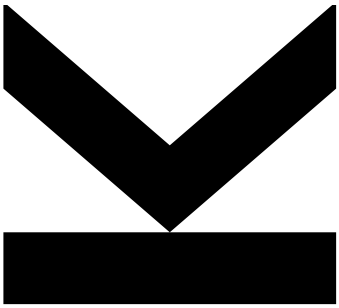
UK 066/479

CURRICULUM FOR THE MASTER'S PROGRAM IN **POLYMER TECHNOLOGIES AND SCIENCE (PTS).**



(in English)

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Contents

§ 1 Qualification Profile

(1) The Master's degree program "Polymer Technologies and Science (PTS)" at the Faculty of Engineering and Natural Sciences (TNF) of the Johannes Kepler University Linz (JKU) is based on the Bachelor's degree program „Kunststofftechnik (Polymer Engineering and Technologies)“ at the JKU and taught in English.

The Master's degree program "Polymer Technologies and Science (PTS)" is supposed to convey knowledge and skills as follows:

- Substantial basic knowledge in the areas of ”polymer materials and testing“, ”polymer processing“, ”polymer product engineering“, ”polymer chemistry and chemical engineering“, and ”lightweight design/construction“.
- Special expertise in accordance with current science and technology by appropriate selection of elective subjects and the active participation in research projects in the context of the Master's thesis.
- Comprehensive expertise in experimental, empirical, and computational methods in all aspects of polymer technologies and science.
- Superior competence in providing solutions for polymer technologies and science assignments, as well as expertise in interdisciplinary approaches within an international industrial and scientific environment.

(2) Successful completion of the Master's degree program provides a wide basis in science and technology to perform demanding professional activities in polymer producing companies, manufacturing companies, research and development, or management positions. The programme opens up excellent career opportunities in enterprises of different size with following orientations:

- the plastics industry as a whole (plastics manufacturers and processors, suppliers of plastics machinery);
- the entire spectrum of industry using plastics, in particular packaging, automotive, aeronautical, electrical, and medical engineering, building, infrastructure, and energy technologies, sports- and leisure,
- plastic engineering & technical services like engineers' offices or technology transfer centres,
- private and public research institutions,
- regional, national and international supervisory authorities and agencies.

(3) Graduates of the Master's degree program are expected to provide significant contributions to the development and application of polymer technologies both in industry and research. The program's versatility creates ideal preconditions to qualify graduates for flexible adaptation to changing market requirements and new scientific and technological developments in the fields of polymer technologies and science. Students receive differentiated education offering numerous possibilities for elective studies along with mandatory subjects. Due to a combination of highly complementary technical and scientific courses, graduates are supposed to be prepared to expedite new accesses and novel approaches to industrial, economic and research challenges. The multidisciplinary program and courses taught in English help students to develop competences for cooperation across the disciplines and for international communication in all aspects of polymer technologies and science.

§ 2 Admissions

(1) In accordance with § 54 (1) UG the Master's program "Polymer Technologies and Science" belongs to the category of engineering degrees and is taught in English.

(2) The Master's program "Polymer Technologies and Science" is based on the Bachelor's program "Polymer Engineering and Technologies" (UK033/220) at JKU. Graduates of this Bachelor's program are admitted to the Master's program without any restrictions.

(3) Graduates of related programs at Universities, and other national or international post-secondary educational institutions can be admitted to the Master's program if their degree programs are equivalent to the Bachelor's program "Polymer Engineering and Technologies" at JKU.

(4) If the applicants first degree basically fulfils the requirements, except for a few specific individual courses, the Rector's office can allow applicants to pass these specific courses while already following the Master's program, however only to the maximum extent of 40 ECTS.

(5) Graduates of a Diploma program with a longer duration than a Bachelor's program can obtain recognition for examinations of the Master's program (see § 78 UG) to the extent by which the Diploma program (excluding the diploma thesis) exceeds the Bachelor's program.

(6) Graduates of a Bachelor's program of more than 6 semesters (>180 ECTS) can obtain recognition for courses of the Master's program (see § 78 UG) to the extent by which the Bachelor's program exceeds the Bachelor's program "Polymer Engineering and Technologies" at JKU.

