AALBORG UNIVERSITET

CURRICULUM FOR THE MASTER'S PROGRAMME IN SOUND AND MUSIC COMPUTING, 2017, COPENHAGEN

MASTER OF SCIENCE (MSC) IN ENGINEERING
COPENHAGEN

Link to this studyline

Link(s) to other versions of the same line:

Curriculum for the Master's Programme in Sound and Music Computing, 2020, Copenhagen
Curriculum for the Master's Programme in Sound and Music Computing, 2022, Copenhagen

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§ 1: PREFACE

Pursuant to Act 261 of March 18, 2015 on Universities (the University Act) with subsequent changes, the following curriculum for the Master's programme in Sound and Music Computing is stipulated. The programme also follows the Joint Programme Regulations and the Examination Policies and Procedures for The Technical Faculty of IT and Design, The Faculty of Engineering and Science, and The Faculty of Medicine.

§ 2: BASIS IN MINISTERIAL ORDERS

The Master's programme is organised in accordance with the Ministry of Higher Education and Science's Order no. 1328 of November 15, 2016 on Bachelor's and Master's Programmes at Universities (the Ministerial Order of the Study Programmes) and Ministerial Order no. 1062 of June 30, 2016 on University Examinations (the Examination Order). Further reference is made to Ministerial Order no. 258 of March 18, 2015 (the Admission Order) and Ministerial Order no. 114 of February 3, 2015 (the Grading Scale Order) with subsequent changes.

§ 3: CAMPUS

The programme is offered in Copenhagen.

§ 4: FACULTY AFFILIATION

The Master's programme falls under The Technical Faculty of IT and Design, Aalborg University.

§ 5: STUDY BOARD AFFILIATION

The Master's programme falls under Study Board of Media Technology

§ 6: AFFILIATION TO CORPS OF EXTERNAL EXAMINERS

The Master's programme is associated with the external examiners corps on Nationwide engineering examiners/Electronics, IT and Energy (Electromagnetic direction)

§ 7: ADMISSION REQUIREMENTS

Applicants with a legal right of admission (retskrav)

None

Applicants without legal right of admission

- Bachelor of Science in Computer Science, Aalborg University
- Bachelor of Science in Electronic Engineering and IT, Aalborg University
- Bachelor of Science in Software, Aalborg University
- Bachelor of Science in Engineering Psychology, Aalborg University
- Bachelor of Science in Internet Technologies and Computer Engineering, Aalborg University
- Bachelor of Science in Electrical Engineering, Technical University of Denmark
- Bachelor of Science in Network Technology and IT, Technical University of Denmark
- Bachelor of Science in Mathematics and Technology, Technical University of Denmark
- Bachelor of Science in Software Technology, Technical University of Denmark
- Bachelor of Science in Engineering (Mechatronics), University of Southern Denmark
- Bachelor of Engineering in Information Technology, Aahus University
- Bachelor of Engineering in Electronic Engineering, Aarhus University
- Bachelor of Science in Medialogy, Aalborg University

Students with another Bachelor's degree, upon application to the Board of Studies, will be admitted after a specific academic assessment, if the applicant is deemed to have comparable educational prerequisites. The University can stipulate requirements concerning conducting additional exams prior to the start of study.

§ 8: THE PROGRAMME TITLE IN DANISH AND ENGLISH

The Master's programme entitles the graduate to the Danish designation Civilingeniør, cand.polyt. i lyd- og musikteknologi. The English designation is: Master of Science (MSc) in Engineering (Sound and Music Computing).

§ 9: PROGRAMME SPECIFICATIONS IN ECTS CREDITS

The Master's programme is a two year, research-based, full-time study programme. The programme is set to 120 ECTS credits.

§ 10: RULES CONCERNING CREDIT TRANSFER (MERIT), INCLUDING THE POSSIBILITY FOR CHOICE OF MODULES THAT ARE PART OF ANOTHER PROGRAMME AT A UNIVERSITY IN DENMARK OR ABROAD

The Study Board can approve that passed programme elements from other educational programmes at the same level replaces programme elements within this programme (credit transfer).

Furthermore, the Study Board can, upon application, approve that parts of this programme is completed at another university or a further education institution in Denmark or abroad (pre-approval of credit transfer).

