieving the minimum CP value.

Curriculum

Compulsory modules						
No.	**Module/** Course	**Type**	**Semester SWS**			**CP**
			1	**2**	**3**	
Scientific work and self. Research						
24001	**Quantitative methods and statistics**					**5**
24101	Quantitative Methods	V,Ü	4			5
24002	**Reflection on the state of research**					**5**
24201	Literature review and meta-analysis	S		2		5
24003	**Research project 1**					**10**
24102	Research project 1	P	X			10
24004	**Research project 2**					**10**
24201	Research project 2	P		X		10
Compulsory modules for modeling						
24005	**Mathematical methodological competence**					**5**
24104	Mathematical methods seminar	S	2			5
24006	**Modeling**					**5**
24105	Quantitative and Qualitative Modeling Methodology	V,Ü	4			5
Compulsory elective modules (4 modules of 5 CP each)						
24007	**Mathematical models and methods**					**5**
24106	Mathematical models and methods	V,Ü	4			5
24008	**Modeling and simulation**					**5**
24203	Modeling and simulation	V,Ü,L		4		5
24009	**Business Dynamics**					**5**
24204	Business Dynamics	V,Ü,L		4		5
24010	**Advanced Management Science**					**5**
24205	Advanced Management Science	V,Ü		4		5
24011	**Elective 1**					**5**
24107	Further modules from Master's courses by arrangement (in the first or second semester)		X	X		5

Compulsory modules						
No.	**Module/** Course	**Type**	**Semester SWS**			**CP**
			1	**2**	**3**	
24555	**General Studies**					**1**
24555	General Studies				X	1
9999	**Master thesis with defense**					**29**
9999	Master's thesis with colloquium				X	29
	Total SWS		14	14	0	
	Total CP		25 + 5 WB[1)]	15 + 15 WB	29 + 1 SG[2)]	**90**
	Total exams		4 + 1 WB	2 + 3 WB	MA[3)] + SG	

[1)]WB = elective area
[2)]SG = General Studies
[3)]MA = Master's thesis

§ Section 53 Industrial Management degree program

I - Preamble - Qualification goals

Graduates of the Master's degree program in Industrial Management are prepared to take on leadership roles in technical management and beyond. They have acquired modern, practice-oriented management methods and core concepts of business administration and can apply these efficiently in professional practice based on their experience from case studies and projects. In addition, graduates have acquired and tested broad leadership and social skills. In the field of engineering, they have acquired broad specialist knowledge in the areas of modeling, simulation and information technology, which they can apply independently to technical problems.

- Graduates' qualifications are based on the stages of the "product life cycle" with the core processes along the value chain. Graduates of the course are therefore familiar with these core processes in detail, from product development to series production, and are able to evaluate and design them.
- They can manage a company's development processes, production and logistics. Graduates of the Industrial Management degree program can also define, improve, design and increase the efficiency of supporting processes in the areas of purchasing, finance/controlling, marketing and sales.
- As interdisciplinary know-how carriers between technology and business, they fulfill important bridging functions in companies and can, for example, manage production units (production / plant managers) or logistics units (logistics managers / supply chain managers).
- They can also be responsible for technically oriented purchasing or sales areas (purchasing manager, sales manager / customer business manager).
- Graduates of the program are qualified for scientific work due to the high-level projects and case studies carried out as part of the program and a corresponding Master's thesis.

Master's graduates of the Industrial Management course have thus acquired a sound knowledge of modern management methods and have learned to apply these efficiently to practical tasks, particularly at the interface between technology and business, but also beyond.

Focus area Engineering Sciences
Graduates are able to analyze product requirements and their functions and creatively contribute to product concepts with knowledge of system interrelationships and production technologies.
They understand how to develop and plan product creation processes while incorporating relevant product principles and taking into account technical and cost criteria with regard to available production factors and capacities. Furthermore, graduates will be able to weigh up alternatives from a fundamental existential point of view and contribute creative skills to future-oriented product systems, both as part of a team and independently, and deal with dynamic team processes.

Graduates are able to influence the design of complex product development and creation processes, taking into account all product requirements.

Focus area Business Administration / Marketing
Graduates are able to interpret and classify national and international capital markets and economic relationships and apply them to basic product requirements.

In particular, graduates are able to assess and analyze financing options and use the knowledge they have gained to intervene in financial and liquidity planning, including debt and tax law areas, in a future-oriented manner.
Graduates are able to analyze and interpret research methods and results in the field of innovation management and new product development as well as global economic decision-making scenarios.
With their wide-ranging knowledge and with the inclusion of IT systems, graduates can develop sales strategies from operational sales controlling, transfer analytical modeling processes to real systems and thus make a fundamental contribution to value-oriented corporate management.

Graduates can use instruments from quality management and marketing for competitive orientation and risk minimization. 3

Management specialization
Graduates are able to apply analytical and innovative methods in order to interpret complex processes and interrelationships of global framework conditions with regard to economic opportunities and risks and to project the results obtained from this onto process management.

Graduates are able to establish and evaluate organizational and operational schemes as well as operational and effective business planning in terms of projects and corporate strategy and to develop and implement competitive and future-oriented sales strategies.
They are able to initiate systematic innovation processes and apply the diverse skills they have acquired in both production and human resources management with regard to economic, ecological and social dimensions in a sustainable manner.

Graduates are able to present research and development results as well as complex issues in writing and orally using the latest working and presentation techniques depending on the situation. They can also be deployed in multinational work areas using the English language.

Master's graduates of the Industrial Management degree program are able to carry out management tasks in a responsible, structured and process-oriented manner and will be able to demonstrate persuasiveness and negotiating skills in typical management situations as well as with contractual partners and business relationships.

At Aalen University, the ability to engage in civil society is anchored in the curriculum of every degree program. Aalen University implements the requirements of the Bologna Process by integrating the Studium Generale into the course of studies. The guidelines drawn up for the Studium Generale regulate the implementation and consideration of the respective activities. In order to prepare students for professional life, it is essential to integrate soft skills into their studies. A comprehensive range of courses is created for each semester. There are many different types of Studium Generale events, including public lectures, seminars, activities in social institutions and voluntary work on committees.

II - Course structure and scope

(1) The regulations of the general part of the study and examination regulations apply to the Master's degree program, insofar as they are not regulated differently by § 53.

(2) Admission to the Industrial Management degree program requires a Bachelor's degree with, as a rule, 210 ECTS credits (CP) and is regulated by its own admission regulations. For the admission of applicants with a first professionally qualifying Bachelor's/Diploma degree with between 180 and 210 CP, please refer to the admission regulations.

(3) In the Master's degree course in Industrial Management, the standard course of study for students with a Bachelor's degree of 210 CP comprises three semesters. The total number of courses from the compulsory elective modules required for successful completion of the degree program is 90 ECTS credits.

(4) The following examinations must be passed during the degree course:

a) a selection of **4 modules** from the **engineering sciences** area (selection of 4 modules from the engineering sciences area of the curriculum or semester offerings of the degree program as well as a maximum of one module from the engineering sciences offerings of the university after approval by the chairperson of the examination board).
b) a selection of **3 modules** from the area of **business administration / marketing** (selection of 3 modules from the business administration area of the curriculum or semester offer of the degree program and a maximum of one module from the business administration offer of the university after approval by the chairperson of the examination board).
c) a selection of **3 modules** from the area of **management** (selection of 3 modules from the management area of the curriculum or semester offer of the degree program as well as a maximum of one module from the management offer of the university after approval by the chairperson of the examination board),
d) a selection of **2 modules** from all areas or from the Master's courses offered by Aalen University after approval by the Chair of the Examination Board
e) and the Master's thesis.

(5) The student must choose the courses in such a way that 30 CP are achieved per semester.

(6) Failure to take an examination is equivalent to an unexcused absence and will be assessed with 5.0. The criteria for passing the examination are set out in the module/course descriptions valid for the respective semester.

(7) One of the elective assignments listed under Para. 4 can be created as an academic paper (module number 16020) upon application and approval by the Chair of the Examination Board, provided that supervision of the paper is guaranteed. 5 CP are awarded for the preparation and presentation of the thesis.

(8) a) The degree program is divided into a compulsory elective area and an elective area.

b) Students primarily choose compulsory elective modules and elective modules from the courses offered in the degree program (the courses offered are in the fields of engineering, business administration/marketing and management). In addition, upon application to and approval by the Chair of the Examination Board, one module per area may be selected from other Master's degree programs at Aalen University as well as other universities.

c) The degree program undertakes to offer the compulsory elective modules annually.

d) The elective modules/electives can be offered annually. There is no entitlement to these elective modules in both semesters (winter and summer semester). At the beginning of each semester, the degree program publicly announces a list of the additional possible elective modules of the degree program and publishes it in the relevant media. Additional elective modules can be added with the approval of the Chair of the Examination Board.

(9) Failed examinations at Aalen University must be re-registered by the student for the following examination period.

