

03-02-2023

## TEACHING ACTIVITY FOR PhD COURSE IN CHEMISTRY A.A. 2022-2023

COORDINATOR Prof. Daniele Passarella

	Title	Date	Hour	Room	CFU
<b>Coordinator: Bernardi Anna</b>  <b>Lecturers:</b> <b>Bernardi Anna</b> <b>Martinazzo Rocco</b> <b>Dragonetti Claudia</b>	<b>Literature search in chemistry</b>  The course is organized as a journal club: students will be asked to select two recent and relevant articles, in fields distinct from their research topic, and to critically present them to the group. Each presentation is followed by a discussion opened by a second student, with the role of reviewer, and led by one of the teachers. The objectives are to provide participants with the ability to read, interpret and contextualize the chemical literature, to improve their presentation skills, to stimulate their active participation in chemical conversations. The introductory part of the course (2h) aims to provide students with basic knowledge about bibliometry and how it is currently used in the evaluation processes.	February  <b>Date to be decided with the Professor</b>			2
<b>Coordinator: Vasile Francesca</b>  <b>Lecturers:</b> <b>Vasile Francesca</b> <b>Tiana Guido</b> <b>Ragona Laura</b>	<b>Advanced NMR techniques</b>  The student will acquire skills on the analysis of the structure, the conformation and the dynamic behaviour of molecules using NMR techniques and computational calculations. During the course, NMR techniques useful to study the interactions between molecules and their biological target will be presented.	<b>15-02-2023</b> <b>16-02-2023</b> <b>21-02-2023</b> <b>22-02-2023</b>	<b>13:30-16:30</b> <b>14:30-16:30</b> <b>13:30-16:30</b> <b>13:30-16:30</b>	<b>Aula G15</b>	2

<p><b>Coordinator: Selli Elena</b></p> <p><b>Lecturers:</b></p> <p>Selli Elena</p> <p>Chiarello Gianluca</p> <p>Dozzi Maria Vittoria</p> <p>Grigioni Ivan</p> <p>Visiting da designare</p>	<p><b>Solar Energy Conversion</b></p> <p>The course aims at providing the basis of photo(electro)catalysis for the conversion of solar light into electricity and/or solar fuels, with a particular focus on the development of materials and devices able to effectively harvest solar light and provide an efficient photoproduced charge carriers separation. The materials for the electrocatalytic reduction of CO<sub>2</sub> will also be briefly treated.</p>	<p>07-03-2023</p> <p>08-03-2023</p> <p>14-03-2023</p> <p>15-03-2023</p>	<p>14:30-16:30</p> <p>14:30-16:30</p> <p>14:30-16:30</p> <p>14:30-16:30</p>	<p><b>Aula 101</b></p>	<p><b>2</b></p>
<p><b>Coordinator: Passarella Daniele</b></p> <p><b>Lecturers:</b></p> <p>Ghezzi Serena (12 h)</p>	<p><b>Graphic Communication of Scientific Research to make your presentations more incisive</b></p> <p>The course goal is to learn graphic language rules and to master them. The main topic is teaching the students how to make the correct graphic choices when they make communication for scientific research.</p>	<p>16-03-2023</p> <p>17-03-2023</p> <p>21-03-2023</p>	<p>09:00-13:00</p> <p>09:00-13:00</p> <p>09:00-13:00</p>	<p><b>on-line</b></p>	<p><b>2</b></p>
<p><b>Coordinator: Ragaini Fabio</b></p> <p><b>Lecturers:</b></p> <p>Ragaini Fabio (a)</p> <p>Hannedouche Jérôme (b)</p> <p>Institut de Chimie Moléculaire et des Matériaux d'Orsay - ICMMO</p>	<p><b>Metal catalyzed reactions leading to the formation of C-N bonds</b></p> <p>To acquire up-to-date competences on transition metal-catalyzed reactions leading to the formation of C-N bonds. To acquire knowledge about the mechanism of the involved reactions, in the aim of better mastering the synthetic results.</p>	<p>(a) 17-04-2023</p> <p>(a) 18-04-2023</p> <p>(a) 19-04-2023</p> <p>(b) 26-04-2023</p> <p>(b) 27-04-2023</p>	<p>14:30-16:30</p> <p>14:30-16:30</p> <p>14:30-16:30</p> <p>14:30-16:30</p> <p>14:30-16:30</p>		<p><b>2</b></p>

