

**Subject card**

|  |  |  |  |            |  |         |     |
|--|--|--|--|------------|--|---------|-----|
| <b>Subject name and code</b>                       | M.Sc. seminar - Chemistry, PG_00144202   |  |  |            |  |         |     |
| <b>Field of study</b>                              | Chemical Business  |  |  |            |  |         |     |
| <b>Date of commencement of studies</b>             | February 2025  | <b>Academic year of realisation of subject</b>           |  |            | 2025/2026  |         |     |
| <b>Education level</b>                             | postgraduate studies   | <b>Subject group</b>                                     |  |            | Obligatory subject group in the field of study<br>Optional subject group |         |     |
| <b>Mode of study</b>                               | full-time studies  | <b>Mode of delivery</b>                                  |  |            | at the university  |         |     |
| <b>Year of study</b>                               | 1  | <b>Language of instruction</b>                           |  |            | Polish   |         |     |
| <b>Semester of study</b>                           | 2  | <b>ECTS credits</b>                                      |  |            | 4.0  |         |     |
| <b>Learning profile</b>                            | academic   | <b>Assessment form</b>                                   |  |            |  |         |     |
| <b>Conducting unit</b>                             | Faculty of Chemistry   |  |  |            |  |         |     |
| <b>Name and surname of lecturer (lecturers)</b>    | <b>Subject supervisor</b>  |  | dr hab. Joanna Makowska  |            |  |         |     |
|  | <b>Teachers</b>  |  | dr hab. Joanna Makowska<br>dr hab. Dariusz Wyrzykowski<br>dr Aleksandra Tesmar<br>dr hab. Sylwia Freza<br>dr Lidia Chomicz-Mańka<br>dr hab. Adam Sieradzan<br>dr hab. Monika Paszkiewicz |            |  |         |     |
| <b>Lesson types</b>                                | <b>Lesson type</b>   | Lecture  | Tutorial   | Laboratory | Project  | Seminar | SUM |
|  | <b>Number of study hours</b>   | 0.0  | 0.0  | 0.0        | 0.0  | 30.0    | 30  |
|  | E-learning hours included: 0.0   |  |  |            |  |         |     |
| <b>Learning activity and number of study hours</b> | <b>Learning activity</b>   | Participation in didactic classes included in study plan | Participation in consultation hours  | Self-study |  | SUM     |     |
|  | <b>Number of study hours</b>   | 30   | 5.0  | 65.0       |  | 100     |     |
| <b>Subject objectives</b>                          | Development of in-depth skills in preparing and presenting oral presentations in Polish, mainly in the field of subjects related to master thesis<br>Preparation for independent collection and processing of scientific information based on literature searches<br>Knowledge of the principles of preparing and writing substantive and formally correct simple scientific publications, with particular emphasis on the master thesis.<br>Monitoring the progress of each student's project work in the framework of the parallel masters' workshop |  |  |            |  |         |     |

| Learning outcomes | Course outcome   | Subject outcome   | Method of verification                       |
|-------------------|--|---|--|
|                   | [BCHMU2_U05] Is able to choose and apply, based on the literature of chemical sciences in Polish and English, appropriate methods and tools for solving problems in chemistry and related sciences.  | Students argue their conclusions in chemistry, interpret and analyze related information with fundamental chemical and economic laws. - By reading scientific texts, the student learns to analyze and synthesize information, extract key concepts and understand complex issues.  | [SU5] implementation of a problem task       |
|                   | [BCHMU2_K08] Is willing to develop appropriate best practices and take up challenges in the professional and public sphere, taking into account the principles of professional ethics.   | Student: <ul style="list-style-type: none"> <li>• remains critical in expressing opinions and remains open to the opinion of the environment</li> <li>• is active in expanding knowledge on the subject related to the undertaken master's thesis and understands the need to constantly expand knowledge and skills</li> <li>• works independently on exploring English-language literature on the topic of the master's thesis and problem tasks</li> <li>• engages in scientific discussions</li> <li>• demonstrates responsibility for the reliability of the scientific information provided</li> </ul>  | [SK1] oral statement/conversation/discussion |
|                   | [BCHMU2_W06] Knows and understands tasks in the field of chemistry, environmental protection and economics that are the subject of human activity to the extent that allows independent work on a research, scientific and measuring position. | Student: <ul style="list-style-type: none"> <li>• demonstrates basic knowledge of legal and ethical conditions related to scientific activity, including protection of intellectual property and copyright;</li> <li>• demonstrates general knowledge of the broadly understood chemistry and biochemistry of amino acids, peptides and proteins and their derivatives.</li> <li>• presents extended knowledge about current directions of development and the latest scientific achievements in the field of the subject of the master's thesis he has undertaken.</li> </ul>  | [SW2] presentation/project/paper/report      |
|                   | [BCHMU2_U07] Is able to use English in chemistry in accordance with the requirements specified for level B2+ of the Common European Framework of Reference for Languages and specialised terminology.  | Student: <ul style="list-style-type: none"> <li>• shows substantive preparation to use chemical literature</li> <li>• demonstrates enhanced ability to understand scientific texts in the field of chemistry in both Polish and English;</li> <li>• develops and uses literature information on the scientific subject matter of his experimental work in the master's workshop, in order to present them in the master's thesis being prepared;</li> <li>• logical and clear presentation of the topic in the form of an oral presentation with a multimedia presentation;</li> <li>• participates in the discussion in a substantive way and shows interest in the topics presented by other speakers.</li> </ul> | [SU2] presentation/project/paper/report      |

