

**K 066/480**

CURRICULUM FOR THE  
MASTER'S PROGRAM IN  
**MANAGEMENT IN  
POLYMER TECHNOLOGIES  
(MPT).**



(in English)



**JOHANNES KEPLER  
UNIVERSITY LINZ**

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## § 1 Qualification Profile

(1) The Master's degree program in "Management in Polymer Technologies (MPT)" at the Faculty of Engineering and natural Sciences (TNF) of the Johannes Kepler University (JKU) Linz is based on the Bachelor's degree program "Kunststofftechnik (Polymer Engineering and Technologies)" at the JKU and taught in English. Although the Bachelor's program in "Polymer Engineering and Technologies" is the primary reference program, a Bachelor's program in "Technical Chemistry", "Technical Physics", "Mechatronics", "Information Electronics", "Technical Mathematics", "Chemistry", "Bio-Chemistry" or in equivalent programs is also acceptable.

The Master's degree program "Management in Polymer Technologies (MPT)" 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 polymer technologies and management topics by appropriate selection of elective subjects and the active participation in research projects in the context of the Master's thesis.
- Substantial expertise in the field of business administration including such topics as management, strategy development and implementation, marketing, financing, accounting and taxation.
- Superior competence in providing solutions for polymer technologies and management assignments, as well as expertise in interdisciplinary approaches within an international industrial environment.
- A profound understanding of parameters related to enhanced market deployment of polymers in various fields of application, while also recognising and assessing the subsequent impact of these developments on society and the environment.
- Development of individual knowledge and skills in the field of technology management with a special focus on polymer technologies.

(2) Successful completion of the Master's degree program provides a broad range of competencies in polymer technologies as well as in related management and business administration subjects 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,
- plastics engineering service and consulting 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 management and economy related research. The program's versatility creates ideal preconditions to qualify graduates for flexible adaptation to changing market requirements and new technological developments. Students receive differentiated education offering numerous possibilities for elective studies along with subjects. Due to a combination of highly complementary technical and management courses, graduates are supposed to be prepared to expedite new accesses and novel approaches to

industrial and economic 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 management.

Through specializing in selected areas of business administration and economy, graduates will be qualified to work in a management capacity in the plastics industry.

## § 2 Admissions

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

(2) The Master's program in "Management in Polymer Technologies" is based on the Bachelor's program in "Polymer Engineering and Technologies" ("Kunststofftechnik") (K033/220) at JKU.

(3) Graduates of this Bachelor's program as well as graduates of the Bachelor's programs in Technical Chemistry (K033/290), Technical Physics (K033/261), Mechatronics (K033/281) and Biological Chemistry (K033/663) at JKU are admitted to the Master's program without any restrictions.

(4) 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 in "Polymer Engineering and Technologies" at JKU. Therefore, upon admission, it is necessary to establish whether the entry qualification is equivalent to the Bachelor's degree in "Polymer Engineering and Technologies" (Section 2) or to those degrees listed in Section 3 above.

(5) If the applicant's first degree basically are equivalent to those listed in the admission requirements above but a few specific individual courses are lacking in order to fully correspond, then the Rector's office can allow applicants to complete these courses while already following the Master's program, however only to the maximum extent of 40 ECTS.

(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 in "Management in Polymer Technologies" covers 4 semesters and consists of 120 ECTS points, which are distributed among the following subjects:

Subjects	ECTS
Subjects	81
Master's Thesis (incl. Master's Thesis Seminar)	25
Master's Examination	2
Free Electives	12
<b>Total</b>	<b>120</b>

(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 "Management in Polymer Technologies" and can be taken anytime during the Master's study.

(3) The two recommended courses of study are shown in the annex.

## § 4 Subjects

(1) The following subjects have to be completed successfully:

Code	Name	ECTS
480BIPT15	Basics in Polymer Technologies (Bridge Subject)	0/19
480MABA10	Management Basics	12
480MAAD10	Management Advanced	15
480ADPT10	Advanced Polymer Technologies	25
480AMPT15	Advanced Electives in Management and Polymer Technologies	29/10

(2) The program includes either a Bridge subject "Basics in Polymer Technologies" or a different amount of ECTS points within the subject "Advanced Electives in Management and Polymer Technologies". If admission to the Master's program has been based on a Bachelor's degree program in "Polymer Engineering and Technologies" (according to § 2 (2)), then the subject "Advanced Electives in Management and Polymer Technologies" with an amount of 29 ECTS points is required. Alternately, if admission to the program had been based on another Bachelor's degree program, according to § 2 (3), then it is necessary to take the Bridge subject "Basics in Polymer Technologies" and the subject "Advanced Electives in Management and Polymer Technologies" with an amount of 10 ECTS points is required.

