

English Version

Department of Materials Science and Engineering: Course Catalog for Exchange Students University of Crete, Heraklion, Greece | Academic Year 2025/2026

Postgraduate Level

Fall Semester (Semester A)

-  **Materials Structure & Characterization**
 - o Introduction to Crystallography (Code: MEMY-445)
 - o Crystal Chemistry (Code: MEMY-453)
-  **Advanced Functional Materials & Electronics**
 - o Advanced Solid-State Materials and Nanostructures (Code: MEMY-501)
 - o Advanced Organic Materials for Energy and Environment (Code: MEMY-582)
 - o Foundations of Modern Optics (Code: MEMY-901)
 - o Optoelectronics and Laser (Code: MEMY-580)
-  **Biomaterials & Biomedical Engineering**
 - o Bio-organic Nanostructures - Supramolecular Chemistry (Code: MEMY-598)
 - o Biological Materials and Synthetic Biomaterials (Code: MEMY-491)
 - o Sustainable (Bio)polymers (Code: MEMY-428)
-  **Computational & Theoretical Materials Science**
 - o Theoretical Materials Science and Mechanics of Materials (Code: MEMY-502)
-  **Polymers & Soft Matter**
 - o Elements of Colloidal Dispersions (Code: MEMY-471)

Spring Semester (Semester B)

-  **Polymers & Soft Matter**
 - o Soft Matter and Mechanics (Code: MEMY-503)
 - o Polymer Physics (Code: MEMY-450)
 - o Polymer Synthesis (Code: MEMY-452)
 - o Rheology and Polymer Processing (Code: MEMY-456)

-  **Biomaterials & Biomedical Engineering**
 - o Biomaterials and Biomedical Engineering (Code: MEMY-504)
 - o Tissue Engineering (Code: MEMY-496)
 -  **Computational & Theoretical Materials Science**
 - o Computational Materials Science (Code: MEMY-447)
 - o Computational Materials Science II (Code: MEMY-512)
 -  **Advanced Functional Materials & Electronics**
 - o Optical Engineering and Metrology (Code: MEMY-902)
 - o Photonic Materials and Devices (Code: MEMY-490)
 -  **Materials Structure & Characterization**
 - o Elements of Magnetic Materials (Code: MEMY-483)
 - o Transmission Electron Microscopy (Code: MEMY-446)
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Undergraduate Level

Winter Semester

- Biomaterials (Code: EMY-341) | 5 ECTS
- Materials for Energy (Code: EMY-447) | 5 ECTS
- Physics of Colloidal Dispersions (Code: EMY-408) | 6 ECTS
- Sustainable (Bio)polymers (Code: EMY-428) | 5 ECTS
- Crystal Chemistry (Code: EMY-424) | 6 ECTS

Spring Semester

- Polymer Physics (Code: EMY 407) | 6 ECTS
 - Computational Materials Science I (Code: EMY 415) | 5 ECTS
 - Polymer Synthesis (Code: EMY 421) | 5 ECTS
 - Nanomagnetic Materials and Applications (Code: EMY 405) | 6 ECTS
 - Introduction to Crystallography (Code: EMY 445) | 5 ECTS
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German Version (Deutsche Version)

Master-Niveau (Postgraduate)

Herbstsemester (Semester A)

-  **Materialstruktur & -charakterisierung**
 - o Einführung in die Kristallographie (Code: MEMY-445)
 - o Kristallchemie (Code: MEMY-453)
-  **Fortgeschrittene Funktionsmaterialien & Elektronik**
 - o Fortgeschrittene Festkörpermateriale und Nanostrukturen (Code: MEMY-501)
 - o Fortgeschrittene organische Materialien für Energie und Umwelt (Code: MEMY-582)
 - o Grundlagen der modernen Optik (Code: MEMY-901)
 - o Optoelektronik und Laser (Code: MEMY-580)
-  **Biomaterialien & Biomedizintechnik**
 - o Bio-organische Nanostrukturen - Supramolekulare Chemie (Code: MEMY-598)
 - o Biologische Materialien und synthetische Biomaterialien (Code: MEMY-491)
 - o Nachhaltige (Bio-)Polymere (Code: MEMY-428)
-  **Computergestützte & Theoretische Materialwissenschaft**
 - o Theoretische Materialwissenschaft und Werkstoffmechanik (Code: MEMY-502)
-  **Polymere & Weiche Materie**
 - o Elemente kolloidaler Dispersionen (Code: MEMY-471)

Frühjahrssemester (Semester B)

-  **Polymere & Weiche Materie**
 - o Weiche Materie und Mechanik (Code: MEMY-503)
 - o Polymerphysik (Code: MEMY-450)

- o Polymersynthese (Code: MEMY-452)
 - o Rheologie und Polymerverarbeitung (Code: MEMY-456)
 -  **Biomaterialien & Biomedizintechnik**
 - o Biomaterialien und Biomedizintechnik (Code: MEMY-504)
 - o Gewebezüchtung (Tissue Engineering) (Code: MEMY-496)
 -  **Computergestützte & Theoretische Materialwissenschaft**
 - o Computergestützte Materialwissenschaft (Code: MEMY-447)
 - o Computergestützte Materialwissenschaft II (Code: MEMY-512)
 -  **Fortgeschrittene Funktionsmaterialien & Elektronik**
 - o Optische Technik und Messtechnik (Code: MEMY-902)
 - o Photonische Materialien und Bauelemente (Code: MEMY-490)
 -  **Materialstruktur & -charakterisierung**
 - o Elemente magnetischer Materialien (Code: MEMY-483)
 - o Transmissionselektronenmikroskopie (Code: MEMY-446)
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Bachelor-Niveau (Undergraduate)

Wintersemester

- Biomaterialien (Code: EMY-341) | 5 ECTS
- Materialien für die Energiewirtschaft (Code: EMY-447) | 5 ECTS
- Physik kolloidaler Dispersionen (Code: EMY-408) | 6 ECTS
- Nachhaltige (Bio-)Polymere (Code: EMY-428) | 5 ECTS
- Kristallchemie (Code: EMY-424) | 6 ECTS

Frühjahrssemester

- Polymerphysik (Code: EMY 407) | 6 ECTS
- Computergestützte Materialwissenschaft I (Code: EMY 415) | 5 ECTS
- Polymersynthese (Code: EMY 421) | 5 ECTS
- Nanomagnetische Materialien und Anwendungen (Code: EMY 405) | 6 ECTS
- Einführung in die Kristallographie (Code: EMY 445) | 5 ECTS