(11) The duration and structure of the degree program, courses with semester hours per week, module examinations, their weighting for grading and the number of credit points can be found in the table below or in the module handbook for the degree program.

(12) At least 50 ECTS credits from this Master's degree program are required to register for the Master's thesis.

(13) A workload of 1 CP must be earned for the Studium Generale over the entire course of study.

(14) Additional exclusion from studies: Admission and the right to participate in examinations expires if

a) the student has achieved less than 15 CP from this Master's program after the 1st semester, or if

b) the student has achieved a total of less than 40 from this Master's program after the 2nd semester.

(15) Additional subjects

Subjects that the student has not registered as compulsory electives can be registered as additional subjects.

Curriculum Master Industrial Management - Compulsory elective modules

	Compulsory elective modules					
No.	**Module / Areas**	**Type**	**Semester** SWS			**CP**
			1	2	3	
	Engineering Sciences (Selection of 4 modules from 16101, 16102, 16103 or semester offer of the study program according to the list as well as max. one module from the engineering Master's offer of Aalen University as well as other universities after approval by the chairman of the examination board)					
16101	**Production Management**					**5**
16111	Production Management	V	4			5
16102	**Information Technology/ Projects**					**5**
16112	Information Technology/ Projects	V	4			5
16103	**Technical product development**					**5**
16113	Technical product development	V	4[1])	4[1])		5
16104	**Elective module from the engineering Master's program at Aalen University**					**5**
16114	Elective subject from the engineering master's program at Aalen University	V	X[2])	X[2])		5
	Business Administration / Marketing (Selection of 3 modules from 16201, 16202, 16203 or the semester offer of the degree program as well as max. one module from the business administration Master's offer of Aalen University as well as other universities after approval by the chairman of the examination board)					
16201	**Investment and financial planning**					**5**
16211	Investment and financial planning	V	4[1])	4[1])		5
16202	**Operational sales management**					**5**
16212	Operational sales management	V		4		

	Compulsory elective modules					
No.	**Module / Areas**	**Type**	**Semester** SWS			**CP**
			1	2	3	
16204	**Elective module from the Master's program in Business Administration at Aalen University**					**5**
16214	Elective subject from the Master's program in Business Administration at Aalen University	V	X[2])	X[2])		5
	Management (Selection of 3 modules from 16301, 16302, 16303 or the semester offer of the degree program as well as max. one module from the Management Master offer of Aalen University as well as other universities after approval by the chairperson of the examination board)					
16301	**Strategic Sales Management**					**5**
16311	Strategic sales management	V	4			5
16302	**Leadership / Sustainable Corporate Management**					**5**
16312	Leadership / Sustainable Corporate Management	V	4[1])	4[1])		5
16303	**Corporate strategy/controlling**					**5**
16313	Corporate Strategy/Controlling	V	4			5
16304	**Elective module from the management-related Master's program at Aalen University**					**5**
16314	Elective subject from the management-related Master's program at Aalen University	V	X[2])	X[2])		5
	Scientific work (can be chosen as an elective in all specializations)					
16401	**Scientific work**					**5**
16411	Scientific work	S	X[3])	X[3])		5

	Compulsory elective modules					
No.	**Module / Areas**	**Type**	**Semester** SWS			**CP**
			1	2	3	
	Free elective area entire Master's program of Aalen University (after approval by the PA)					
16501	**Elective module1**					**5**
165111	Elective module 1		X			5
16502	**Elective module 2**					**5**
16512	Elective module 2			X		5
	General Studies					
16999	**General Studies**				**X**	**1**
16600	**Master thesis**					**29**
9999	**Preparation of the Master's thesis**				X	24
9998	**Colloquium**				X	5
	Total SWS total		**24**	**24**		
	Total examinations		6	6	MA + SG[4])	
	Total in CPs		30	30	30	**90**

[1)]Course/lecture is offered in the winter and summer semester
[2)]Elective subject can be chosen in the winter and summer semester
[3)]Scientific work can be chosen in the winter or summer semester
[4)]MA = Master's thesis, SG = Studium Generale

§ 54 Master's degree program in Computer Science (Master of Science)

I - Preamble - Qualification goals

The aim of the Master's degree program in Computer Science is to enable graduates to solve complex tasks in computer science both individually and in teams and to drive developments forward independently through innovative contributions.

Graduates of the course are able to independently solve and develop scientific problems in computer science and implement them in practice. They are able to defend these arguments to laypersons and experts. They have in-depth general knowledge of computer science as well as specific knowledge from one of three specializations:

- Graduates of the computer science specialization are familiar with advanced methods and techniques of software development. In particular, they can assess the quality of classic software systems and those for mobile applications and ensure it through constructive measures. In addition to the quality of the software itself, this also includes the usability and adequacy of user interaction and the security of web applications. Graduates are able to analyze the structure and functioning of intelligent systems and can use them independently to solve new types of problems.

- Graduates specializing in IT security are familiar with the threats to the IT sector and defensive measures. They understand how complex IT systems work and can design, analyze and protect complex infrastructures, systems and applications from security threats. They can recognize and evaluate known and new threats and develop countermeasures using scientific methods. They can identify and analyze evidence of intrusion by unauthorized persons.

- Graduates specializing in media informatics know methods and techniques to adequately distribute editorial content via various innovative media. They can develop the necessary apps for mobile devices as well as classic web applications and also assess and ensure their security. You will also know the methods and techniques for providing users with adequate operation of the various media. They can analyze human-computer interactions and create and answer corresponding research questions.

Furthermore, graduates of the Master's degree course can demonstrate the following additional qualifications - depending on their electives: they can plan and develop intelligent autonomous systems, they are proficient in machine learning methods, they can implement embedded systems, real-time systems and distributed systems and they can select research methods and justify their choice.

Graduates of the Master's degree program are able to present and defend research results and complex issues precisely in writing and orally. They are prepared - both in a team and in management positions - to independently develop computer science issues and their solutions, or to promote their development through innovative contributions. They are able to take ethical and social aspects into account in their work.

You can work in the following fields, among others:

- Mobile applications
- Software quality management
- Media design, production and processing

- Design and evaluation of user interfaces
- Intelligent systems
- IT security auditing
- Software and web development
- IT security consulting
- System / network / firewall administration

The ability to engage in civil society is anchored in the Studium Generale. Aalen University implements the requirements of the Bologna Process by integrating the Studium Generale into the course of studies. By participating in the Studium Generale, students acquire additional soft skills and interdisciplinary competencies for their later professional life. There are many different types of Studium Generale events, including public lectures, seminars, activities in social institutions and voluntary work in committees, which enable graduates to discuss current and historical topics and develop an understanding of different perspectives.

II - Program structure and scope

1) The Faculty of Electronics and Computer Science offers a Master of Science in "Computer Science" for Bachelor students who have achieved an above-average degree. The number of study places is limited and access is regulated by admission regulations. Some subjects are offered in English. The regulations of the general part of the study and examination regulations of HTW Aalen apply to the Master's degree program, unless they are regulated differently by this special part.

2) In the Master's degree course in Computer Science, the standard course of study comprises three semesters. The duration of the entire course, including the Master's thesis, is a maximum of six semesters. If the maximum duration is exceeded, admission to the degree program expires due to exclusion, unless the student is not responsible for exceeding the deadline. With regard to the regulations for students with a Bachelor's degree of less than 210 CP, please refer to the admission regulations.

3) Admission requirements

   The admission requirements are regulated in separate admission regulations.

4) Implementation

   a) The Master's degree course consists of two semesters of study, each worth 30 CP, and a further semester in which the Master's thesis is completed, which is also worth 30 CP.

   b) The two semesters of the course are not consecutive, so lectures can be held annually, although it is still possible to start the course in the winter and summer semesters.

   c) Three specializations are offered, which students must choose at the beginning of their studies.

      - Computer Science (AI)
      - IT Security (ITS)
      - Media Informatics (MI)

5) Electives:

   Students choose from a semesterly list of elective courses or from the Master's courses offered by Aalen University (after approval by the Examination Board) a total of 4 elective modules, each worth 5 CP, for a total of 20 CP The respective semester corresponding to the major field of study in which the electives are to be completed can be found in the following curriculum.

6) At the beginning of each semester, the degree program publicly announces a list of possible elective courses and publishes it in the relevant media. Students must register for these elective courses manually within the examination registration period.

7) If more elective modules are passed than required, the best option is taken into account when calculating the final grade. A modified calculation can be made at the student's request.

8) The duration and structure of the degree program, courses with semester hours per week, module examinations, their weighting for the grade calculation and the number of credit points can be found in the table below or in the module handbook of the degree program.
9) To successfully complete the degree program, an independent academic thesis (Master's thesis) must be completed. This can be registered in the third semester at the earliest if at least 50 CP have been achieved by then. The Master's thesis must be presented in a colloquium after completion.
10) Exclusion from studies

    The duration of the entire degree course, including the Master's thesis, is a maximum of 6 semesters. If the maximum duration is exceeded, admission to the degree program is revoked.