§ 3 Structure and Outline

(1) The Master's program "Polymer Technologies and Science" covers 4 semesters and consists of 120 ECTS points, which are distributed among the following subjects:

Subjects	**ECTS**
Mandatory Subjects	51
Elective Subjects	30
Master's Thesis (incl. Master's Thesis Seminar)	25
Master's Examination	2
Free Electives	12
Total	120

(2) For Free Electives, students have to pass examinations corresponding to 12 ECTS points, which can be chosen from any recognized national or international post-secondary educational institution. The Free Electives shall provide additional skills beyond "Polymer Technologies and Science" and can be taken anytime during the Master's study.

(3) The recommended course of study is shown in annex 1. This recommendation is based on the requirements of a full-time degree program. However, taking program restrictions into account, the program can also be completed by those who have a flexible work schedule or family care responsibilities: Some courses are also offered remotely and although attendance is usually not mandatory, attendance is recommended. In other courses, attendance is usually mandatory; however, attempts are made to offer multiple courses at alternative times and/or remotely. In regard to exams, there is no guarantee that they can be held remotely or during off-peek hours. Depending on the extent of work flexibility and/or family care responsibilities, a longer period of studies is to be expected.

§ 4 Mandatory Subjects/Modules

The following Mandatory Subjects have to be completed successfully:

Code	Name	ECTS
479POMT19	Polymeric Materials and Testing	17
479POPE14	Polymer Product Engineering	16.5
479POPR14	Polymer Processing	17.5

§ 5 Elective Subjects/Modules

(1) The subject "Elective Track" (Subject Code: 479ELTR19) with total 30 ECTS points divided into the listed subjects, has to be successfully completed according to the following rules:

Code	Name	ECTS
479CACT12	Chemistry and Chemical Technology	8
479PMMS12	Physics of Materials and Materials Science	8
479PTAM12	Process Technologies and Modelling	8
479COES12	Computational Engineering Sciences	8
479AMME12	Applied Mechanics and Mechanical Engineering	8
479MABA12	Management and Business Administration	8
479PISD12	Polymer Industry and Sustainable Development	8
479SOSK15	Soft Skills	0-3

(2) At least two Elective Subjects listed in § 5 (1) of at least 8 ECTS must be completed with the exception of the subject "Soft Skills". For any additionally required ECTS courses can be selected from all the Elective Subjects.

(3) In the subject "Elective Track", students can choose courses which they did not already complete as part of the Bachelor's program which qualified them for this post-graduate program.

(4) "Seminars in Polymer Technologies" of at least 3 to max. 7.5 ECTS must be completed in the subject "Elective Track".

(5) It is expected that in the subject "Soft Skills" courses in the amount of 3 ECTS are selected.

§ 6 Courses

(1) The names and the types of all courses of the Mandatory Subjects and Elective Subjects, as well as their ECTS points, their duration in hours per week, their codes, their registration requirements, and their admission procedures (in case of limited availability of places) are described in the study handbook of JKU (studienhandbuch.jku.at).

(2) The possible types of courses as well as the examination regulations are described in §§ 13 and 14 of the JKU statute (Section "Studienrecht").

§ 7 Replacement of Subjects and Courses

Mandatory Subjects and Elective Subjects according to §§ 4 and 5 as well as Courses according to § 6 (1) may be replaced to a total extent of 18 ECTS points by other study specific subjects and courses upon student's request, provided that the purpose of academic professional preparatory training is not affected and the choice of the proposed subjects and courses seems reasonable with regard to the defined aims in the qualification profile, the academic context as well as to the addition to the professional preparatory training. The application of replacing subjects and courses has to be filed by the Vice Rector of Academic Affairs.

§ 8 Master's Thesis

(1) Students of the Master's program "Polymer Technologies and Science" must complete a Master's Thesis according to § 81 UG and § 36 of the JKU statute (Section "Studienrecht").

(2) The Master's Thesis is a written paper corresponding to an effort of 24 ECTS points.

(3) The Master's Thesis serves as a proof that graduates are able to perform scientific work autonomously and systematically. The topic of the thesis must be taken from the Mandatory Subject with the exception of the subject Soft Skills and must permit completion within a period of 6 months.

