



Course Syllabus

<b>Department/Faculty:</b> School of Engineering
<b>Graduate Program:</b> Materials Engineering and Nanotechnology
<b>Degree</b> <input checked="" type="checkbox"/> Academic Master's <input checked="" type="checkbox"/> Doctorate (PhD) <input type="checkbox"/> Professional Master's
<b>Course Name:</b> Supramolecular nanotechnology
<b>Professor:</b> Prof. Dr. Thiago da Cruz Canevari
<b>Office hours:</b> 48
<b>Course Overview:</b> <p>The course deals with learning supramolecular chemistry, self-assembly of molecules, understanding interactions and specific affinities between molecules that originate systems or structures of greater complexity, chemical reactivity, and molecular nanotechnology.</p>
<b>Topics outline:</b> <ol style="list-style-type: none"><li>1. Atomic/molecular organization.</li><li>2. Synergistic interaction between the constituents of multi-component systems.</li><li>3. Energetics of phenomena governed by weak interactions.</li><li>4. Molecular recognition, transformation, transport and signaling.</li><li>5. Obtaining new features and properties.</li><li>6. Integrated chemical systems.</li><li>7. Self-assembly, self-replication, and self-repair.</li><li>8. Building blocks in Supramolecular Chemistry.</li></ol>
<b>Letter Grade Assignment:</b> Grade A (Excellent) - Grade points between 9 and 10 Grade B (Good) - Grade points between 8 and 8.9 Grade C (Satisfactory) - Grade points between 7 and 7.9 Grade D (Unsatisfactory) - Grade points between 0 and 6.9
<b>Texts, Materials, and supplies:</b> <ol style="list-style-type: none"><li>1. ATWOOD, JERRY L. <i>Comprehensive Supramolecular Chemistry II</i>, Second Edition, 2nd Edition, Elsevier, 2017.</li><li>2. WEISS, RICHARD G. <i>Molecular Gels: Structure and Dynamics</i>, RSC, UK, 2018. ISBN:978-1-78801-111-2</li><li>3. 3- TOMA, H. E. <i>Nanotecnologia molecular- materiais e dispositivos</i>, 1ª edição. Blucher, São Paulo, 2016.</li><li>4. 4) STEED, J. W. <i>et al. Concepts in Supramolecular Chemistry</i>, Wiley: England, 2007.</li><li>5. 5) LEHN, J. M. <i>Supramolecular Chemistry–Concepts and Perspectives</i>; VCH: Weinheim, 1995.</li><li>6. 6) GODDARD, W. A. <i>et al. Handbook of Nanoscience, Engineering, and Technology</i>, 2nd ed., CRC Press: Boca Raton, 2007.</li></ol>