The Study Board's decisions regarding credit transfer are based on an academic assessment.

§ 11: EXEMPTIONS

The Study Board's possibilities to grant exemption, including exemption to further examination attempts and special examination conditions, are stated in the Examination Policies and Procedures published at this website: https://www.studieservice.aau.dk/regler-vejledninger

§ 12: RULES FOR EXAMINATIONS

The rules for examinations are stated in the Examination Policies and Procedures published at this website: https://www.studieservice.aau.dk/regler-vejledninger

§ 13: RULES CONCERNING WRITTEN WORK, INCLUDING THE MASTER'S THESIS

In the assessment of all written work, regardless of the language it is written in, weight is also given to the student's formulation and spelling ability, in addition to the academic content. Orthographic and grammatical correctness as well as stylistic proficiency are taken as a basis for the evaluation of language performance. Language performance must always be included as an independent dimension of the total evaluation. However, no examination can be assessed as 'Pass' on the basis of good language performance alone; similarly, an examination normally cannot be assessed as 'Fail' on the basis of poor language performance alone.

The Study Board can grant exemption from this in special cases (e.g., dyslexia or a native language other than Danish).

The Master's Thesis must include an English summary. If the project is written in English, the summary can be in Danish. The summary is included in the evaluation of the project as a whole.

§ 14: REQUIREMENTS REGARDING THE READING OF TEXTS IN A FOREIGN LANGUAGE

At programmes that are taught in Danish, it is assumed that the student can read academic texts in modern Danish, Norwegian, Swedish and English and use reference works, etc., in other European languages. At programmes taught in English, it is assumed that the student can read academic text and use reference works, etc., in English.

§ 15: COMPETENCE PROFILE ON THE DIPLOMA

The following competence profile will appear on the diploma:

A Candidatus graduate has the following competency profile:

A Candidatus graduate has competencies that have been acquired via a course of study that has taken place in a research environment.

A Candidatus graduate is qualified for employment on the labour market based on his or her academic discipline as well as for further research (PhD programmes). A Candidatus graduate has, compared to a Bachelor, developed his or her academic knowledge and independence so as to be able to apply scientific theory and method on an independent basis within both an academic and a professional context.

§ 16: COMPETENCE PROFILE OF THE PROGRAMME

The mission of the Master's Programme in Sound and Music Computing is to train the professionals that will push forward the sound and music technologies of the new information society. By combining practical and theoretical approaches in topics such as computational modeling, audio engineering, perception, cognition, and interactive systems, the programme gives the scientific and technological background needed to start a research or professional career. This programme trains the students on the technologies for the analysis, description, synthesis, transformation and production of sound and music, and on the technologies and processes that support sound and music creation.

The graduate of the Master's programme:

Knowledge

- has in-depth **knowledge** and understanding of issues within the areas of sound and music technology and design
- can **understand** and, on a scientific basis, reflect on the technical, organizational and market drivers in sound and music technology as well as the interplay between technology, market and user issues
- can **analyze** sound and music computing's knowledge, theory, methodologies and practice, and identify scientific issues

Skills

- ability to **synthesize** scientific methods, tools and general skills within the field of sound and music computing.
- ability to **evaluate** and select among relevant scientific theories, methods, tools and general skills and, on a scientific basis, advance new analyzes and solutions within the subject areas
- ability to **synthesize** research-based knowledge and discuss professional and scientific problems with both peers and non-specialists
- ability to **synthesize** knowledge in scientific writing: articles, reports, documentation, etc.
- ability to **analyze** and select among relevant theories, technologies and methods for development of sound and music technology solutions and services
- can **analyze** different technologies for optimal selection
- can **analyze** the research potential or the market, ethical and regulatory framework for application of the technologies

Competencies

- ability to **apply** acquired knowledge in research, innovation and entrepreneurship that can be used to explore and exploit the great potential of new media technologies with an engineering approach
- ability to **synthesize** acquired knowledge creatively and innovatively to identify and propose new opportunities and develop services/solutions, which can empower the users and assist them in solving their current and future tasks on a daily basis
- ability to **synthesize** project work and problem based learning in a global/multicultural environment
- ability to **apply** knowledge to independently initiate and implement discipline-specific and interdisciplinary cooperation and assume professional responsibility
- ability to **synthesize** knowledge and independently take responsibility for own professional development and specialization
- **apply** acquired knowledge in mediating collaborations and exchange between development- and business-related functions in organizations