(4) The Curricular Committee may specify guidelines for the formal structure of a Master's Thesis.

(5) Subject to agreement with the tutor (Academic Advisor), the Master's Thesis can be submitted in English or German.

(6) In addition to the Master's Thesis, students must pass the Master's Thesis Seminar with 1 ECTS points.

§ 9 Examination Regulations

(1) The regulations for subject examinations and course examinations are described in the study handbook of JKU.

(2) The Master's program "Polymer Technologies and Science" is concluded by a Master's examination.

(3) The Master's examination consists of two parts: The first part is the successful completion of the Mandatory Subjects and Elective Subjects according to §§ 4 and 5.

(4) The second part of the Master's examination is a comprehensive oral exam (2 ECTS points) conducted by an examination committee. Prior to being admitted to the Master's examination, students must complete the first part of the Master's examination, the Master's Thesis, the Master's Thesis Seminar and the Free Electives.

(5) The second part of the Master's examination starts with a presentation and a defence of the Master's Thesis, followed by two oral exams. One of the exams concerns the subject defined by the advisor of the Master's Thesis, the second exam must be chosen by the candidate out of the Mandatory Subjects listed in § 4.

(6) The examination committee consists of three members and is formed by the Vice Rector of Academic Affairs. The candidate may submit a proposal for the committee members. In general, the Academic Advisor of the Master's Thesis is a member of the examination committee. The head of the committee suggests the assessment of the presentation and the defence of the thesis. The other two examiners suggest the assessment of the examinations in their subjects, respectively.

§ 10 Academic Degree

(1) Graduates of the Master's program "Polymer Technologies and Science" are awarded the academic degree „Diplom-Ingenieurin/Diplom-Ingenieur“, abbreviated „Dipl.-Ing.“ or „Dipl.-Ing. (JKU)“ or „DI" or „DI (JKU)“.

(2) The certificate about the academic degree is issued in German and in English translation.

§ 11 Legal Validity

(1) This Curriculum comes into effect on October 1, 2013.

(2) The amendments in § 3 sec. 1, § 4, § 5 sec. 4, § 8 sec. 2, 3, 6, § 9 sec. 5, § 12 and annex 1 will come into effect on October 1, 2014.

(3) The amendments in § 3 sec. 1, § 4, § 5 and annex 1 will come into effect on October 1, 2015.

(4) § 6 para. 1 and § 9 para. 5 as published in the official newsletter of the Johannes Kepler University Linz on June 22, 2018, 26. piece, item 276 will take effect on October 1, 2018.

(5) § 2 para. 1, § 3 para. 1, § 4, § 5 para. 1, § 12 para. 3 and annex 1 as published in the official newsletter of the Johannes Kepler University Linz on June 24, 2019, 33. piece, item 453 will take effect on October 1, 2019.

(6) § 2 para. 2, § 5 para. 1 and § 12 para. 4 as published in the official newsletter of the Johannes Kepler University Linz on May 19, 2020, 23. piece, item 250 will take effect on October 1, 2020.

(7) § 3 para. 3 as published in the official newsletter of the Johannes Kepler University Linz on May 18th, 2021, 23rd piece, item 288 will take effect on October 1st, 2021.

§ 12 Transitional Provisions

(1) The equivalences given in the study handbook of JKU are effective for students who did examinations within the Master's Program.

(2) In addition to the equivalences given in the study handbook of JKU, following equivalences are effective:

Table A: Equivalence of course packages

Package of courses in the Master Polymer Technologies and Science version of 2013	equivalent package of courses in the Master Polymer Technologies and Science version of 2014
479MAARMTSS12: SE Master's Thesis Seminar PTS (3 ECTS) 479POPRTPPS12: SE Technologies of Polymer Processing (2 ECTS) 479POPRPOPP12: PR Polymer Processing (2 ECTS)	479MAARMTSS14: SE Master's Thesis Seminar PTS (1 ECTS) 479POPREC1U14: UE Polymer Extrusion and Compounding 1: Process Technologies (1.5 ECTS) 479POPREC2U14: UE Polymer Extrusion and Compounding 2: Modelling Screw Extrusion (1.5 ECTS) 479POPESDCU14: UE Structural Durability Calculations (1.5 ECTS) 479POPRPOPP14: PR Polymer Processing (2.5 ECTS)