11) Courses are offered in German and/or English.

Master's degree program in Computer Science - all specializations

No.	**Module /** Course	Type	Semester (SWS)			CP (ECTS points)
			summer semester (summer semester)	**winter semester** (winter semester)	**3.** semester	
28001	**Secure web applications**					**5**
28101	Secure web applications	V, Ü	4			5
28002	**Seminar (participation in the 1st semester)**					**5**
28102	Seminar	S	2			5
28003	**Project (participation in the 2nd semester)**					**10**
28104	Project work	P	2			10
28999	**General Studies**				**X**	**1**
9999	**Master thesis**				**X**	**29**
	SoSe = 1st semester **WiSe = 2nd semester**		**summer semester** (summer semester)	**winter semester** (winter semester)	**3.** semester	
	Total SWS - start in summer semester		**6**	**2**		
	Total CP - start in summer semester		**10**	**10**	**30 (29 MA* + 1 SG*)**	
	Total examinations - start in summer semester		**2**	**1**	**2**	
	WiSe = 1st semester **SoSe = 2nd semester**		**winter semester** (winter semester)	**summer semester** (summer semester	**3.** semester	
	Total SWS - start in winter semester		**2**	**6**		
	Total CP - start in winter semester		**5**	**15**	**30 (29 MA* + 1 SG*)**	
	Total examinations - start in winter semester		**1**	**2**	**2**	

Master's degree program in Computer Science - Major in Computer Science (AI)

No.	Module / Course	Type	Semester (SWS)			CP (ECTS points)
			summer semester (summer semester)	winter semester (winter semester)	3. semester	
28004	**Advanced Software Quality**					**5**
28105	Advanced Software Quality	V, Ü, L		4		5
28005	**Intelligent systems**					**5**
28106	Intelligent Systems	V,Ü	4			5
28006	**App Development**					**5**
28107	App Development	V, Ü, P	4			5
28007	**Advanced human-computer interaction**					**5**
28108	Advanced human-computer interaction	V, P		4		5
Elective area - Compulsory elective subjects amounting to 20 CP from the Master's courses offered by the university must be completed in accordance with the approval or listing of the degree program. The corresponding distribution depending on the start of studies in the summer or winter semester is listed below.						
28008	**Elective subject 1 (from the Master's courses offered by Aalen University after approval or listing of the degree program)**					**5**
28109	Elective 1 (from the Master's courses offered by Aalen University n.G. or list of the degree program)		X			5
28009	**Elective 2 (from the Master's courses offered by Aalen University n.G. or list of the degree program)**					**5**
28110	Elective subject 2 (from the Master's courses offered by Aalen University n.G. or list of the degree program)		X			5
28010	**Elective 3 (from the Master's courses offered by Aalen University n.G. or list of the degree program)**					**5**
28111	Elective subject 3 (from the Master's program of Aalen University n.G. or listing of the degree program)		X			5

28011	**Elective 4 (from the Master's program offered by Aalen University n.G. or listing of the degree program)**					**5**
No.	**Module /** Course	**Type**	**Semester** (SWS)			**CP** (ECTS points)
			summer semester (summer semester)	**winter semester** (winter semester)	**3. semester**	
28112	Elective subject 4 (from the Master's courses offered by Aalen University n.G. or list of the degree program - for start in SS = elective subject in WS for start in WS = elective subject in SS)		X			5
	SoSe = 1st semester, **WiSe = 2nd semester**		**summer semester** (summer semester)	**winter semester** (winter semester)	**3. semester**	
	Total SWS - AI - start in summer semester		**6**	**2**		
	Total CP - AI - start in summer semester		**10**	**10**	**30 (29 MA* + 1 SG*)**	
	Total examinations- AI - start in summer semester		**2**	**1**	**2**	
	WiSe = 1st semester **SoSe = 2nd semester**		**winter semester** (winter semester)	**summer semester** (summer semester	**3. semester**	
	Total SWS -AI - Start in winter semester		**2**	**6**		
	Total CP - AI - start in winter semester		**5**	**15**	**30 (29 MA* + 1 SG*)**	
	Total examinations - AI - start in winter semester		**1**	**2**	**2**	

*WB=elective area, WF=elective subject

Master's degree program in Computer Science - Major in IT Security (ITS)

No.	Module / Course	Type	Semester (SWS)			C
			summer semester (summer semester)	winter semester (winter semester)	3. semester	(EC poi
28004	**Advanced Software Quality**					**5**
28105	Advanced Software Quality	V, Ü, L		4		5
Elective subject						
28025	**Current applications of IT security (choice 1 of 3 from modules 28026, 28027 and 28028)**		**X**			**5**
28026	**Industrial and Embedded Security**					**5**
28113	Industrial and Embedded Security	V, Ü	4			5
28027	**Linux Sandboxing Technologies**					**5**
28919	Linux Sandboxing Technologies	V, Ü	4			5
28028	**Advanced topics in IT security**					**5**
28918	Advanced topics in IT security	V, Ü	4			5
28013	**Penetration testing and computer forensics**					**5**
28114	Penetration testing and computer forensics	V, Ü	4			5
28014	**Security of mobile devices**					**5**
28115	Security of mobile devices	V, EXERCISE		4		5

No.	**Module /** Course	Type	Semester (SWS)			CP (ECTS points)
			summer semester (summer semester)	**winter semester** (winter semester)	**3.** semester	
Elective area - Compulsory elective subjects amounting to 20 CP from the Master's courses offered by the university must be completed after approval or listing of the degree program. The corresponding distribution depending on the start of studies in the summer or winter semester is listed below.						
28015	**Elective subject 1 (from the Master's courses offered by Aalen University after approval or listing of the degree program)**					**5**
28118	Elective 1 (from the Master's courses offered by Aalen University n.G. or list of the degree program)		X			5
28016	**Elective 2 (from the Master's courses offered at Aalen University n.G. or list of the degree program)**					**5**
28119	Elective subject 2 (from the Master's courses offered by Aalen University n.G. or list of the degree program)		X			5
28017	**Elective subject 3 (from the Master's program of Aalen University n.G. or list of the degree program)**					**5**
28120	Elective subject 3 (from the Master's program of Aalen University n.G. or listing of the degree program)		X			5

No.	**Module /** Course	Type	Semester (SWS)			CP (ECTS points)
			summer semester (summer semester)	**winter semester** (winter semester)		
28018	**Elective 4 (from the Master's program of Aalen University n.G. or listing of the degree program)**					**5**
28121	Elective subject 4 (from the Master's program of Aalen University n.G. or listing of the degree program)		X			5
	SoSe = 1st semester, winter semester = 2nd semester		**summer semester** (summer semester)	**winter semester** (winter semester)	**3.** semester	
	Total SWS - ITS - Start in summer semester		**14 + WF***	**8 + WF***		
	Total CP - ITS - start in summer semester		**20 + 10 WF***	**20 + 10 WF***	**30 (29 MA* + 1 SG*)**	
	Total examinations - ITS - start in summer semester		**4 + 2 WF***	**3 + 2 WF***	**2**	
	WiSe = 1st semester SoSe = 2nd semester		**winter semester** (winter semester)	**summer semester** (summer semester	**3.** semester	
	Total SWS - ITS- Start in winter semester		**8 + WF***	**14 + WF***		
	Total CP - ITS start in winter semester		**15 + 15 WF***	**25 + 5 WF***	**30 (29 MA* + 1 SG*)**	
	Total examinations - ITS - start in winter semester		**3 + 3 WF**	**4 + 1 WF***	**2**	

*WF=elective subjects, WB=elective area

Master's degree program in Computer Science - Major in Media Informatics (MI)

No.	Module / Course	Type	Semester (SWS)			CP (ECTS points)
			summer semester (summer semester)	winter semester (winter semester)	3. semester	
28019	**Current applications of media informatics (choice 1 of 2)**					**5**
28120	Product Information Management Systems	P	4			5
28122	Technical Internet-based systems	P	4			5
28006	**App Development**					**5**
28107	App Development	V, Ü, P	4			5
28020	**Cross-Media Publishing**					**5**
28121	Cross-Media Publishing	V, Ü,S	4			5
28007	**Advanced human-computer interaction**					**5**
28108	Advanced human-computer interaction	V, P		4		5
Elective area - Compulsory elective subjects amounting to 20 CP from the Master's courses offered by the university must be completed in accordance with the approval or listing of the degree program. The corresponding distribution depending on the start of studies in the summer or winter semester is listed below.						
28021	**Elective 1 (from the Master's courses offered by Aalen University after approval or listing of the degree program)**					**5**
28116	Elective subject 1 (from the Master's courses offered by Aalen University n.G. or list of the degree program)		X			5
28022	**Elective 2 (from the Master's courses offered at Aalen University n.G. or list of the degree program)**					**5**
28117	Elective 2 (from the Master's program of Aalen University n.G. or list of the degree program)		X			5
28023	**Elective subject 3 (from the Master's courses offered by Aalen University n.G. or list of the degree program)**					**5**

