PART A: Curriculum Analysis – Instructions

In accordance with Annexure 2 of the examination and study regulations of the Master’s Program in Management and Technology, the assessment commission uses a curricular analysis to assess your eligibility and aptitude.

1. Registration

Please fill out the registration form. The link to this form will be provided at the very end of your TUM Online application.

Please provide information regarding your undergraduate studies (bachelor program):

Previous study program: please indicate your previous study program in German or English as stated on your degree certificate e.g. Technologie- und Managementorientierte Betriebswirtschaftslehre, Wirtschaftsingenieurswesen, Industrial Engineering etc.

Please indicate the official name of your university and its place and country.

Please indicate the information on GMAT (not mandatory). Please upload evidence on TUM Online

After registration, you will receive an e-mail with your login information.
2. Entering Courses

After registration please enter modules/courses, grades and credits (ECTS) according to the Transcript of Records of your undergraduate studies (Bachelor Degree Program) in German or English.

List them according to the following subject groups, please enter each subject only once!

1. **Fundamental Subjects in Management (at least 25 ECTS)**

2. **Fundamental Subjects in Empirical Methods (at least 6 ECTS; for details see part B)**
   Examples: Introduction to Social Research, Applied Econometrics, Market Research

3. **Fundamental Subjects in Modelling Business Management Methods with Mathematical Methods (at least 6 ECTS; for details see part B)**
   Examples: Management Science, Operations Research, Decision Oriented Modelling

4. **Fundamental Subjects in Economics (at least 10 ECTS)**

5. **Fundamental Subjects in Engineering or Natural Sciences (at least 15 ECTS)**
   Examples: Mathematics, Statistics, Engineering

6. **All other subjects**

Please assign all modules/courses that do not fit in one of the above-mentioned subject groups or that you are unsure of (no. 1-5) to the category no. 6: All other subjects. Please make sure you enter each subject only once.

Please enter your Thesis (if you have already finished your Bachelor’s degree) in the category 6. All other subjects

Please note that all compulsory and elective modules must be listed and correctly assigned! Additional modules that are not part of your main study program should not be listed in the Curricular Analysis. If you have completed additional classes, please include the transcript(s) with your application, they will be acknowledged in the assessment process.

Please find an example below:
3. Submission

Before sending the form online, please verify if all your entries are correct and complete.
4. FAQs

**Can I also list modules from my master studies or previous study programs?**
Additional modules that are not part of your main study program **should not be listed** in the Curricular Analysis. If you have completed additional classes, please include the transcript(s) with your application, **they will be acknowledged in the assessment process**.

**Can I also list modules that I will finish after my application?**
No, you are only allowed to insert completed courses that are listed in your Transcript of Records.

**I did not get a grade for the course, should I list it?**
Yes, please list all modules of your transcript of records. If you did not get a grade please leave the grade field blank.

**I'm not sure which category my course fits into. What should I do?**
Please put it into the "all other subjects", if you are not sure.

**Should I convert grades into the German grading system and credits into the ECTS system?**
No, please enter the classes exactly as they appear on your transcript of records. If any conversions are necessary, they will be done by TUM.

**Which language should the courses listed be in?**
Please enter the classes exactly as they appear on your transcript of records (German or English). In case you are applying with a translated copy of a transcript of records, please use the translated title (German or English).

**Can I enter non-numerical grades (such as A, B ...)?**
No, the system in use cannot process non-numerical grades. In this case, please leave the grade field blank, we will use the information in your transcript for reference.

**I made a mistake. What should I do?**
Please indicate the mistake on the printed form. We always double check the transcript with the curricular analysis and may correct possible mistakes, so you don't have to worry about it.
**PART B: Further information about the assessment process**

1. **Entrance Requirements**

To be eligible to apply for the Master in Management and Technology program, applicants must hold a Bachelor’s degree or equivalent (at least 140 ECTS at the time of application) in Management and Technology, Management, Economics, Industrial Engineering or a comparable program.

In addition, applicants must also be able to prove that, at the time of application, they have successfully completed modules worth at least:

- **25 ECTS in business (management) / “Betriebswirtschaftslehre”**
- **10 ECTS in economics / “Volkswirtschaftslehre”**
- **15 ECTS in engineering or natural science** (mathematics, statistics & informatics classes included)

2. **Additional Information about Core Module Groups**

a) **Core Module Groups**

If an application fulfills the entrance requirements, it will be processed further. Up to 50 points will be given for the experience gained in the first degree based on the following core modules (please note that the respective grade is irrelevant for the assessment of the core module groups).