Table B: Equivalence of courses - Master's Program version of 2013

Courses in the Master Polymer Technologies and Science version of 2013	equivalent courses in the Master Polymer Technologies and Science version of 2014
479POPRTPPS12: SE Technologies of Polymer Processing (2 ECTS)	479POPESDCU14: UE Structural Durability Calculations (1.5 ECTS)
479PTAMABPK12: KV Applied Building Physics for Polymer Products (3 ECTS)	*lecture in the elective subject "Process Technologies and Modelling" (3 ECTS) or lecture in the elective subject "Polymer Industry and Sustainable Development" (3 ECTS)*
479PTAMSTPK12: KV Selected Topics in Polymer Processing (3 ECTS)	*lecture in the elective subject "Process Technologies and Modelling" (3 ECTS)*

(3) For students who have passed examinations within the curriculum of the Master's Program version of 2018 in addition to the equivalences given in the study handbook of JKU the following equivalences are effective:

Table C: Equivalence of subjects - Master's Program version of 2018

Subjects in the Master Polymer Technologies and Science version of 2018	equivalent subjects in the Master Polymer Technologies and Science version of 2019
479POMT12: Polymeric Materials and Testing (16,8 ECTS)	479POMT19: Polymeric Materials and Testing (17 ECTS)
479ELTR15: Elective Track (30,2 ECTS)	479ELTR19: Elective Track (30 ECTS)

(4) For students who have passed examinations within the curriculum of the Master's Program version of 2019 in addition to the equivalences given in the study handbook of JKU the following equivalences are effective:

Table D: Equivalence of subjects - Master's Program version of 2019

Subject in the Master Polymer Technologies and Science version of 2019	equivalent subject in the Master Polymer Technologies and Science version of 2020
479PACO12: Process Automation and Control (8 ECTS)	*lectures in another elective subject (8 ECTS)*

Global map of study subjects - Master's Program "Polymer Technologies and Science" (2019)

1st Semester (WS)		2nd Semester (SS)		3rd Semester (WS)		4th Semester (SS)	
Subject/Course	**ECTS**	**Subject/Course**	**ECTS**	**Subject/Course**	**ECTS**	**Subject/Course**	**ECTS**
Polymeric Materials and Testing VL Structure Development in Polymeric Materials VL Industrial Chemistry for Plastic Engineering	4,5	**Polymeric Materials and Testing** VL Physical Chemistry of Surfaces and Interfaces VL Chemical Interactions in Polymers VL Polymeric Materials 3: Polymer Mechanics and Fracture Mechanics VL+SE Polymeric Materials 4: Functional Polymeric Materials	8,5	**Polymeric Materials and Testing** PR Characterization and Testing of Polymeric Materials 2	4		
Polymer Product Engineering KV Mechanical Material Models for Polymers KV Design of Lightweight Structures	6			**Polymer Product Engineering** UE Polymer Product Design and Engineering 4: Integrated Injection Moulding, Micromechanics and Structure Simulation	1,5		
Polymer Processing VL Polymer Injection Moulding 1: Machine Engineering VL+UE Polymer Extrusion and Compounding 1: Process Technologies	7,5	**Polymer Product Engineering** VL Polymer Product Design and Engineering 4: Integrated Injection Moulding, Micromechanics and Structure Simulation VL+UE Lightweight Design with Composite Materials UE Structural Durability Calculations	9			**Master's Thesis**	24
Elective Track	9,5	**Polymer Processing** KV Polymer Injection Moulding 2: Process Technologies VL+UE Polymer Extrusion and Compounding 2: Modelling Screw Extrusion PR Polymer Processing	10	**Elective Track**	17,5		
						Master's Thesis Seminar/ Master's Examination	3
Free Electives	2,5	**Elective Track**	3	Free Electives	6,5	Free Electives	3
	30		**30,5**		**29,5**		**30**

Total: 120