|  | <table border="1"> <thead> <tr> <th>Course outcome</th> <th>Subject outcome</th> <th>Method of verification</th> </tr> </thead> <tbody> <tr> <td>[BCHMU2_W07] Knows and understands legal and economic systems of organization and management of human resources, patent information and intellectual property resources related to the chemical industry and other sectors of the economy.</td> <td>Student knows the basic concepts and principles related to the protection of intellectual property. Knows the principles of copyright law, patent law, trademark law, industrial design law, and trade secret law</td> <td>[SW3] text preparation/written work</td> </tr> <tr> <td>[BCHMU2_U03] Is able to present, based on the current state of knowledge, scientific discoveries and the results of own research in the field of chemical and economic sciences, by skilfully conducting debates and public speaking.</td> <td>-Student is able to prepare a speech or written work (report, description) both in Polish and English, correctly arguing his or her conclusions in the field of chemistry. Knows how to correctly interpret and analyze related information with basic chemical laws. Respects the knowledge of co-discussants.</td> <td>[SU2] presentation/project/paper/report</td> </tr> <tr> <td>[BCHMU2_K04] Is willing to properly assess the acquired knowledge, respect and disseminate it in order to solve specific cognitive and practical issues.</td> <td>-Student is prepared to evaluate the acquired knowledge, respect it and disseminate it<br/>- Student knows that reliable knowledge allows for effective solving of cognitive and practical issues.</td> <td>[SK5] implementation of a problem task</td> </tr> <tr> <td>[BCHMU2_U02] Is able to define her/his interests, develop them within the chosen direction and in connection with the subject of her/his master's thesis by implementing the process of self-education and planning her/his professional career.</td> <td>- Student uses his knowledge in practice. He works on projects, experiments and is creative.<br/>- Student knows his or her strengths. Knows how to conduct professional exploration in the future. Is able to regularly assess his progress and adapt his actions to new challenges</td> <td>[SU5] implementation of a problem task</td> </tr> </tbody> </table> | Course outcome                          | Subject outcome  | Method of verification        | [BCHMU2_W07] Knows and understands legal and economic systems of organization and management of human resources, patent information and intellectual property resources related to the chemical industry and other sectors of the economy. | Student knows the basic concepts and principles related to the protection of intellectual property. Knows the principles of copyright law, patent law, trademark law, industrial design law, and trade secret law | [SW3] text preparation/written work | [BCHMU2_U03] Is able to present, based on the current state of knowledge, scientific discoveries and the results of own research in the field of chemical and economic sciences, by skilfully conducting debates and public speaking. | -Student is able to prepare a speech or written work (report, description) both in Polish and English, correctly arguing his or her conclusions in the field of chemistry. Knows how to correctly interpret and analyze related information with basic chemical laws. Respects the knowledge of co-discussants. | [SU2] presentation/project/paper/report | [BCHMU2_K04] Is willing to properly assess the acquired knowledge, respect and disseminate it in order to solve specific cognitive and practical issues. | -Student is prepared to evaluate the acquired knowledge, respect it and disseminate it<br>- Student knows that reliable knowledge allows for effective solving of cognitive and practical issues. | [SK5] implementation of a problem task | [BCHMU2_U02] Is able to define her/his interests, develop them within the chosen direction and in connection with the subject of her/his master's thesis by implementing the process of self-education and planning her/his professional career. | - Student uses his knowledge in practice. He works on projects, experiments and is creative.<br>- Student knows his or her strengths. Knows how to conduct professional exploration in the future. Is able to regularly assess his progress and adapt his actions to new challenges | [SU5] implementation of a problem task |
|--|--|---|--|-------------------------------|--|---|-------------------------------------|---|---|---|--|---|--|--|---|--|
| Course outcome   | Subject outcome  | Method of verification                  |  |                               |  |   |                                     |   |   |   |  |   |  |  |   |  |
| [BCHMU2_W07] Knows and understands legal and economic systems of organization and management of human resources, patent information and intellectual property resources related to the chemical industry and other sectors of the economy.       | Student knows the basic concepts and principles related to the protection of intellectual property. Knows the principles of copyright law, patent law, trademark law, industrial design law, and trade secret law  | [SW3] text preparation/written work     |  |                               |  |   |                                     |   |   |   |  |   |  |  |   |  |
| [BCHMU2_U03] Is able to present, based on the current state of knowledge, scientific discoveries and the results of own research in the field of chemical and economic sciences, by skilfully conducting debates and public speaking.            | -Student is able to prepare a speech or written work (report, description) both in Polish and English, correctly arguing his or her conclusions in the field of chemistry. Knows how to correctly interpret and analyze related information with basic chemical laws. Respects the knowledge of co-discussants.  | [SU2] presentation/project/paper/report |  |                               |  |   |                                     |   |   |   |  |   |  |  |   |  |