No.	**Module /** Course	Type	**Semester** (SWS)			CP (ECTS points)
			summer semester (summer semester)	**winter semester** (winter semester)	**3. semester**	
28118	Elective 3 (from the Master's courses offered by Aalen University n.G. or listing of the degree program)		X			5
28024	**Elective 4 (from the Master's courses offered by Aalen University n.G. or list of the degree program)**					**5**
28119	Elective 4 (from the Master's courses offered by Aalen University n.G. or list of the degree program)		X			5
	SoSe = 1st semester, winter semester = 2nd semester		**summer semester** (summer semester)	**winter semester** (winter semester)	**3. semester**	
	Total SWS - MI - start in summer semester		**18 + WF***	**6 + WF***		
	Total CP - MI - start in summer semester		**25 + 1 WF***	**15 + 15 WF***	**30 (29 MA* + 1 SG*)**	
	Total examinations - MI - start in summer semester		**5 + 1 WF***	**2 + 3 WF***	**2**	
	WiSe = 1st semester SoSe = 2nd semester		**winter semester** (winter semester)	**summer semester** (summer semester	**3. semester**	
	Total SWS - MI - start in winter semester		**6 + WF***	**18**		
	Total CP - MI - start in winter semester		**10 + 20 WF***	**30**	**30 (29 MA* + 1 SG*)**	
	Total examinations - MI - start in winter semester		**2 + 4 WF***	**5**	**2**	

§ 55 Advanced Materials and Manufacturing (Master of Science) degree program

I Preamble - Qualification goals

The Master's degree program is a research-oriented training and further education program for students in the field of materials and manufacturing technology with the aim of enabling students to independently plan, successfully carry out and complete research and development projects (R&D projects).

To this end, students acquire the knowledge and skills that enable them to analyze and present research-oriented scientific issues and draw conclusions independently and as part of a team. Graduates will be able to evaluate complicated technical issues and problems and independently develop possible solutions. This means that they are able to solve scientific tasks and also present the results and findings precisely and comprehensibly in written form (as part of research reports, a Master's thesis and a scientific publication) as well as in poster and lecture form. In addition to specific specialist skills in the fields of materials and production engineering, students acquire methodological skills that enable them to solve complex scientific and technical problems in a systematic and structured manner.

Particular emphasis is placed on a sound basic education, i.e. the acquisition of well-founded scientific and engineering knowledge with specialization according to the chosen research topic from the fields of materials and production engineering. The specialist skills range from material selection and development in line with requirements, material testing and material analysis to the development of associated process technologies for the production and processing of materials. In the field of manufacturing technology, the specialist skills lie in the selection, evaluation and (further) development of suitable manufacturing and machining processes for specific manufacturing tasks, such as additive manufacturing or laser-assisted material processing. In addition, students are taught the skills required to solve complex problems in the field of design and component layout. In all three areas, students are enabled to use the appropriate tools to solve the problem and to proceed experimentally and using numerical models and simulations.

The specific nature and focus depends on the student's chosen research topic.

In addition to working on the chosen research topic, students take two technically-oriented compulsory elective modules from the Master's lecture program of the Faculty M/W, which are chosen specifically for the respective research topic. The selection of the compulsory elective modules is the responsibility of the first supervisor of the research work in consultation with the student. In this way, students acquire in-depth theoretical knowledge in line with their project work, which enables them to work on the research questions fundamentally on the basis of sound specialist knowledge.

Joint lectures and research presentations (for dealing with research questions from the field of materials and production engineering that go beyond the student's own field of research) ensure that knowledge is broadened as well as deepened.

In addition to technical skills, methodological and social skills such as R&D project management (including applying for research projects), teamwork, communication skills, language skills, internationality, presentation skills and media skills are also promoted.

The research-oriented teaching profile is supported by close cooperation in the field of research with industry and other research institutions (e.g. other universities, Fraunhofer Institutes, universities).

The graduates' fields of activity cover a wide range. They are qualified to pursue a doctorate. They also have the skills to take on challenging tasks in research, product and (manufacturing) process development, production or quality assurance. These can be located in the line or in projects.

At Aalen University, the ability to engage in civil society is anchored in the curriculum of every degree program. Aalen University implements the requirements of the Bologna Process by integrating the Studium Generale into the course of studies.

The guidelines drawn up for the Studium Generale regulate the implementation and consideration of the respective activities. In order to prepare students for professional life, it is essential to integrate soft skills into their studies.

Several courses are offered each semester as part of the Studium Generale. The content of the subject areas can vary from semester to semester depending on the teaching staff, professors and other lecturers. A comprehensive range of courses is compiled for each semester. There are many different types of

Studium Generale courses, including public lectures, seminars, activities in social institutions or voluntary work in committees (see also the HS Aalen guidelines on Studium Generale and the acquisition of social competence dated 10.06.2009).

II Structure and scope of studies

(1) The Faculty of Mechanical Engineering/Materials Engineering offers a Master of Science in Materials and Production Engineering for Bachelor students who have achieved an above-average degree in a relevant Bachelor program. The number of study places is limited and access is regulated by admission regulations. Some subjects are also offered in English.

(2) The Master's program is offered twice a year. The Master's program consists of a total of 3 semesters of standard study time, 2 semesters with 30 CP each and a further semester in which the Master's thesis is completed, which is assessed with 29 CP. In each of the first two semesters, a research paper including a research report and presentation must be completed, which is assessed with 20 CP.

(3) The duration and structure of the degree course, modules, courses with the number of hours per week per semester and the number of credit points can be found in the following table and in the module handbook for the degree course.

(4) The Studium Generale is a compulsory module worth 1 credit point and must be completed within the study period.

(5) Upon application, modules/partial credits from foreign universities can be recognized by the Examination Board/Examination Office Director.

(6) Exclusion from studies
The duration of the entire degree program, including the Master's thesis, is a maximum of 6 semesters. If the maximum duration is exceeded, admission to the degree program is revoked, unless the student is not responsible for this.

Curriculum of the Master of Science degree program

"Advanced Materials and Manufacturing"

No.	Module / Course	Type	Semester SWS			CP
			1	2	3	
Compulsory modules						
21001	**Research module 1**					**20**
21101	Research paper incl. research report and presentation	P, L, S	x			20
21002	**Research module 2**					**20**
21201	Research paper incl. research report and presentation	P, L, S		x		20
21003	**Project management**					**5**
21103	Tools of scientific work	V, Ü	2[1)]	2[1)]		5
21203	Innovation and R&D project management	V, Ü	2[1)]	2[1)]		
21004	**Technology**					**5**
21104	Materials, Manufacturing & Engineering Technology	V, P	2[2)]	2[2)]		5
21999	**General studies**					**1**
					X	1

[1)] These courses are always offered in the summer semester and conclude with a written examination. Depending on the start of their studies (summer or winter semester), students take the course either in their first or second semester. The 5 ECTS credits are therefore awarded in the summer semester.

[2)] This course is complementary to 21003 (Project Management) and is always offered in the winter semester and concludes with a presentation as an examination. Depending on the start of the course (summer or winter semester), students take the course either in their first or second semester. The contact time (lectures) is only 2 SWS, as students are required to work on a non-subject-related project parallel to the lecture, which must be presented and defended in the form of a presentation. The 5 ECTS credits are therefore awarded in the winter semester.

No.	Module / Course	Type	Semester SWS	CP

			1	2	3	
	Compulsory elective modules[3)]					
21005	**Compulsory elective module (WPM) 1**					**5**
21105	Technology I	V	4			5
21006	**Compulsory elective module (WPM) 2**					**5**
21106	Technology II	V		4		5
9998	**Research master thesis**					**29**
	Master's thesis incl. defense				x	29
	SWS		8*	6**	0	
	CP		30	30	29	
	Examinations		3	3	1	

3) At least 1 module must be selected per semester. A total of at least 10 CP must be achieved in the 2 selected compulsory elective modules. The courses offered in the Master's degree programs of the Faculty of Mechanical Engineering and Materials Engineering with a pronounced technical character are available for selection. The compulsory elective modules are to be selected by the students together with the respective supervisor of the research modules and approved by the chairperson of the examination board. In exceptional cases, courses from Master's degree programs of other faculties at Aalen University may also be selected. This requires an application with justification to the Chair of the Examination Board, who will decide on this.