§ 17: STRUCTURE AND CONTENTS OF THE PROGRAMME

The programme is structured in modules and organized as a problem-based study. A module is a programme element or a group of programme elements, which aims to give students a set of professional skills within a fixed time frame specified in ECTS credits, and concluding with one or more examinations within specific exam periods. Examinations are defined in the curriculum. Each semester has an overall theme, which is reflected in the scope of the (mandatory) course modules and semester projects.

The programme is based on a combination of academic, problem-oriented and interdisciplinary approaches and organized based on the following work and evaluation methods that combine skills and reflection:

- lectures
- classroom instruction
- project work
- workshops
- exercises (individually and in groups)
- teacher feedback
- reflection
- portfolio work

§ 18: OVERVIEW OF THE PROGRAMME

All modules are assessed through individual grading according to the 7-point scale or Pass/Fail. All modules are assessed by external examination (external grading) or internal examination (internal grading) or by assessment by the supervisor or course-responsible only.

An overview of the ECTS credit breakdown for the various semesters by modules is shown in the table form below.

In general, students may choose different options for the 1st, 2nd, 3rd and 4th semester. The thesis project must have a size of at least 30 ECTS, but it is possible to make larger thesis projects of 50 ECTS plus two 5 ECTS courses on the 3rd semester. The following options may be chosen:

Option 1:

- 3rd semester: 15 ECTS semester project, supplemented by courses
- 4th semester: 30 ECTS thesis project

Option 2:

- 3rd semester: Project-oriented work in a company in Denmark or abroad, or exchange in Denmark or abroad (in this case the mandatory courses on the 3rd semester may be waived)
- 4th semester: 30 ECTS thesis project

Option 3 (long thesis project):

- A thesis project of 50 ECTS and two courses from the third semester.

Offered as: 1-professional Study programme: MSc. in Sound and Music Computing, 2017, Copenhagen						
Module name	Course type	ECTS	Applied grading scale	Evaluation method	Assessment method	Language
1 SEMESTER						
Foundations of SMC (MSNSMCM1171)	Project	15	7-point grading scale	Internal examination	Oral exam based on a project	English
Sound Processing (MSNSMCM1172)	Course	5	7-point grading scale	Internal examination	Oral exam	English
Machine Learning for Media Technology (MSNMEDM1175)	Course	5	7-point grading scale	Internal examination	Written or oral exam	English

Music Perception and Cognition (MSNSMCM1173)	Course	5	7-point grading scale	Internal examination	Written or oral exam	English
2 SEMESTER Option A						
Sound and Music Information Research (MSNSMCM2173)	Project	15	7-point grading scale	External examination	Oral exam based on a project	English
Realtime Interaction and Performance (MSNSMCM2171)	Course	5	7-point grading scale	Internal examination	Oral exam	English
Sound and Music Signal Analysis (MSNSMCM2172)	Course	5	7-point grading scale	Internal examination	Written or oral exam	English
2nd semester elective courses package Choose 1 course (5 ECTS)	Course	5				
2 SEMESTER Option B						
Sonic Interaction Research (MSNSMCM2174)	Project	15	7-point grading scale	External examination	Oral exam based on a project	English
Realtime Interaction and Performance (MSNSMCM2171)	Course	5	7-point grading scale	Internal examination	Oral exam	English
Sound and Music Signal Analysis (MSNSMCM2172)	Course	5	7-point grading scale	Internal examination	Written or oral exam	English
2nd semester elective courses package Choose 1 course (5 ECTS)	Course	5				
3 SEMESTER Option A						
Sound and Music Innovation (MSNSMCM3171)	Project	15	7-point grading scale	Internal examination	Oral exam based on a project	English
Research in Sound and Music Computing (MSNSMCM3172)	Course	5	7-point grading scale	Internal examination	Written or oral exam	English
3rd semester elective courses package Choose 1 or 2 courses (5/10 ECTS)	Course	10				
3 SEMESTER Option B						
Project-Oriented Work in a Company (MSNSMCM3174)	Project	20	Passed/Not Passed	Internal examination	Oral exam based on a project	English
Research in Sound and Music Computing (MSNSMCM3172)	Course	5	7-point grading scale	Internal examination	Written or oral exam	English
3rd semester elective courses package	Course	5				

