<table>
<thead>
<tr>
<th>Course Title</th>
<th>Polymers in Medical Applications</th>
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<tbody>
<tr>
<td>Course Code</td>
<td>MME 555</td>
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<tr>
<td>Course Type</td>
<td>Elective</td>
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<tr>
<td>Level</td>
<td>Graduate</td>
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<tr>
<td>Year / Semester</td>
<td>Fall semester (offered every 2nd year)</td>
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<tr>
<td>Teacher's Name</td>
<td>Theodora Krasia</td>
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<tr>
<td>ECTS</td>
<td>8</td>
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| Lectures / week | 1x3 hrs | Laboratories / week | -- |

## Course Purpose and Objectives
During the last decades, polymers have been the key-players in the development of new materials destined for use in medical and biomedical applications. The latter include therapy, diagnostics, bioseparation, biosensing, biocatalysis, etc. This course aims in providing an overview on the use of polymeric materials and polymer-based nanocomposites in the biomedical field.

## Learning Outcomes
- Acquire general knowledge and understanding on polymers, their thermomechanical properties and structure-to-property relation.
- Discuss on the properties of polysiloxanes and their use in biomedical applications.
- Discuss on the use of polymers and polymer composites in dental applications.
- Acquire knowledge on hydrogels in terms of synthesis, properties, and biomedical applications.
- Recognize the use of polymers in drug and gene delivery and discuss on various parameters influencing the drug delivery process.
- Discuss on the use of polymer-based nanofibers in biomedicine and biotechnology.
- Discuss on the applications of SPIONs and biofunctionalized carbon nanotubes in biomedicine.
- Acquire knowledge and discuss on blood contacting polymeric materials.

**General learning outcomes:**
- Develop presentation skills through oral presentations in class
- Retrieve and analyse scientific manuscripts on the topic.

## Prerequisites
- NO Required NO
|---|---|
| Teaching Methodology | - Lectures (in the form of ppt. presentations)  
- Use of audio and video tools  
- Lab demonstrations  
- Presentations by students  

Communicative, Collaborative  
During the first week of the semester, the Syllabus of the course is given by the teacher, which includes information on the course content, expected learning outcomes, assessment and office hours |
• Scientific manuscripts and review articles  
• 3. Course handouts (http://www.eng.ucy.ac.cy/krasia/) |
| Assessment | Midterm Examination: 35 %  
Oral Presentations: 15 %  
Final Examination: 50% |
| Language | English |