

Double Degree Study Program „Mechatronics“

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Abstract

The double degree study program realized in the joint cooperation between Technical University of Liberec and HS Zittau/Goerlitz allow improving the student's English language level and reaching the new level of education with lot of practices and experiences.

Keywords: double degree, master study program, mechatronic.

1 Preface

The study program “Mechatronics” is based on joint cooperation of Technical University of Liberec (TU Liberec), Faculty of Mechatronics, Informatics and Interdisciplinary Studies (Faculty FM) and HS Zittau/Görlitz, Faculty Electrical Engineering and Computer Science (Faculty F-EI). These are the Partner Universities. Applicants for this study program were matriculated at HS Zittau/Görlitz or TU Liberec. The university, where a student got his first Matriculation, is called “Home University”. The respectively other Partner University is called “Host University”. During his stay at the Host University, the student is registered at the “Host University” and matriculated at the “Home University”.

The main objective of this joint study program “Mechatronics” is to connect the great diversity of mechatronics expertise at the TU Liberec and HS Zittau/Görlitz to a common higher education platform in the European Region Nisa according the Bologna Declaration. European (namely TU Liberec and HS Zittau/Görlitz) students with bachelor's degree will in the framework of master study “Mechatronics” have the possibility to study mechatronics science. They will be fully integrated into research projects and cooperation with the regional industry at both higher education institutions. Students will take part in design and development of new engineering products and processes by integration of electronic and electrical engineering, computer technology and control engineering.

Another objective is to give the students cross-disciplinary extension from the laboratories and computer environment to industrial and research projects and gaining international experience, acquiring the English language and picking up a new culture lifestyle along with their qualification of course.

2 Study structure

2.1 Master course structure and modules

The Figure1 determines the pattern of the semesters for the master study in Mechatronics.

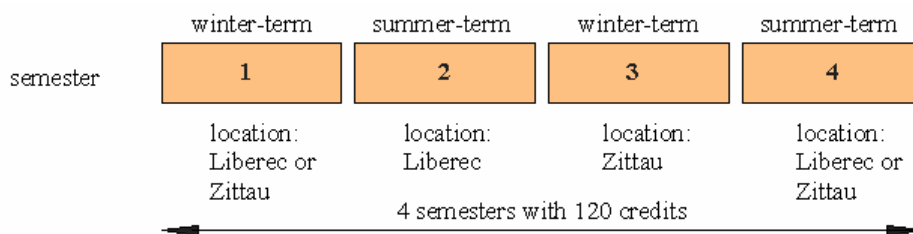


Figure 1: Pattern of the semesters for the Master in Mechatronics.

The first semester is a preparatory one and is valued at minimum of 30 ECTS. The bachelor's degrees are valued with 180 ECTS credits at TU Liberec, and with 210 ECTS at HS Zittau. Results of credits from HS Zittau are recognized as the preparatory first semester and students with such one can enter direct the second semester of master study in Mechatronics. The modules in Liberec are Applied Mathematics, Probability and Statistics, Continuum Mechanics and Thermodynamics, Electromagnetic Field and Optics, Electric Drives and Laboratory I.

The second semester is realized in Liberec and includes 5 compulsory objects and one elective (Minimum number of students in an obligatory elective subject has to be 6). The compulsory modules are focused into robotics and control, semester project represents self-made work on selected topic.

The third semester is realized in Zittau and includes 5 compulsory objects together with Wind and Water Power or Mechatronical Project as elective one. The compulsory objects are focused into some specific area of process control and into digital image and signal processing and digital communication.

The fourth semester has specific content depending on the student's choice. The students will do their Master's Thesis work at their chosen higher education institution, which is either TU Liberec or HS Zittau/Goerlitz. Students registered at HS Zittau/Goerlitz do their Master's Thesis work valued at 30 ECTS during the fourth semester. They are working on their Master's Thesis in the Industry without any subjects. Students registered in the fourth semester at TU Liberec write their Diploma Thesis valued at 12 ECTS and Diploma Colloquium at 3 ECTS. Further they have to take 3 compulsory elective subjects valued altogether at 15 ECTS.

2.2 Master's/Diploma Thesis, State Final Exam

Students have to choose one of the Home Universities, where they will do their Diploma Thesis/Master's Thesis at the beginning of the third semester (end of October). Start of working on the Diploma Thesis at TU Liberec begins within the third semester and the Master's Thesis at HS Zittau/Görlitz in the fourth semester.