Choose 1 or 2 courses (5/10 ECTS)						
3 SEMESTER Option C						
Project-Oriented Work in a Company (MSNSMCM3175)	Project	25	Passed/Not Passed	Internal examination	Oral exam based on a project	English
Research in Sound and Music Computing (MSNSMCM3172)	Course	5	7-point grading scale	Internal examination	Written or oral exam	English
3 SEMESTER Option D						
Project-Oriented Work in a Company (MSNSMCM3173)	Project	30	Passed/Not Passed	Internal examination	Oral exam based on a project	English
4 SEMESTER Master´s Thesis						
Master's Thesis (MSNSMCM4171)	Project	30	7-point grading scale	External examination	Oral exam based on a project	English
3-4 SEMESTER Long Master´s Thesis						
Master's Thesis (MSNSMCM4172)	Project	50	7-point grading scale	External examination	Oral exam based on a project	English
Research in Sound and Music Computing (MSNSMCM3172)	Course	5	7-point grading scale	Internal examination	Written or oral exam	English
3rd semester elective courses package Choose 1 or 2 courses (5/10 ECTS)	Course	5				

2nd semester elective courses package
Choose 1 course (5 ECTS)

Module name	Course type	ECTS	Applied grading scale	Evaluation Method	Assessment method	Language
Algorithms, Data Structures and Software Engineering for Media Technology (MSNMEDM2172)	Course	5	7-point grading scale	Internal examination	Written or oral exam	English
Embodied Interaction (MSNMEDM2174)	Course	5	7-point grading scale	Internal examination	Written or oral exam	English
Human Sound Perception and Audio Engineering (ESNSPAK2K2)	Course	5	Passed/Not Passed	Internal examination	Written or oral exam	English
Physical Models for Sound Synthesis (MSNSMCM2175)	Course	5	7-point grading scale	Internal examination	Written or oral exam	English

3rd semester elective courses package
Choose 1 or 2 courses (5/10 ECTS)

Module name	Course type	ECTS	Applied grading scale	Evaluation Method	Assessment method	Language
Mobile and Wearable Computing (MSNMEDM1224)	Course	5	7-point grading scale	Internal examination	Oral exam based on a project	English
Narratives in Interactive Systems (MSNMEDM1225)	Course	5	7-point grading scale	Internal examination	Oral exam based on a project	English
Machine Learning for Media Experiences (MSNMEDM1222)	Course	5	7-point grading scale	Internal examination	Oral exam based on a project	English

§ 19: ADDITIONAL INFORMATION

The current version of the curriculum is published on the Board of Studies' website, including more detailed information about the programme, including exams

All students who have not participated in Aalborg University's PBL introductory course during their Bachelor's degree must attend the introductory course "Problem-based Learning and Project Management". The introductory course must be approved before the student can participate in the project exam. For further information, please see the Schools website.

§ 20: COMMENCEMENT AND TRANSITIONAL RULES

The curriculum is approved by the Dean of the Techbical Faculty of IT and Design and enters into force as of September 2017.

Students who wish to complete their studies under the previous curriculum from 2014 must conclude their education by the summer examination period 2018 at the latest, since examinations under the previous curriculum are not offered after this time.

§ 21: AMENDMENTS TO THE CURRICULUM AND REGULATIONS

Minor editorial changes have been made during the digitalization.

On 7 June, 2022 the Pro-Dean of Education has approved that the 3 elective courses *"Multimodal Perception and Cognition", "Prototyping and Fabrication Techniques"* and *"Applied Experimental Psychology and Psycho-physics"* on the 3rd Semester are replaced by the 3 elective courses *"Mobile and Wearable Computing", "Narratives in Interactive Systems"* and *"Machine Learning for Media Experiences"* as of Autumn 2022.