| [BCHMU2_K04] Is willing to properly assess the acquired knowledge, respect and disseminate it in order to solve specific cognitive and practical issues.   | -Student is prepared to evaluate the acquired knowledge, respect it and disseminate it<br>- Student knows that reliable knowledge allows for effective solving of cognitive and practical issues.  | [SK5] implementation of a problem task  |  |                               |  |   |                                     |   |   |   |  |   |  |  |   |  |
| [BCHMU2_U02] Is able to define her/his interests, develop them within the chosen direction and in connection with the subject of her/his master's thesis by implementing the process of self-education and planning her/his professional career. | - Student uses his knowledge in practice. He works on projects, experiments and is creative.<br>- Student knows his or her strengths. Knows how to conduct professional exploration in the future. Is able to regularly assess his progress and adapt his actions to new challenges  | [SU5] implementation of a problem task  |  |                               |  |   |                                     |   |   |   |  |   |  |  |   |  |
| Subject contents   | <p>Rules for searching, collecting and processing scientific information based on various types of literature sources and databases in Polish and English.</p> <p>Principles of written preparation and editing of substantive and formally correct simple scientific publications, with particular emphasis on the thesis in the field of exact and natural sciences.</p> <p>Rules for preparing substantive and formally correct oral presentations at the popular science level in Polish, using multimedia techniques</p>  |   |  |                               |  |   |                                     |   |   |   |  |   |  |  |   |  |
| Prerequisites and co-requisites  |  |   |  |                               |  |   |                                     |   |   |   |  |   |  |  |   |  |
| Assessment methods and criteria  | <table border="1"> <thead> <tr> <th>Subject passing criteria</th> <th>Passing threshold</th> <th>Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td>Preparation and presentation of several speeches based on current literature reports on research topics</td> <td>100.0%</td> <td>100.0%</td> </tr> </tbody> </table>   | Subject passing criteria                | Passing threshold  | Percentage of the final grade | Preparation and presentation of several speeches based on current literature reports on research topics  | 100.0%  | 100.0%                              |   |   |   |  |   |  |  |   |  |
| Subject passing criteria   | Passing threshold  | Percentage of the final grade           |  |                               |  |   |                                     |   |   |   |  |   |  |  |   |  |
| Preparation and presentation of several speeches based on current literature reports on research topics  | 100.0%   | 100.0%                                  |  |                               |  |   |                                     |   |   |   |  |   |  |  |   |  |
| Recommended reading  | <table border="1"> <tbody> <tr> <td>Basic literature</td> <td> <p>Literature required to pass the course</p> <p>A.1. Literature used during classes:</p> <p>Books and scientific articles related to the topic of master thesis</p> <p>A.2. Literature for individual studies:</p> <p>Books and scientific articles related to the topic of master thesis</p> </td> </tr> <tr> <td>Supplementary literature</td> <td> <p>Extracurricular readings</p> <p>Books and scientific articles related to the topic of master thesis</p> </td> </tr> <tr> <td>eResources addresses</td> <td>Adresy na platformie eNauczenie:</td> </tr> </tbody> </table>  | Basic literature                        | <p>Literature required to pass the course</p> <p>A.1. Literature used during classes:</p> <p>Books and scientific articles related to the topic of master thesis</p> <p>A.2. Literature for individual studies:</p> <p>Books and scientific articles related to the topic of master thesis</p> | Supplementary literature      | <p>Extracurricular readings</p> <p>Books and scientific articles related to the topic of master thesis</p>   | eResources addresses  | Adresy na platformie eNauczenie:    |   |   |   |  |   |  |  |   |  |
| Basic literature   | <p>Literature required to pass the course</p> <p>A.1. Literature used during classes:</p> <p>Books and scientific articles related to the topic of master thesis</p> <p>A.2. Literature for individual studies:</p> <p>Books and scientific articles related to the topic of master thesis</p>   |   |  |                               |  |   |                                     |   |   |   |  |   |  |  |   |  |
| Supplementary literature   | <p>Extracurricular readings</p> <p>Books and scientific articles related to the topic of master thesis</p>   |   |  |                               |  |   |                                     |   |   |   |  |   |  |  |   |  |
| eResources addresses   | Adresy na platformie eNauczenie:   |   |  |                               |  |   |                                     |   |   |   |  |   |  |  |   |  |

|  |                |
|--|----------------|
| Example issues/<br>example questions/<br>tasks being completed |                |
| Work placement   | Not applicable |

Document generated electronically. Does not require a seal or signature.