* In the first semester if starting in the summer semester (SoSe) or in the second semester if starting in the winter semester (WS):

- SWS: 4 SWS project management (21003) + 4 SWS WPM 1 or WPM 2 (if starting in the winter semester)
- Examinations: Research module 1 or research module 2 (at the beginning of the winter semester), project management, WPM 1 or WPM 2 (at the beginning of the winter semester)

** In the second semester if starting in the summer semester or in the first semester if starting in the winter semester

- SWS: 2 SWS Technology (21004) + 4 SWS WPM 2 or WPM 1 (if starting in WS)
- Examinations: Research module 2 or research module 1 (at the beginning of the winter semester), Technology, WPM 2 or WPM 1 (at the beginning of the winter semester)

§ Section 56 "Business Development (Product Management & Start-up Management) (Master of Arts)" degree program

I - Preamble - Qualification goals

The **consecutive Master's in Business Development** is a full-time course with a standard period of study of three semesters and offers above-average qualified graduates of technical and economic bachelor's courses a specialization in the field of business development. The two specializations Product Management and Start-up Management are offered for this purpose. It is designed as a particularly strong application-oriented degree course with the two specializations "Product Management" and "Start-up Management" starting in the winter semester. The last semester is used to write the Master's thesis (§ 45 SPO 29). The courses and associated examinations are held in German or English. The language is specified in the module description (§ 45 SPO 29). Upon completion of the program, graduates are awarded the degree **of Master of Arts in Business Development**. In the Master's degree program in Business Development, graduates learn to solve tasks in start-up management and business development and to systematically develop business areas while leading interdisciplinary teams. In the Start-up Management specialization, the focus is on qualifying students to assess and independently implement business ideas. In the Product Management specialization, the focus is on qualifying students to responsibly manage new products and services within existing companies, from idea generation to implementation in innovation and production through to marketing. Students can select in-depth specialist knowledge in the areas of state-of-the-art, practice-oriented management methods and interdisciplinary skills, which they apply in the course of diverse regional and international collaborations, case studies and practical projects. The curriculum of the Master's program in Business Development is characterized in particular by a great deal of freedom of choice for students.

Graduates of the Master's program in Business Development have acquired the following skills:

- Graduates have acquired in-depth knowledge in the field of management and can apply this within management tasks in start-up companies and in product management in existing companies.
- Graduates are able to solve problems independently thanks to the social skills acquired in projects and case studies carried out on their own responsibility.
- They also have the ability to conduct negotiations in order to convince investors and decision-makers in the private sector.
- Graduates are proficient in analytical methods to understand complex procedures and processes and are able to describe, analyze, explain and evaluate interrelationships.
- By completing the Master's thesis, graduates are able to work scientifically and think critically.
- They have the ability to defend their research results and to present complex issues convincingly in writing and orally.

II - Program structure and scope

(1) General information

a) The Business Development (Master of Arts) course is a full-time course with a standard period of study of three semesters. The last semester is used to complete the Master's thesis.

b) The courses and associated examinations are held in German or English. The language is specified in the module description.

(2) Admission

Admission to the course is regulated in a separate set of admission regulations.

The selection committee decides on the additional work to be completed by applicants with a degree of less than 210 credit points in accordance with the admission regulations.

(3) Structure and content

a) The degree program is divided into five parts:
- Compulsory core program comprising six modules with 5 CP each (3 modules in the first semester, 3 modules in the second semester),
- In the first semester, students must choose a module worth 5 CP from the compulsory elective area.
- Free compulsory elective program, in which a total of 3 modules worth 5 CP each are to be selected in the first and second semesters with the approval of the Examination Board from the Master's program or technical Master's program at Aalen University,
- Master's thesis with 30 CP.

b) The modules and courses offered in the core elective program may be subject to change. There is no entitlement to attend a specific elective module or course.

c) The degree program may issue guidelines on the choice of compulsory elective modules by resolution of the Examination Board by means of a notice or announcement in the usual form.

d) The structure of the degree program, the modules / partial achievements, the courses with the number of hours per week per semester and the number of credit points (CP) can be found in the following tables and in the module descriptions in the module handbook of the degree program.

(4) Master's thesis

The Master's thesis can only be started if at least 255 credit points have been achieved in the previous course of study (Bachelor's and Master's degree program) (85% of the total 300 CP to be achieved).

By resolution of the Examination Board, the degree programme may issue additional guidelines by notice or announcement in the usual form, which regulate the content and formal requirements for the Master's thesis as well as questions of procedural organization and assessment.

(5) No separate workload has been defined in the curriculum for the Studium Generale, as the corresponding workload is already integrated into the standard course of study.

(6) Exclusion from the degree program

a) Admission to the degree program expires if the student has achieved fewer than 15 credit points after the first semester of study or fewer than 40 credit points after the second semester of study.

b) the right to take examinations and admission to the degree program expires if the student has not completed all the examinations required for the final examination by the end of the sixth semester after commencement of studies at the latest.

c) The right to take examinations and admission to the degree program shall not expire if the student is not responsible for the failure to comply with the regulations in letters a and b above. The Examination Board will decide on this at the student's request.

"Business Development Compulsory program						
No.	**Module/** Course	**Type**	**Semester** SWS			**CP**
			1	2	3	
79001	**Start-up Management**		**4**			**5**
79101	Start-up Management	V, Ü	4			5

79002	**Product Management**		**4**			**5**
79102	Product Management	V	2			5
79103	Exercises in product management	Ü	2			
79003	**Project Management / Quality Management**		**4**			**5**
79104	Project Management	V, Ü,	2			5
79105	Quality management	V, EXERCISE	2			
79004	**Company project / student research project part I**		**4***	**4***		**5**
79106	Company project / student research project Product Management and Start-up Management Part 1	P	4	4		5
79005	**Company project / student research project part II**		**4***	**4***		**5**
79201	Company project / student research project Product Management and Start-up Management Part 2	P	4	4		5
79006	**Business models and business plan**			**4**		**5**
79202	Business models and business plan	V, Ü		4		5
79007	**Leadership**			**4**		**5**
79203	Leadership/Sustainable Corporate Management	V, Ü		4		5
79008	**Project and start-up financing**			**4**		**5**
79204	Project and start-up financing	V, Ü		4		5
	Number of SWS		**16**	**16**		
	Number of CP		**20**	**20**		**40**
	Number of exams		**4**	**4**		

*Modules 79004 and 79005 are to be chosen in opposite directions depending on whether the student starts in the summer semester or winter semester.

"Business Development" Compulsory elective area for elective module 1						
No.	**Module/** Course	**Type**	**Semester** SWS			**CP**
			1	2	3	
79009	**Elective module 1 (elective module from the elective module)**		**X**			**5**
	Compulsory elective area					
79801	**Legal Environment of Marketing & Sales**		**4**			**5**
79811	Distribution Law	V, Ü	4			5
79802	**Persuasion & Negotiation**		**4**			**5**
79812	Addressing & Winning Customers	V, Ü, S	4			5
79803	**Innovation and cooperation management**		**4**			**5**
79813	Corporate Cooperation / Networks	V	2			5
79814	Innovation/technology/knowledge management	V	2			
79804	**Strategic Management**		**4**			**5**
79815	Strategic Management	V, Ü, S	4			5
79805	**Information and media management**		**4**			**5**
79816	Information and Media Management	V, Ü, P	4			5
	Number of SWS		**4**			
	Number of CP		**5**			**5**
	Number of exams		**1**			

"Business Development" - Additional elective area						
No.	**Module/** Course	**Type**	**Semester** SWS			**CP**
			1	2	3	
79010	**Elective module 2**			**X**		**5**
79817	Elective module 2 (Subjects from the compulsory elective area of the degree program or from the Master's program at Aalen University after approval)	V, Ü, S, P		X		5
79011	**Elective module 3**		**X**			**5**
79818	Elective module 3 (Subjects from the compulsory elective area of the degree program or from the Master's program at Aalen University after approval)	V, Ü, S, P	X			5
79012	**Elective module 4 - Technology**			**X**		**5**
79819	Elective module 4 - Technology (Subjects from the technical Master's program at Aalen University after approval)	V, Ü, S, P		X		5
	Number of SWS					
	Number of CP		**5**	**10**		**10**
	Number of exams		**WB[2)]**	**WB[2)]**		

[2)]Number of examinations according to choice

Master's thesis						
No.	**Module/** Course	**Type**	**Semester** SWS			**CP**
			1	2	3	
9999	**Master thesis**				**X**	**30**
9999	Written Master's thesis				X	30
9998	Master's thesis colloquium				X	
	Total number of SWS		**16 + WB[3)]**	**16 + WB[3)]**		
	Total number of CP		**20 + 5 WP + 5 WB**	**20+ + 10 WB**	**30**	**90**
	Total number of exams		**4 + 1 WP + WB[3)]**	**4 + WB[3)]**	**2**	**14**

[3)] WB = elective area, WP = compulsory elective area, MA = Master's thesis

§ 57 Advanced Systems Design (Systems Engineering) - Master of Science degree program

I Preamble - Qualification goals

The Master's degree program is a research-oriented training and further education program for students in the fields of electrical engineering, optics, optoelectronics, mechatronics and computer science with the aim of enabling students to independently plan, successfully carry out and complete research and development projects (R&D projects).