(3) In the subject "Advanced Electives in Management and Polymer Technologies", 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 "Advanced Electives in Management and Polymer Technologies". It is expected that "Soft Skills" courses in the subject "Advanced Electives in Management and Polymer Technologies" in the amount of 3 ECTS are selected.

(5) The subject "Advanced Electives in Management and Polymer Technologies" provides the following subjects for the Master's Examination with the subject "Polymer Technology and Science":

Code	Name
480MPPC14	Subject for the Master's Examination: Polymer Chemistry
480MPPM14	Subject for the Master's Examination: Polymeric Materials and Testing
480MPPP14	Subject for the Master's Examination: Polymer Processing
480MPPE14	Subject for the Master's Examination: Polymer Product Engineering & Design

(6) The subject "Advanced Electives in Management and Polymer Technologies" provides the following subjects for the Master's Examination with the subject "Business Administration":

Code	Name
480MPMM14	Subject for the Master's Examination: Management & Marketing
480MPFA14	Subject for the Master's Examination: Finance & Accounting

## § 5 Courses

(1) The names and the types of all courses of the 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 (<http://www.jku.at/studienhandbuch>).

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

## § 6 Replacement of Subjects and Courses

Subjects according to § 4 as well as Courses according to § 5 (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.

## § 7 Master's Thesis

(1) Students of the Master's program "Management in Polymer Technologies" 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 must focus on an aspect of "Polymer Technology" or "Management in Polymer Technology" and must be compatible with the list of "Subject for the Master's Examination". It must permit completion within a period of 6 months.

(4) The Curricular Committee for "Management in Polymer Technologies (MPT)" 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.

## **§ 8 Examination Regulations**

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

(2) The Master's program "Management in Polymer Technologies" 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 Subjects according to § 4.

(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 covers the contents of the subject, which the subject of the Master's Thesis is taken from. The subject of the second exam must be chosen by the candidate out of the subjects for the Master's Examination listed in § 4 taking section 6 and 7 (see below) into account.

(6) If the first exam covers the contents of a subject for the Master's Examination listed in § 4 within the subject "Business Administration", the subject of the second exam has to be chosen from a subject for the Master's Examination listed in § 4 within the subject "Polymer Technology and Science".

(7) If the first exam covers the contents of a subject for the Master's Examination listed in § 4 within the subject "Polymer Technology and Science", the subject of the second exam can be chosen from any other subject for the Master's Examination listed in § 4.

(8) 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.

## **§ 9 Academic Degree**

(1) Graduates of the Master's program "Management in Polymer Technologies" 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.

## § 10 Legal Validity

(1) This Curriculum comes into effect on October 1, 2014.

(2) The curriculum of the Master's program in "Management in Polymer Technologies" in the version published in the official newsletter of Johannes Kepler University Linz on June 26, 2013, 25th piece, item 178 expires by the end of September 30th, 2014.

(3) § 4 para. 1, 2 and 4, § 11 para. 2 and annex 1 and 2 as published in the official newsletter of the Johannes Kepler University Linz on June 24<sup>th</sup>, 2015, 28<sup>th</sup> piece, item 251 will take effect on October 1<sup>st</sup>, 2015.

## § 11 Transitional Provisions

(1) The equivalences given in the JKU study handbook are effective for students who did examinations within the Master's program version of 2013.

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

<b>Subjects in the Master Management in Polymer Technologies version of 2013 (or 2014)</b>	<b>equivalent subjects in the Master Management in Polymer Technologies version of 2015</b>
480MAPT12: Management in Polymer Technologies (Complementary Subject) (18 ECTS)	<i>lectures in the subject "Advanced Electives in Management and Polymer Technologies" (18 ECTS)</i>
480GEND10: Gender Studies (3 ECTS) or 480SOSK14: Soft Skills (3 ECTS)	<i>lectures in the subject "Advanced Electives in Management and Polymer Technologies" (3 ECTS)</i>



## Annex 1: Global map of study subjects - Master's Program Management in Polymer Technologies (2015)

Admission according to §2 (2) - for Graduates of the Bachelor's Program "Polymer Engineering and Technologies" ("Kunststofftechnik")