<p><b>Coordinator: Ceotto Michele</b></p> <p><b>Lecturers:</b></p> <p><b>Ceotto Michele</b></p> <p><b>Conte Riccardo</b></p> <p><b>Visiting da designare</b></p>	<p><b>Infra-red and Raman Spectroscopy of Complex Molecular Systems</b></p> <p>This is a course for PhD students in Science and which are interested to infra-red and Raman spectroscopy. The course will introduce the students to both theoretical and experimental approaches to nuclear spectroscopy and it will show the importance of computational chemistry in nuclear spectroscopy.</p>	<p><b>23-05-2023</b></p> <p><b>24-05-2023</b></p> <p><b>25-05-2023</b></p> <p><b>26-05-2023</b></p> <p><b>26-05-2023</b></p>	<p><b>14:00-16:00</b></p> <p><b>14:00-16:00</b></p> <p><b>14:00-16:00</b></p> <p><b>10:00-12:00</b></p> <p><b>14:30-16:30</b></p>		<p><b>2</b></p>
<p><b>Coordinator: Passarella Daniele</b></p> <p><b>Lecturers:</b></p> <p><b>Passarella Daniele (2h) (a)</b></p> <p><b>Fasano Valerio (2h) (b)</b></p> <p><b>Fiorito (4h) (c)</b></p> <p><b>Visiting da designare (2h)</b></p>	<p><b>New Methodologies for Synthesis and Modification of Natural products</b></p> <p>The lecture course “New Methodologies for Synthesis and Modification of Natural products” will cover a range of methods in organic chemistry relevant to the synthesis of complex bioactive molecules. The course content is structured in multiple sections. The first section covers modern synthetic methods, with an emphasis on asymmetric synthesis and carbon-carbon bond formation. The focus of this section is on models for understanding the stereochemical outcomes of reactions and the application of these techniques to design synthetic strategies towards complex target molecules. The second section is focused on retrosynthetic analysis, a powerful conceptual tool chemists use to design synthetic strategies. In the final part of the course, a recent synthesis of a complex natural product will be presented, thus giving an opportunity to appreciate applications in a real-life context, while introducing students to state-of-the-art synthetic methodologies and tactics. This course will be held by lecturers expert in total synthesis and novel synthetic methodologies.</p>	<p><b>(a) 12-06-2023</b></p> <p><b>(b) 13-06-2023</b></p> <p><b>(c) 14-06-2023</b></p> <p><b>(d) 15-06-2023</b></p>			<p><b>2</b></p>
<p><b>Coordinator: Martinazzo Rocco</b></p> <p><b>Lecturers:</b></p> <p><b>(a) I modulo:</b> <b>Alessi, Leveraro, Guerrini, Bensi (TAB UniMI)</b></p> <p><b>(b) II modulo:</b> <b>Martinazzo Rocco</b> <b>Fratesi (Dip. di Fisca)</b></p>	<p><b>Hpc@unimi: Indaco for molecules and solids</b></p> <p>Fundamentals of computers and networks, UNIX; installation and configuration of programs to access Indaco; software optimization and management. Definition of and introduction to electronic problem. Chemical bonding, electronic properties, molecular structure and transformations. Methods for solid state; applications to periodic and non-periodic systems.</p>	<p><b>(a) 20-06-2023</b></p> <p><b>(a) 21-06-2023</b></p> <p><b>(b) 26-06-2023</b></p> <p><b>(b) 27-06-2023</b></p> <p><b>(b) 28-06-2023</b></p> <p><b>(b) 29-06-2023</b></p> <p><b>(b) 30-06-2023</b></p> <p><b>(b) 03-07-2023</b></p>	<p><b>10:00-14:00</b></p> <p><b>10:00-14:00</b></p> <p><b>10:30-12:30</b></p> <p><b>10:30-12:30</b></p> <p><b>10:30-12:30</b></p> <p><b>10:30-12:30</b></p> <p><b>10:30-12:30</b></p> <p><b>10:30-12:30</b></p>		<p><b>3</b></p>