To this end, students acquire the knowledge and skills that enable them to analyze and present research-oriented scientific issues and draw conclusions independently and as part of a team. Graduates will be able to evaluate complicated technical issues and problems and independently develop possible solutions. This means that they are able to solve scientific tasks and also present the results and findings precisely and comprehensibly in written form (as part of research reports, a Master's thesis and a scientific publication) as well as in poster and lecture form. In addition to specific specialist skills in the fields of electrical engineering, optics, optoelectronics, mechatronics and computer science, students acquire methodological skills that enable them to solve complex scientific and technical problems in a systematic and structured manner.

Particular emphasis is placed on a sound scientific education, i.e. the deepening of sound engineering and scientific knowledge in accordance with the chosen research topic from the fields of electrical engineering, optics, optoelectronics, mechatronics and computer science.

The specialist skills taught in the field of electrical engineering cover the areas of electrical energy generation and transmission, grid feed-in, grid stability, conversion of electrical energy, electrical drive technology and power electronics. Knowledge in the related fields of control and automation technology is also taught. In the field of optoelectronics, optics and mechatronics, the specialist skills cover the areas of sensor technology, actuator technology, measurement technology, in particular optical measurement technology, and optical production technologies and their processes.

The Master's degree program enables students to independently plan and carry out the entire development process, from modeling and simulation to prototype construction and validation of the measurement results. To do this, they must be able to grasp and structure complex technical issues and implement them in a work and action plan.

The concrete form and focus depends on the specific research topic chosen by the students.

In addition to working on the chosen research topic, students take three technically-oriented compulsory elective modules from the Master's lecture courses offered by the Faculty of Electronics and Computer Science and the Faculty of Optics and Mechatronics, which are chosen specifically for the respective research topic. The selection of the compulsory elective modules is the responsibility of the first supervisor of the research work in consultation with the student. Final approval of the compulsory elective modules is given by the examination board. In this way, students acquire in-depth theoretical knowledge in line with their project work, which enables them to work on the research questions fundamentally on the basis of sound specialist knowledge.

Joint lectures and research presentations (dealing with research questions from the fields of electrical engineering, optics, optoelectronics, mechatronics and computer science that go beyond the student's own field of research) ensure that knowledge is broadened as well as deepened.

In addition to specialist skills, methodological and social skills such as R&D project management (including applying for research projects), teamwork, communication skills, language skills, internationality, presentation skills and media skills are also promoted.

The research-oriented teaching profile is supported by close cooperation in the field of research with industry and other research institutions (e.g. other universities, Fraunhofer Institutes, universities).

The graduates' fields of activity cover a wide range of topics. They are qualified to pursue a doctorate. They also have the skills to take on challenging tasks in research, development, project planning, production or quality assurance. These can be located in the line or in projects.

The ability to engage in civil society is anchored in the Studium Generale. Aalen University implements the requirements of the Bologna Process by integrating the Studium Generale into the course of studies. By participating in the Studium Generale, students acquire additional soft skills and interdisciplinary competencies that are essential for their future careers. There are many different types of Studium Generale events, including public lectures, seminars, activities in social institutions and voluntary work in committees, which enable graduates to discuss current and historical topics and develop an understanding of different perspectives.

II Course structure and scope

(1) The Faculty of Electronics and Computer Science offers a Master of Science in Advanced Systems Design (Systems Engineering) for Bachelor students who have achieved an above-average degree. The number of study places is limited and access is regulated by admission regulations.

(2) The Master's program consists of a total of 3 semesters of standard study time, of which 2 semesters are worth 30 CP each and a further semester in which the Master's thesis is completed, which is assessed with 29 CP. In each of the first two semesters, a research paper including a research report is to be completed, which is assessed with 18 CP, as well as a presentation, which is assessed with a further 2 CP.

(3) The duration and structure of the degree program, modules, courses with the number of hours per week per semester and the number of credit points can be found in the following table and in the module handbook for the degree program.

(4) The Studium Generale is a compulsory module worth 1 CP and must be completed within the study period.

(5) Upon application, modules/partial credits from foreign universities can be recognized by the Examination Board/Examination Office Director.

(6) Compulsory elective modules 1-3 (module numbers: 37004, 37005, 37006)

In the first two semesters, at least 3 compulsory elective modules must be selected, in which at least 5 CP must be earned per module.

The chosen compulsory elective modules must be selected from the range of Master's lectures at Aalen University. The student agrees the compulsory elective lectures with the supervising professor. The final approval of the compulsory elective modules is given by the Examination Board.

(7) Exclusion from studies

The duration of the entire degree program, including the Master's thesis, is a maximum of 6 semesters. If the maximum duration is exceeded, admission to the degree program is revoked. Furthermore, admission and the right to participate in examinations expires if the student has achieved less than 40 CP after the 2nd semester, unless the student is not responsible for not achieving the minimum CP value.

Curriculum "Advanced Systems Design (Systems Engineering)"

No.	Module / Course	Type	Semester of study SWS			CP
			1	2	3	
Compulsory modules						
37001	**Research module 1**					**20**
37101	Research paper incl. research report	P, L	x			20
37102	Research unit	S	x			
37002	**Research module 2**					**20**
37201	Research paper incl. research report	P, L		x		20
37202	Research unit	S		x		
37003	**Project Management**					**5**
37103	Tools of scientific work	V,Ü	2(1) ())	2(1) ())		5
37104	Innovation and R&D project management	V, P	2(1) ())	2[1)]		
37004	**Elective module 1[2)]**					**5**
37105	Elective module 1	V	X[2)]	X[2)]		5
37005	**Elective module 2**					**5**
37106	Elective module 2	V	X			5
37006	**Elective module 3**	V				**5**
37203	Elective module 3			X		5
9999	**Master thesis**					**29**
9999	Research master thesis incl. defense				X	
37999	General studies				X	1
	Total SWS		2 + PM/ WM + WM	2 + PM/ WM + WM[3)]	MA + SG[3)]	
	Total CP		30	30	30	
	Total examinations		1 + WM + PM/WM	1 + WM + PM/WM	MA + SG	

[1)] These courses are always offered in the summer semester and conclude with a written examination. Depending on the start of their studies (summer or winter semester), students take the course either in their first or second semester. The 5 ECTS credits are therefore awarded in the summer semester.

[2)] Elective module 1 (37004) must be chosen to complement 37003 (project management). Depending on the start of their studies (summer or winter semester), students take the course either in their first or second semester.

[3)] PM=Module Project Management, WM=Elective Module, MA=Master's Thesis, SG=Studium Generale

§ 58 Degree program "Auditing, Finance & Governance (Master of Arts)

I - Preamble - Qualification goals

The Master's degree course in Auditing, Finance and Governance is a consecutive attendance course and is designed as a more application-oriented course. It is designed as a full-time, half-time course of study starting in the winter semester. The courses and associated examinations are generally held in English. The language is specified in the module description.

On completion of their studies, graduates are awarded the degree of Master of Arts in Auditing, Finance and Governance. This degree is geared towards the needs of manufacturing and service-based companies and provides graduates with the core competencies for tasks at the first to third management level. Graduates are optimally prepared for their work in the areas of auditing, accounting, financial management and risk management, which is achieved on the one hand through the creation of a sound knowledge base and on the other hand through the predominant teaching language of English.

Graduates have acquired in-depth knowledge of internal and external auditing, risk management, accounting and corporate management in industry. Upon successful completion of the Master's thesis, graduates are able to work extremely successfully and independently as risk managers, controllers or auditors. Thanks to the projects and case studies carried out as part of the degree program, through which students acquire the competence to acquire industry-, business cycle- and company-specific knowledge, and a corresponding Master's thesis, graduates are capable of scientific work. Through two modules (qualitative and quantitative research methods) in particular, graduates acquire the qualification for further academic work, and the path to an academic career and research, e.g. a doctorate, is also open to them.

Graduates have the following skills:

- Graduates will be able to plan a research design appropriate to the research problem through in-depth knowledge of quantitative and qualitative research methods, critically evaluate different research methods and identify and apply the optimal research methods.
- Graduates are able to accompany, assess and develop the processes of internal and external auditing and contribute to the successful completion of an audit. Graduates are able to analyse complex problem areas and cases in the field of (group) tax law and transfer pricing and make recommendations for tax optimization. They can apply the International Financial Reporting Standards (IFRS) and check their application for correctness.
- Graduates are proficient in the methods and concepts of capital market-oriented corporate management, financing theory and company valuation and can apply them to practical cases of globally active companies. They can understand, assess and react to the key changes of digitalization, globalization and process restructuring and their influence on all the areas of work mentioned (financial management, risk management, accounting and corporate governance) - in particular corporate finance.
- They are able to organize, independently improve and sustainably optimize processes in the areas of operational and strategic corporate management and control as well as risk identification, assessment and control.
- Graduates are able to apply the concepts of corporate management and control as well as risk management in an organization-specific manner and to assess existing management systems from a risk perspective.
- Graduates are able to present and defend their research results and complex issues precisely in English, both orally and in writing. They have the ability to persuade and negotiate in an international context.

- You are proficient in team building and organizational management in complex business situations. They are also able to act independently, critically and responsibly - often in cooperation with external, international partners from business and academia.

