Welcome to come.tum

Master of Science in Computational Mechanics
Munich, 9. October 2023
Who's involved?
<table>
<thead>
<tr>
<th>Chair of Structural Mechanics</th>
<th>Prof. Dr.-Ing. Gerhard Müller</th>
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</thead>
<tbody>
<tr>
<td>Chair of Computational Modelling and Simulation</td>
<td>PD Dr.-Ing. habil. Stefan Kollmannsberger</td>
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<tr>
<td>Professorship for Computational Solid Mechanics</td>
<td>Prof. Dr.-Ing. habil. Fabian Duddeck</td>
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<tr>
<td>Chair of Hydromechanics</td>
<td>Prof. Dr.-Ing. habil. Michael Manhart</td>
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<tr>
<td>Chair of Structural Analysis</td>
<td>Prof. Dr.-Ing. Kai-Uwe Bletzinger</td>
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</tbody>
</table>
Course Coordinators

Sebastian Schopper, M.Sc.
Room N1151
E-Mail: sebastian.schopper@tum.de
Telephone: 089-289-28322

Felix Schneider, M.Sc.
Room N1149
E-Mail: felix.w.schneider@tum.de
Telephone: 089-289-28393
Examination Administration

Christine Göppel
Room 1701

E-Mail: Christine.Goeppel@tum.de
Telephone: 089-289-28194 or -28577

Office Hours:
Mondays 13:30 – 15:30 h
Make an appointment via phone or e-mail.

Responsible for exam administrations and compliance of study regulations
Overview

- Numbers
- Introduction to the Examination Regulations
- Study Plan/Curriculum
- TUMonline (enrollment, course registration)
- Moodle
- Schedule of courses (1st semester)
- welcome week program
Numbers
Applications
Enrollments and Graduations

Master's in Computational Mechanics | welCoMe Week | 9. October 2023
Nationalities
WS 23/24
Career Graduate Poll 2020

Sector

- Automotive; 3
- Aerospace; 1
- Other; 3

Business Unit

- Research and Development; 6
- Production; 1
- Planning; 1
- Project Management; 1

Further areas of activity:
- Structural Engineering (2)
- Software Development (4)
Study Plan and Examination Regulations
Derivation of differential equations for the description of mechanical systems

Solution of technical problems using numerical methods

Implement in software

Numerical solution methods
Examination regulations

Standard study period: 4 Semesters (including Master’s Thesis)

- **Compulsory Courses**
  - 36 Credit Points

- **Core Elective Courses**
  - in catalogues
  - Mechanics & Computation
  - 24 Credit Points

- **General Education Courses**
  - 3 Credit Points

- **General Elective Courses**
  - 27 Credit Points (Minimum)

- **Master’s thesis**
  - 30 Credit Points

Minimum number of credits: 120 CP

Master's in Computational Mechanics | welCoMe Week | 9. October 2023
Study Plan/Curriculum (Core Electives 2\textsuperscript{nd} & 3\textsuperscript{rd} semester)

12 CP (2 modules) per electives catalogue

- 6 CP Computational Fluid Dynamics
- 6 CP Structural Dynamics
- 6 CP Computational Material Modeling 2
- 6 CP Theory of Plates and Shells

12 CP Electives

- Mechanics
- Computation

2 out of 4

- 6 CP Finite Element Method 2
- 6 CP Artificial Intelligence in Computational Mechanics
- 6 CP Functional Analysis & Computational Linear Algebra
- 6 CP Optimization

2 out of 4
Study Plan/Curriculum (Electives)

- Technical Elective Courses (27 Credits):
  - available courses published at [https://wiki.tum.de/display/edschooloffice/Curriculum](https://wiki.tum.de/display/edschooloffice/Curriculum)
  - 17 out of 27 credits have to be from this curriculum
  - 10 out of 27 credits can be accredited as individual elective courses
    (that means selection from the complete module catalog of TUM is possible)

All individual elective courses have to be approved by the course coordinator.
Study Plan/Curriculum (General Electives)

- General Elective Courses (3 Credits):
  - available courses published at https://collab.dvb.bayern/display/TUMedschooloffice/Curriculum
  - 3 credits have to be taken
  - Please make suggestions, if you would like to include a specific course
### Study Progress Regulations

One compulsory exam has to be passed after two semesters.

<table>
<thead>
<tr>
<th>Minimum credits:</th>
<th>30 credits after 3 semesters</th>
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<tbody>
<tr>
<td></td>
<td>60 credits after 4 semesters</td>
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<td>90 credits after 5 semesters</td>
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<tr>
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<td>120 credits after 6 semesters</td>
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</table>

→ **Maximum duration of study: 6 semesters**

The study regulations for the master’s program Computational Mechanics are published in the CoMe-Wiki, please visit [https://collab.dvb.bayern/x/Q9dfB](https://collab.dvb.bayern/x/Q9dfB)
A certificate of basic proficiency in German is required until the end of the second semester (30.09.2024)

Required level: A1.1 or higher

Possible Courses

- TUM language center:
  https://www.sprachenzentrum.tum.de/en/sprachenzentrum/languages/german/

- Any German course offered at an institute (e.g. University Munich, Goethe-Institute, Volkshochschule, ...) or online

Send your proof (certificate or exam result) to Mrs. Göppel (christine.goeppel@tum.de)
Exam Registration

Via TUMonline (www.tumonline.de)

Registration Periods:

- winter term: 1st – 31st January
- summer term: 1st – 31st July

Cancellation possible until 3 days before the exam
Exam Review

Right to a post-exam review

Different procedures at the chairs:

• General date announced by the chair
• Registration necessary via e-mail or online
• Individual appointment upon request