<table>
<thead>
<tr>
<th>Core module group</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Business Management Modules</strong> (at least 25 ECTS)</td>
<td>20</td>
</tr>
<tr>
<td>Courses in the field of <strong>Empirical Research Methods</strong> (at least 6 ECTS)</td>
<td>10</td>
</tr>
<tr>
<td>Courses in the area of quantitative decision making with methods of <strong>Operations Research</strong> (at least 6 ECTS)</td>
<td>10</td>
</tr>
<tr>
<td><strong>Modules in Economics</strong> (at least 10 ECTS)</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>50</strong></td>
</tr>
</tbody>
</table>

Please note:

- A given subject either belongs to natural sciences or Empirical Research Methods, it cannot be assigned to both!
- A given subject either belongs to management or Operations Research, it cannot be assigned to both!
b) Additional Information about core modules

In the following you will find relevant content for the core module groups Empirical Research Methods and Operations Research (based on syllabi from classes taught at TUM School of Management). For a recognition of a course, a predominant agreement of a complete module with the reference contents must be given.

Please note that we are not able to check classes for eligibility before you apply. It may be helpful to include certain syllabi with your application for our reference. Please note that a final thesis or class paper cannot be recognized for any of the core module groups.

### Management Science/Operations Research

**Intended Learning Outcomes**

After successful completion of the module students are capable of modelling mathematical optimization models for business problems, of solving small problems manually, of interpreting derived solutions and translating them into management actions.

**Content**

Management Science is about

- Modeling, solving and analyzing business administrations and management problems using mathematical concepts.
- Linear Programming
- Mixed-Integer Programming
- Graph Theory
- Network Flow
- Dynamic Programming
- Decision Theory.

### Empirical Research Methods

**Description**

This module will give you an introduction to empirical research methods, including the higher aims of empirical research, the standards it needs to meet, and a set of methods that you can directly apply.

**Content**

Topics:

- Research ethics
- Research question and their implications
• Paper reading, positioning, and contributions
• Correlation and causality
• Choosing a research design
• Qualitative research
• Quantitative analysis & quantitative research design
• Using existing scales and data
• Data preparation and descriptive statistics
• Advanced quants

3. Assessment of final bachelor’s degree grade

Up to 9 points will be given for your overall final bachelor’s degree grade. If you apply with a bachelor’s degree from a foreign country and/or with a grade of grading system other than the German one, your grade will be converted into the German grading system using the Bavarian formula by TUM. Please refer here for more information: [https://www.tum.de/nc/en/studies/application-and-acceptance/grade-conversion-formula-for-grades-earned-outside-germany/](https://www.tum.de/nc/en/studies/application-and-acceptance/grade-conversion-formula-for-grades-earned-outside-germany/)

<table>
<thead>
<tr>
<th>German Grade</th>
<th>Points</th>
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</thead>
<tbody>
<tr>
<td>1.0</td>
<td>9</td>
</tr>
<tr>
<td>1.1 / 1.2</td>
<td>8</td>
</tr>
<tr>
<td>1.3 / 1.4</td>
<td>7</td>
</tr>
<tr>
<td>1.5 / 1.6</td>
<td>6</td>
</tr>
<tr>
<td>1.7 / 1.8</td>
<td>5</td>
</tr>
<tr>
<td>1.9 / 2.0</td>
<td>4</td>
</tr>
<tr>
<td>2.1 / 2.2</td>
<td>3</td>
</tr>
<tr>
<td>2.3 / 2.4</td>
<td>2</td>
</tr>
<tr>
<td>2.5 / 2.6</td>
<td>1</td>
</tr>
<tr>
<td>2.7 or below</td>
<td>0</td>
</tr>
</tbody>
</table>

4. Result of stage 1

The points from the core modules and your final grade will be combined. If you submitted a valid GMAT certificate as part of your application (at least 600 points), 10 additional points will be added.

The result of stage 1 either leads to a direct rejection or admission of an application or your Essay will be evaluated in stage 2 as also evident in the following chart:
5. Stage 2 / Evaluation of Essay

In case the Essay is relevant for the final assessment, it will be evaluated based on the following criteria, the maximum point score for the essay is 40 points:

- Ability of scientific-logical reasoning (max. 20 points)
- Classification of economic-technical facts (max. 10 points)
- English-language expressiveness (max. 10 points)

6. Result of stage 2

The final result in stage 2 is the combined point total from stage 1 (GMAT not being considered in stage 2) and the total points achieved in the evaluation of the Essay. If the combined total is 70 points or more, the application will be accepted (admission), if the total point score is 69 points or less, the application will be rejected.

Please note that this information sheet is not legally binding nor do we guarantee for its correctness and completeness! The only legally binding document is the statute (“FPSO”) in its most current version, available for download here: https://www.wi.tum.de/wp-content/uploads/2016/09/FPSO-MMT-finaleVersion-abWS1819.pdf