II - Program structure and scope

(1) General information

a) The Master of Arts in Auditing, Finance & Governance is a full-time degree program with a standard period of study of three semesters. The last semester is used to complete the Master's thesis.

b) The courses and associated examinations are generally offered in English. The language of the course is specified in the respective module description.

(2) Admission

Admission to the degree program is regulated in separate admission regulations.

The selection committee decides on the additional work to be completed by applicants with a degree of less than 210 credit points in accordance with the admission regulations.

(3) Structure and content

a) The degree program is divided into three parts:
- Compulsory study program comprising 10 modules (5 modules in the 1st semester, 5 modules in the 2nd semester) with 5 CP each,
- Free compulsory elective program, in which in the first and second semesters one module of 5 CP each can be selected from the compulsory elective offer of the degree program or, with the approval of the Examination Board, from the Master's offer of Aalen University. Only modules and courses in English can be selected outside the range of courses offered by the degree program.
- Master's thesis with 30 CP.

b) The modules and courses offered in the compulsory elective program are subject to change. There is no entitlement to attend a specific module or course.

c) The degree program may issue guidelines on the choice of compulsory elective modules by resolution of the Examination Board by means of a notice or announcement in the usual form.

d) The structure of the degree program, the modules, the courses with the number of hours per week per semester and the number of credit points (CP) can be found in the following tables and in the module descriptions of the degree program.

(4) No separate workload has been defined in the curriculum for the Studium Generale, as the corresponding workload is already integrated into the standard course of study.

(5) Master's thesis

The Master's thesis can only be started if at least 255 credit points have been achieved in the previous course of study (Bachelor's and Master's degree program) (85% of the total 300 CP to be achieved).

The degree programme can issue additional guidelines by resolution of the Examination Board by means of a notice or announcement in the usual form, which regulate the content and formal requirements for the Master's thesis as well as questions of procedural organization and assessment.

(6) Exclusion from the degree program

a) The right to take examinations and admission to the degree program expires if the student has not completed all the examinations required for the final examination by the end of the sixth semester after the start of the degree program at the latest.

b) The right to take examinations and admission to the degree program shall not expire if the student is not responsible for the failure to meet this deadline. The Examination Board will decide on this at the student's request.

Curriculum

"Auditing, Finance & Governance" - compulsory program						
No.	**Module/** Course	**Type**	**Semester** SWS			**CP**
			1	2	3	
40001	**Research in Business**		**4**			**5**
40101	Quantitative Research Methods	V, Ü, S, P	4			5
40002	**Corporate Finance**		**4**			**5**
40102	Corporate Finance	V, Ü, S, P	4			5
40003	**Corporate Governance**		**4**			**5**
40103	Corporate Governance	V, Ü, S, P	4			5
40004	**Compliance**		**4**			**5**
40104	Compliance	V, Ü, S, P	4			5
40005	**Auditing**		**4**			**5**
40105	Auditing	V, Ü, S, P	4			5
40006	**Qualitative Research in Business**			**4**		**5**
40201	Qualitative Research in Business	V, Ü, S, P		4		5
40007	**Emergent Issues in Governance**			**4**		**5**
40202	Emergent Issues in Governance	V, Ü, S, P		4		5
40008	**Digitization of Financial Services**			**4**		**5**
40203	Digitization of Financial Services	V, Ü, S, P		4		5
40009	**Transfer Pricing**			**4**		**5**
40204	Transfer Pricing	V, Ü, S, P		4		5
40010	**Risk Management & Controlling**			**4**		**5**
40205	Risk Management & Controlling	V, Ü, S, P		4		5
	Number of SWS		**20**	**20**		
	Number of CP		**25**	**25**		**50**
	Number of exams		**5**	**5**		

"Auditing, Finance & Governance" Compulsory elective area - offer of the degree program						
No.	**Module/** Course	**Type**	**Semester** SWS			**CP**
			1	2	3	
40011	**Group Taxation**		**4**			**5**
40106	Group Taxation	V, Ü, S, P	4			5
40012	**Keystone Project**			**4**		**5**
40206	Keystone Project	V, Ü, S, P		4		5
	Number of SWS		**4**	**4**		
	Number of CP		**5**	**5**		**10**
	Number of exams		**1**	**1**		

"Auditing, Finance & Governance" - Additional elective area						
No.	**Module/** Course	**Type**	**Semester** SWS			**CP**
			1	2	3	
40013	**Elective module 1**					**5**
40107	Elective module 1 (Subjects from the compulsory elective area of the degree program or from the Master's program at Aalen University after approval)	V, Ü, S, P	X			5
40014	**Elective module 2**					**5**
40207	Elective module 2 (Subjects from the compulsory elective area of the degree program or from the Master's program of Aalen University after approval)	V, Ü, S, P		X		5
	Number of SWS					
	Number of CP		**5**	**5**		**10**
	Number of examinations		**1 (WB)**	**1 (WB)**		

Master's thesis						
No.	**Module/** Course	**Type**	**Semester** SWS			**CP**
			1	2	3	
9999	**Master thesis**				**X**	**30**
9999	Written Master's thesis				X	30
9998	Master's thesis colloquium				X	
	Total number of SWS		**20 + WB***	**20 + WB**		
	Total number of CP		**30**	**30**	**30**	**90**
	Total number of exams		**5+1 (WB)**	**5+1 (WB)**	**MA**	**14**

*WB = elective area/compulsory elective area, MA = Master's thesis

§ 59 Master's degree in IT Security Management (continuing education/professional)

I - Preamble - Qualification goals

The part-time Master's degree program in IT Security Management combines knowledge areas of business administration and computer science, in particular IT security. The in-depth and interdisciplinary training provided as part of the Master's degree program in IT Security Management prepares students to take on outstanding specialist and management tasks in cyber security and IT security management and beyond. Graduates will be able to take on roles such as "Head of System Operation / Operating", "Head of IT Security Staff Function" or "Head of IT Audit". Further development into general management or a position as CIO is also conceivable.

Graduates...

- are able to solve technical and management-oriented problems in cyber security and IT security management independently and creatively.
- have acquired modern, practice-oriented methods of cyber security and IT security management as well as core concepts of business administration and can apply these efficiently in professional practice based on their experience from case studies and projects.
- can combine the subject-specific methods of business administration and computer science to develop new solutions to problems in complex contexts.
- are able to recognize weak points in application software, assess risks and develop and evaluate suitable countermeasures.
- are able to apply quantitative methods (e.g. in the area of big data) with which they can describe, analyze, explain and assess interrelationships in the area of cyber security in particular.
- understand complex processes in the IT environment and can independently design solutions to optimize these processes.
- are able to raise and answer questions from the fields of IT security management, business administration and computer science and to defend these in an argumentative manner vis-à-vis laypersons and experts.
- are able to develop their own areas of interest and work focus against the background of professional projects and independently develop their own skills and learning.
- are able to reflect on current professional challenges against the background of the course content covered in an exchange with fellow students and conduct interdisciplinary and interdisciplinary discussions.
- can lead groups responsibly in the context of complex tasks and achieve and represent group results within the given time frame.
- are capable of scientific work based on the projects, presentations and case studies carried out and a corresponding Master's thesis.
- are able to engage in civil society on the basis of the courses in the Studium Generale.

II - Program structure and scope

(1) The Master's degree program in IT Security Management (continuing education, part-time) comprises a workload of 90 CP for a first professional degree with 210 CP or 120 CP for a first professional degree with 180 CP.

(2) A workload of at least 300 CP must be achieved in the sum of the Bachelor's and Master's degree courses.

(3) The standard period of study is 5 semesters (90 CP) or 6 semesters (120 CP).

(4) The course is divided into a compulsory area, a compulsory elective area, the Studium Generale and a Master's thesis. The 120 CP variant also includes a project thesis.

(5) The examinations are usually taken during the attendance weekends. Students must register for this via the online procedures available at Aalen University (or in writing if necessary) at least three weeks before the examination date. Cancellation of examinations is possible up to one week before the examination date via the online procedures available at Aalen University (or in written form, if applicable).

(6) The Master's thesis is completed part-time and takes nine months to complete.

(7) Upon enrolment, the program coordinator will check the student's previous education in the areas of general business administration, project management, general management, accounting and controlling on the basis of the certificate from the undergraduate degree program on which admission is based.
Other relevant, comparable evidence (relevant professional experience, certificates, etc.) may be recognized after examination by the study coordinator.

(8) If no sufficient prior knowledge can be demonstrated in the areas of general business administration, project management, general management, accounting and controlling, one or more of the following subjects must be taken as a compulsory elective module as part of the degree program.

- 91201 ABWL for computer scientists,
- 91202 Project Management,
- 91203 General Management,
- 91204 Accounting and Controlling.

The student will be informed of any requirement in writing and the requirement will be included in the student's file.

(9) In the compulsory elective modules, modules from the Master's program offered by Aalen University or other universities may also be admitted upon application by the student and approval by the Examination Board.