1. The candidate is to be granted admission to the final module after he/she completed all course-related modules.
2. The subjects of the final module examination are the following two examination performances at HS Zittau/Goerlitz:
 - i. Master's Thesis and
 - ii. Defense of the Master's thesisand/or three examination performances at TU Liberec:
 - i. Master's Thesis,
 - ii. Defense of the Master's thesis and
 - iii. State Rigorous Examination.

Students who defended their Master's Thesis at HS Zittau/Görlitz will be given only brief information about his/her Master's Thesis and that the Master's Thesis was recognized (points i. and ii. at the TU Liberec are skipped).

3. The defense of the Master's thesis takes place as an oral examination performance, within the context of an oral examination interview. As a rule, the oral examination in the form of the defense of the Master's Thesis takes place in the language of the Master's Thesis.
4. The State Rigorous Examination continues after passed defense of the Thesis. Students are examined on four thematic domains:
 - General electrical engineering, electric drives, servomechanism
 - Measurement, electronic and PLC systems
 - Control systems in mechatronics
 - Applied computer sciences, Image processing and computer vision.

The language of the exam is English.

3 Policy and Legal Procedures

3.1 Common boards

1. The Faculty of Mechatronics, Informatics and Interdisciplinary Studies of TU Liberec and the Faculty Electrical Engineering and Computer Science of HS Zittau/Görlitz created common "Board - Master of Mechatronics" in Liberec, January 28. 2008. This board authorizes organization structure and administration rules of the study program "Master in Mechatronics" at both faculties.
2. "Board Master in Mechatronics" is governed by deans of both faculties: Faculty of Mechatronics, Informatics and Interdisciplinary Studies and the Faculty Electrical Engineering and Computer Science and includes two members of each faculty that are appointed by Vice rector of study at HS Zittau/Görlitz and at TU Liberec by the dean of Faculty of Mechatronics, Informatics and Interdisciplinary Studies.

3. The both dean of Home Universities will create the “State Final Examination Boards of Mechatronics” and “Admission Board of Mechatronics” and they have the right to appoint the members of both boards from both faculties.

3.2 Students

1. The study program master in “Mechatronics” is determined for students TU Liberec and HS Zittau/Görlitz, European and Third-country students.
2. The number of students is supposed to be about 25 Master’s students (10 TU Liberec, 10 HS Zittau/Görlitz and 5 European).
3. Possibly there will be an increase in the amount of European and Third-country students.

3.3 Diploma

1. Students who complete this program successfully will receive Certificate of successful completion from the Home University
 - TU Liberec see attachment 1
 - University Zittau/Görlitz see attachment 2
2. The Home University awards the Double Degrees with Diploma Supplements.
 - Diploma degree “Master of Engineering” from the consecutive two-level study program “Master in Mechatronics” at the HS Zittau/Görlitz attachment 3 and
 - Diploma degree “Inženýr”, (Master of Engineering) briefly “Ing.” from the consecutive master study program Electrical Engineering and Informatics in the academic discipline/field “Mechatronics” at the TU Liberec attachment 4.
3. The universities TU Liberec and HS Zittau/Görlitz make out the Diploma-Supplement attachment 5.

3.4 Fees, Funding

1. The universities TU Liberec and HS Zittau/Görlitz will charge tuition fees according to their national legislation. In this time there are any.
2. A student has to pay the administrative fees as required by local law at the Hosting University (81.10 €/semester at HS Zittau/Görlitz, for the first semester at HS Zittau/Görlitz additionally 10.00 € for student-ID,therefor 91.10 € in summary).
3. All fees will be collected and owned by the Hosting University and managed according the local rules and regulations. It is the student’s responsibility to inform themselves about that rules.
4. The EU-students will be supported by Erasmus+- Program according its structure and rules. Support is always provided from Home University.
5. The both Partner University will endeavor the finding the financial funding.

3.5 Execution of the study programs

1. The students, registered in this study program at the Hosting University, have the same rights and duties as the other matriculated university students in other programs.
2. All students of the Partner University have to inform themselves about the regulations and obey the rules and regulations of the Hosting University.
3. The State Final Examination Board of Master in Mechatronics, matriculation department and other institutions of the Hosting University are responsible for the execution of the jointly developed regulations for this study program.
4. It is the responsibility of the Hosting University that the modules are provided by sufficiently qualified persons in accordance with the local laws and regulations.
5. The Hosting University is responsible for ensuring local laws about safety rooms, laboratory equipment etc.

4 Conclusion

Study master in “Mechatronics” will bring benefits to European Region Nisa and European industry because of the graduates will be familiar with the specific features of region and host countries.