→ Check with the course supervisor if you want to review your exam
Important Webpages and Further Information
TUMonline – www.tumonline.de

- TUM-Wiki:
  https://collab.dvb.bayern/display/TUMdocs/Students

- Course Registration:
  https://www.tum.de/en/studies/during-your-studies/organizing-your-studies/course-offerings

- YouTube - Tutorials:
  - general information: https://www.youtube.com/watch?v=e-67iUDH34
  - TUM student info channel:
    https://www.youtube.com/channel/UCx0umWxDASjFmTYIttdkeIA
We recommend to register for courses via “Study Status / Curriculum”:
### TUMonline – Course Registration

Select the program “Computational Mechanics”

<table>
<thead>
<tr>
<th>ID of degree programme</th>
<th>Name of degree programme</th>
<th>Curriculum</th>
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<tbody>
<tr>
<td>1630 06 671</td>
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<tr>
<td>1630 16 331</td>
<td><strong>Computational Mechanics</strong></td>
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</table>
Uncollapse the required modules and click on the link for the registration.
TUMonline – Course Registration

Click on “Go to course registration”
TUMonline – Course Registration

Select “Standardgruppe” and place your request
Moodle = e-learning platform of TUM

- Lectures provide there their supporting material (lecture notes, task sheets, …)
- Login also with @tum address and TUMonline password
- Registration for courses is transferred automatically from TUMonline
Website – www.come.tum.de

- Web presence at www.come.tum.de, directing to
  
  https://www.ed.tum.de/en/ed/studies/degree-program/computational-mechanics-m-sc/

- Most of the detailed information can now be found on our Wiki page
  
  https://wiki.tum.de/display/edschooloffice/M.Sc.+Computational+Mechanics
Schedule of courses (1st semester)
# Timetable 1st Semester (on Wiki)

<table>
<thead>
<tr>
<th>Monday</th>
<th>Tuesday</th>
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<tr>
<td>8.00</td>
<td>Advanced Fluid Mechanics (comp.)</td>
<td>Advanced Fluid Mechanics (comp.)</td>
<td>Intro. to Finite Element Methods (comp.)</td>
<td>Continuous Mechanics (comp.)</td>
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**Courses:**
- Advanced Fluid Mechanics
- Continuous Mechanics
- Intro. to Finite Element Methods
- Computational/Material Modeling (comp.)
- Theory of Plates
- Seminar Fluid Mechanics
- FE Modeling, Simulation & Validation (comp.)
- Structural Analysis (Bildinger)
- Engineering Risk Analysis (Stadler)
- Computational Mechanics (Drake)
- Fluid Mechanics (Markert)
- Mathematics
- Computational Engineering
- Electromechanics (Markert)
- Faculty for Informatics

*Note: Times are in UTC.*

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Master's in Computational Mechanics | welCoMe Week | 9. October 2023
Locations on Main Campus
Room Numbering at TUM

• Room Numbers at TUM Main Campus (Arcisstr.):

  e.g. PC-Pool: 3209

  3rd floor

  Room 09

  Building 2

  Exceptions
e.g. North Buildings

  N1150

  1st floor*

  Building N1

  Room 50

* You have to go up 2 stairs from ground level due to a mezzanine floor in between

TUM-RoomFinder: https://portal.mytum.de/campus/roomfinder
University Sports Center

- Classes in sports, climbing, fitness and health, and much more…

https://www.zhs-muenchen.de
WelCoMe week
# Schedule of the WelCoMe week

<table>
<thead>
<tr>
<th>Time</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
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<tbody>
<tr>
<td>09:00 - 10:00</td>
<td>Welcome Address</td>
<td>09:00 - 10:00</td>
<td>09:00 - 10:00</td>
<td>09:00 - 10:00</td>
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<tr>
<td>Room 277</td>
<td>Introduction to Programming in C++</td>
<td>Introduction to Programming in C++</td>
<td>Introduction to Programming in C++</td>
<td>Introduction to Programming in C++</td>
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<td>11:00 - 12:30</td>
<td>Campus Tour</td>
<td>11:00 - 12:30</td>
<td>11:00 - 12:30</td>
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<td>11:00 - 12:30</td>
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<td>starting after welcome address</td>
<td>Library Tour</td>
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<tr>
<td>17:00 - 18:00</td>
<td>Office Hour Prof. Budkeck</td>
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<td>19:00</td>
<td>Potluck Dinner</td>
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Mensa

StudiTUM (for all TUM students)

3238: CIP-Pool → C++ exercises take place here
3209: CIP-Pool (on opposite side of building)

3rd floor:
Chair of Computational Modeling and Simulation – Prof. Borrmann

5th floor: Vorhoelzer – Potluck Dinner

Ground floor:
Studenten Service Zentrum
Validation machines for student card

First floor:
Library

Stu-Café

Chair of Hydromechanics – Prof. Manhart
First/second floor:
2710 & 3701: Study rooms (for BGU students)

N1160: Study room (for BGU students)

Chair of Computational Mechanics – Prof. Duddeck

Chair for Structural Mechanics – Prof. Müller & Chair of Structural Analysis – Prof. Bletzinger
Ground floor:
CIP-Pool N0199a
Scan this to download map
Potluck Dinner

Bring your own food

- A regular portion is enough
- No heating or cooling available
- Bring something that you like yourself or that is traditional in your home country

All food is shared

We provide drinks
City Tour

City tour from 5 to 7 pm

2 hour walk to the city centre

Check weather forecast and bring rain-proof clothes if necessary

Hofbräuhaus afterwards – Drinks and Dinner
Thank you for your attention!

Have a great start at TUM and enjoy your
Master's in
Computational Mechanics