Curriculum - 90-CP program:

No.	Module	Type	SWS		CP
			1. - 3.	4. - 5.	
91100	**Compulsory modules / compulsory area (work amounting to 40 CP)**				
91101	Cyber Security	V,Ü,L	3		5
91102	Application security	V,Ü,L	3		5
91103	Penetration testing and computer forensics	V,Ü,L	3		5
91104	IT security management	V,Ü,L	3		5
91105	IT governance and IT outsourcing	V,Ü,L	3		5
91106	Cloud computing	V,EX,L	3		5
91107	Business analytics: application development	V,Ü,L	3		5
91108	Business analytics: big data	V,Ü,L	3		5
91200	Compulsory elective module / compulsory elective area (4 of 14, corresponding to 20 CP)[1]				
91201	ABWL for computer scientists	V,Ü	3		5
91202	Project Management	V,Ü	3		5
91203	General Management	V,Ü	3		5
91204	Accounting and Controlling	V,Ü	3		5
91221	Enterprise Resource Planning	V,Ü,L	3		5
91222	Business Process Management	V,Ü,L	3		5

[1] When choosing subjects, §43a, para. 7 must be observed.

No.	Module	Type	SWS		CP
			1. - 3.	4. - 5.	
91223	Business Intelligence	V,Ü,L	3		5
91224	In Memory Data Management	V,Ü,L	3		5
91225	Information Management	V,Ü,L	3		5
91241	Quantitative methods of business administration	V,Ü	3		5
91242	Organization theory	V,Ü	3		5
91243	Corporate Finance	V,Ü	3		5
91244	Marketing Management	V,Ü	3		5
91245	Service Management	V,Ü	3		5
91999	General Studies	S		X	1
9999	Master thesis			X	29
9999	Master thesis	P		X	29
	Total SWS		36 (12 per semester)		
	Total examinations		12 (4 per semester)	MA + SG*	
	TOTAL		60 (20 per semester)	30	90

*SG= Studium Generale, MA= Master's thesis

(9) Curriculum - 120 CP program:

No.	Module	Type	SWS		CP
			1. - 4.	5. - 6.	
91100	**Compulsory module / compulsory area (40 CP)**				
91101	Cyber Security	V,Ü,L	3		5
91102	Application security	V,Ü,L	3		5
91103	Penetration testing and computer forensics	V,Ü,L	3		5
91104	IT security management	V,Ü,L	3		5
91105	IT governance and IT outsourcing	V,Ü,L	3		5
91106	Cloud computing	V,EX,L	3		5
91107	Business analytics: application development	V,Ü,L	3		5
91108	Business analytics: big data	V,Ü,L	3		5
91200	**Compulsory elective module (8 of 14, corresponding to 40 CP)**				**40[2]**
91201	ABWL for computer scientists	V,Ü	3		5
91202	Project Management	V,Ü	3		5
91203	General Management	V,Ü	3		5
91204	Accounting and Controlling	V,Ü	3		5
91221	Enterprise Resource Planning	V,Ü,L	3		5
91222	Business Process Management	V,Ü,L	3		5
91223	Business Intelligence	V,Ü,L	3		5

[2] When choosing subjects, §43a, para. 7 must be observed.

No.	Module	Type	SWS		CP
			1. - 4.	5. - 6.	
91224	In Memory Data Management	V,Ü,L	3		5
91225	Information Management	V,Ü,L	3		5
91241	Quantitative methods of business administration	V,Ü	3		5
91242	Organization theory	V,Ü	3		5
91243	Corporate Finance	V,Ü	3		5
91244	Marketing Management	V,Ü	3		5
91245	Service Management	V,Ü	3		5
91300	Project work				10
91301	Project work	P	X		10
91999	General Studies	S		X	1
9999	Master thesis			X	29
9999	Master thesis	P		X	29
	Total SWS		48 (12 per semester)		
	Total examinations		17 (4-5 per semester)	MA + SG*	
	TOTAL		90	30	120

*SG=Studium Generale, MA=Master thesis

§ 60 Master Analytical and Bioanalytical Chemistry

I Preamble - Qualification goals

Graduates of the Master's degree program in Analytical and Bioanalytical Chemistry are prepared to work on challenging chemical-analytical issues comprehensively and independently, in particular to evaluate and practically apply appropriate measurement techniques. The overriding aim is to qualify graduates for a research-related career in chemical, biochemical, pharmaceutical and related applications.

Specifically, graduates have the following qualifications:

- They have in-depth knowledge of modern chemical-analytical, spectroscopic and bioanalytical techniques and their applications, as well as in the evaluation and assessment of corresponding analysis results.
- Comprehensive chemical and biochemical knowledge with regard to the application to analytical questions is available.
- Graduates have gained practical experience in working with important analytical techniques, including the ability to independently develop appropriate measurement methods.
- Seminars, practical project work and electives support project-oriented work, independent planning and execution of (bio)analytical/chemical experiments as well as interdisciplinary thinking.
- Graduates are able to work independently on scientific issues and to argue well in technical discussions. They can take up doctoral studies as the next step in their academic career if they are qualified.

Graduates of the Master's degree program are able to present research results and complex issues orally and in writing in German and English. They are able to familiarize themselves independently with new topics in (bio)analytical chemistry, as well as to evaluate information accordingly and draw practical conclusions from it.

II Course structure and scope

(1) The Master's degree course in Chemistry comprises three semesters.

(2) The total number of compulsory and elective courses required for the successful completion of the course is 57 semester hours per week. The number of credit points is 90.

Admission is in accordance with the admission regulations.

(3) For the Master's thesis, the requirements according to §§ 23 - 26 of the general part apply.

(4) The Master's thesis is credited with 29 credit points.

(5) The duration and structure of the degree program, courses with semester hours per week, credit points, modules with examinations are shown in the following tables.

(6) In modules 31801 and 31802, modules worth 5 CP each must be selected. One module should be chosen in the first semester and one module in the second semester. After approval by the Dean of Studies, modules from the Master's program at Aalen University can be selected accordingly.

Curriculum

No.	**Module /** Course	Type	Semester	CP

			SS	WS	3	
Compulsory modules						
31001	**Spectroscopy**					**5**
31101	Optical Spectroscopy	V	2			5
31102	Mass Spectrometry	V	1			
31103	NMR spectroscopy	V	1			
31002	**Instrumental Analytical Chemistry**					**10**
31104	Instrumental Organic Analytical Chemistry	V	3			10
31105	Environmental analytics	V	1			
31106	Seminar Analytics	S	1			
31107	Biopharmaceutical analytics	V	2			
31108	Chemometrics	V	1			
31109	Chemometrics practical course	P	1			
31003	**Structural analysis**					**5**
31110	Crystal analysis	V		3		5
31111	Surface Analysis	V		1		
31004	**Bioorganic Chemistry and Nanomaterials**					**5**
31112	Catalytic Strategies	V		3		5
31113	Nanomaterials and Catalysis	V		1		
31005	**Nucleic acid analysis**					**5**
31114	Nucleic acid analysis	V	4			5
31115	Practical course in nucleic acid analysis	V	1			
31006	**Protein analysis**					**10**
31116	Protein analysis	V		4		10
31117	Practical course in protein analysis	P		1		
31118	Analysis of Posttranslational Modifications	V		3		
31119	Seminar Bioanalytics	S		1		
31007	**Research Laboratory 1**					**5**
31120	Project work 1	P	7			5
31008	**Research laboratory 2**					**5**
31121	Project work 2	P		7		5

No.	Module / Course	Type	Semester			CP
			SS	WS	3	
Elective modules						
31801	**Chemical/analytical elective module 1** (choice 1 out of 5 from courses 31810 - 31813)		**X**			**5**
31802	**Chemical/analytical elective module 2** (choice of 1 out of 5 from courses 31810 - 31814)			**X**		**5**
	Elective area for modules 31801 and 31802					
31810	Advanced protein analysis and structural analysis of natural products	V		4		5
31811	Modern methods of organic chemistry and structural analysis of natural products	V		4		5
31812	Chemistry of peptides and peptidomimetics, chemometrics, molecular modeling and bioinformatics	V	4			5
31813	Medicinal chemistry, chemometrics, molecular modeling and bioinformatics	V	4			5
31814	Elective subject from the courses offered by Aalen University after approval by the degree program		X			5

No.	Module / Course	Type	Semester			CP
			SS	WS	3	
Compulsory modules						
9999	**Master Thesis**				**X**	**29**
9999	Master thesis				X	29
31999	**General studies**				**X**	**1**
	Total SWS		depending on choice		0	
	Total CP		25 + 5 WP*	25 + 5 WP	30	
	Total examinations		depending on choice, but max. 5-6 per semester		MA* + SG*	

*WP=elective module, MA=Master's thesis, SG=Studium Generale

B. FINAL PROVISION

§ Section 61 Entry into force

These statutes come into force on the day after their publication.