1 <sup>st</sup> Semester (WS)		2 <sup>nd</sup> Semester (SS)		3 <sup>rd</sup> Semester (WS)		4 <sup>th</sup> Semester (SS)	
Subject/Course	ECTS	Subject/Course	ECTS	Subject/Course	ECTS	Subject/Course	ECTS
<b>Management Basics</b> VL+IK Finance, Accounting and Taxation VL+IK Management and Marketing	12	<b>Advanced Polymer Technologies</b> VL Polymeric Materials 3: Polymer Mechanics and Fracture Mechanics VL+SE Polymeric Materials 4: Functional Polymeric Materials VL Polymer Product and Process Development PR Characterization and Testing of Plastics 1b UE Company Visits: Polymer Industry	10,5	<b>Management Advanced</b> IK Managerial Accounting for Engineers IK International Marketing for Engineers IK International Finance for Engineers	9	<b>Master's Thesis</b>	24
<b>Advanced Polymer Technologies</b> VL+UE Polymer Extrusion and Compounding 1: Process Technologies VL Industrial Chemistry for Plastic Engineering VL Polymer Injection Moulding 1: Machine Engineering VL+UE Polymer Product Design and Engineering III	11,5	<b>Management Advanced</b> IK Cross Cultural Management for Engineers IK Environmental, Ressource and Quality Management for Engineers	6	<b>Advanced Polymer Technologies</b> KV Polymeric Materials 5 - Polymeric Mat. & Sust. Developm.	3		
<b>Advanced Electives in Management and Polymer Technologies</b>	3,5	<b>Advanced Electives in Management and Polymer Technologies</b>	13,5	<b>Advanced Electives in Management and Polymer Technologies</b>	12		
Free Electives	3			Free Electives	6	<b>Master's Thesis Seminar / Master's Examination</b>	3
						Free Electives	3
<b>30</b>		<b>30</b>		<b>30</b>		<b>30</b>	

Total: 120

## Annex 2: Global map of study subjects - Master's Program Management in Polymer Technologies (2015)

Admission according to §2 (3) - for Graduates of other Bachelor's Programs

1 <sup>st</sup> Semester (WS)		2 <sup>nd</sup> Semester (SS)		3 <sup>rd</sup> Semester (WS)		4 <sup>th</sup> Semester (SS)			
Subject/Course	ECTS	Subject/Course	ECTS	Subject/Course	ECTS	Subject/Course	ECTS		
<b>Basics in Polymer Technologies (Bridge subject)</b> PR Laboratory for Technology of Polymer Processing - MPT VL Polymerwerkstoffe 1 VL Technologien der Polymerverarbeitung 1: Einführung	10,1	<b>Basics in Polymer Technologies (Bridge subject)</b> VL Charakterisierung und Prüfung der Kunststoffe 1 PR Characterization and Testing of Polymers 1 - MPT VL Polymer Chemistry and Chemical Process Technologies	7,9	<b>Basics in Polymer Technologies (Bridge subject)</b> KV Viscous Fluid Flow	1	<b>Master's Thesis</b>	24		
				<b>Management Advanced</b> IK Managerial Accounting for Engineers IK International Marketing for Engineers IK International Finance for Engineers	9				
<b>Management Basics</b> VL+IK Finance, Accounting and Taxation VL+IK Management and Marketing	12	<b>Advanced Polymer Technologies</b> VL Polymeric Materials 3: Polymer Mechanics and Fracture Mechanics VL+SE Polymeric Materials 4: Functional Polymeric Materials VL Polymer Product and Process Development PR Characterization and Testing of Plastics 1b UE Company Visits: Polymer Industry	10,5	<b>Advanced Polymer Technologies</b> VL+UE Polymer Extrusion and Compounding 1: Process Technologies VL Industrial Chemistry for Plastic Engineering VL Polymer Injection Moulding 1: Machine Engineering KV Polymeric Materials 5 - Polymeric Mat. & Sust. Developm. VL+UE Polymer Product Design and Engineering III	14,5				
								<b>Management Advanced</b> IK Cross Cultural Management for Engineers IK Environmental, Ressource and Quality Management for Engineers	6
Free Electives	7	<b>Advanced Electives in Management and Polymer Technologies</b>	6	<b>Advanced Electives in Management and Polymer Technologies</b>	4			<b>Master's Thesis Seminar / Master's Examination</b>	3
				Free Electives	2			Free Electives	3
<b>29,1</b>		<b>30,4</b>		<b>30,5</b>				<b>30</b>	

Total: 120