

**Revision of the course number: CHM361A**

**Title of the course: Chemistry Communication Skills**

**Credit details: 2-0-0-0 (6)**

**Objective of the course:** To introduce communication and computer skills related to chemistry.

**Specialized Infrastructure requirement:** None

**Modular/Full semester:** Full semester

**Instructional aspects:** Teaching of the communication skill will be performed with the help of relevant software tools.

**Course content:** (This will go in the "Courses of Study" book. Please note that the duration of each lecture is 50 minutes.)

**Lecture-wise break-up: (please note that the duration of each lecture is 50 minutes)**

<b>Topic</b>	<b>Suggested number of lectures</b>
<b>Oral and written communication:</b> <ul style="list-style-type: none"><li>• How to write news and views related to chemistry?</li><li>• Writing review on current topics in chemistry (eg.: Nobel prize in chemistry, recent advances, etc.)</li><li>• Prepare a technical writing in Latex (Including equations, derivations, tables etc.) and Microsoft word.</li><li>• Presentation of slides on a project work.</li><li>• Presentation of reviews to audience.</li></ul>	7
<b>Tools related to chemistry:</b> <ul style="list-style-type: none"><li>• Draw chemical structures using CHEMDRAW (Exercise: draw chemical structure of different natural products as per instruction), Mercury (drawing crystal structures of molecular crystals).</li><li>• How to find compound related data in the literature? Example: SciFinder</li><li>• Finding commercial sources and databases for chemicals.</li></ul>	7

<ul style="list-style-type: none"> <li>• Use and management of mined data (Scopus, Web of Sciences).</li> <li>• Making literature library for scientific writing and citation with reference management tools such as Endnote, BibTex, Mendeley, Zotero etc.</li> <li>• Data fitting (Igor, Origin, etc.)</li> <li>• Number precision and numerical data presentation, error analysis.</li> <li>• Making figures and technical drawing for journals.</li> </ul>	
<p><b>Databases in chemistry:</b></p> <ul style="list-style-type: none"> <li>• Use of specialized databases like CCDC, PDB, SDBS, other nuclei NMR databases (Exercise: find crystal structures in CCDC for different known compounds as instructed, downloading spectrum from SDBS and report proton and carbon spectra in different journal format)</li> <li>• How to report/write compound data and chemical procedures? (Exercise: prepare experimental procedures and synthetic procedures for different journals).</li> </ul>	6
<p><b>Scientific Ethics:</b></p> <ul style="list-style-type: none"> <li>• Plagiarism.</li> <li>• Scientific integrity.</li> <li>• Data integrity and recording experiments in lab notebook.</li> <li>• How to make/prepare text similarity report using turnitin and ithenticate?</li> </ul>	5
<p><b>Flexible topics in communication skills.</b></p>	3
<p><b>Total number of lectures</b></p>	<b>28</b>

**Suggested text and reference material:** Materials will be provided by the instructor as per the schedule of the lecture contents.

**Main differences suggested in this review:** The content is elaborated and the number of lectures per semester is increased to 28 from 9. The credit of the course will be 6 after revision.

(Names and signatures of the committee members)



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