

## Subject card

|                                             |                                                                                               |                                                          |                                         |                                     |                        |            |     |
|---------------------------------------------|-----------------------------------------------------------------------------------------------|----------------------------------------------------------|-----------------------------------------|-------------------------------------|------------------------|------------|-----|
| Subject name and code                       | Chemistry in the media space II, PG_00121247                                                  |                                                          |                                         |                                     |                        |            |     |
| Field of study                              | Chemical Business, Chemistry, Environmental Protection                                        |                                                          |                                         |                                     |                        |            |     |
| Date of commencement of studies             | February 2026                                                                                 |                                                          | Academic year of realisation of subject |                                     | 2026/2027              |            |     |
| Education level                             | Master's studies                                                                              |                                                          | Subject group                           |                                     | Optional subject group |            |     |
| Mode of study                               | full-time studies                                                                             |                                                          | Mode of delivery                        |                                     | at the university      |            |     |
| Year of study                               | 1                                                                                             |                                                          | Language of instruction                 |                                     | Polish                 |            |     |
| Semester of study                           | 2                                                                                             |                                                          | ECTS credits                            |                                     | 2.0                    |            |     |
| Learning profile                            | academic                                                                                      |                                                          | Assessment form                         |                                     | credit                 |            |     |
| Conducting unit                             | Faculty of Chemistry -> Rector                                                                |                                                          |                                         |                                     |                        |            |     |
| Name and surname of lecturer (lecturers)    | Subject supervisor                                                                            |                                                          | dr hab. Artur Gieldoń                   |                                     |                        |            |     |
|                                             | Teachers                                                                                      |                                                          |                                         |                                     |                        |            |     |
| Lesson types                                | Lesson type                                                                                   | Lecture                                                  | Tutorial                                | Laboratory                          | Project                | Seminar    | SUM |
|                                             | Number of study hours                                                                         | 0.0                                                      | 0.0                                     | 30.0                                | 0.0                    | 0.0        | 30  |
|                                             | E-learning hours included: 0.0                                                                |                                                          |                                         |                                     |                        |            |     |
| Learning activity and number of study hours | Learning activity                                                                             | Participation in didactic classes included in study plan |                                         | Participation in consultation hours |                        | Self-study | SUM |
|                                             | Number of study hours                                                                         | 30                                                       |                                         | 5.0                                 |                        | 15.0       | 50  |
| Subject objectives                          | The use of available electronic forms of media to promote and disseminate chemical knowledge. |                                                          |                                         |                                     |                        |            |     |

| Learning outcomes | Course outcome                                                                                                                                                                                                | Subject outcome                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Method of verification                                                                 |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
|                   | [CHEMMU2_W02] Has extended and in-depth knowledge in the field of basic chemistry.                                                                                                                            | The student recognizes the appropriate method of popularization of chemical knowledge and assigns them to the selected topic/problem, is able to characterize the advantages of the selected form of multimedia communication. The student is able to verify whether the given information is true. The student is able to explain the differences in usefulness and possibilities between different media depending on the content conveyed and the platform used platform.                                                                                                                                                            | [SW2] presentation/project/paper/report<br>[SW5] implementation of a problem task      |
|                   | [CHEMMU2_K07] Can think and act in an entrepreneurial manner.                                                                                                                                                 | The student understands the differences in individual and team preparation of material popularizing chemical knowledge and its publication on the Internet. The student understands the importance of critical evaluation of the existing knowledge, demonstrates readiness to constantly expand it and to consult competent experts.                                                                                                                                                                                                                                                                                                   | [SK5] implementation of a problem task                                                 |
|                   | [CHEMMU2_W15] Formulates general principles for creating and developing selected forms of individual entrepreneurship enabling the use of knowledge coming from science.                                      | The student recognizes the appropriate method of popularization of chemical knowledge and assigns them to the selected topic/problem, is able to characterize the advantages of the selected form of multimedia communication. The student is able to verify whether the given information is true. The student is able to explain the differences in usefulness and possibilities between different media depending on the content conveyed and the platform used.                                                                                                                                                                     | [SW5] implementation of a problem task                                                 |
|                   | [CHEMMU2_K06] Undertakes research tasks consciously and responsibly, understanding the social aspects of the practical application of the acquired knowledge and skills and the responsibility related to it. | The student understands the differences in individual and team preparation of material popularizing chemical knowledge and its publication on the Internet. The student understands the importance of critical evaluation of the existing knowledge, demonstrates readiness to constantly expand it and to consult competent experts.                                                                                                                                                                                                                                                                                                   | [SK2] presentation/project/paper/report<br>[SK5] implementation of a problem task      |
|                   | [CHEMMU2_U07] Defines and implements the directions of own further education.                                                                                                                                 | The student is able to correctly select and apply appropriate methods and tools appropriate to the purpose of the media content to be communicated. Students are able to effectively plan and organize their work, independently acquiring and consolidating knowledge in an orderly and systematic manner, using information technology. Student is able to correct erroneous information indicating the place of their falsification. Student is able to in an advanced degree use gimp, avogadro and pymol programs. The student is able to skillfully conduct a discussion, present his own concept and justify one's own position. | [SU1] oral statement/conversation/discussion<br>[SU5] implementation of a problem task |

|                                                                                                                                                                                                      | <table><tr><th>Course outcome</th><th>Subject outcome</th><th>Method of verification</th></tr><tr><td>[CHEMMU2_U08] Prepares and presents oral presentations in various fields of chemistry in Polish and English, using acquired knowledge and skills as well as basic sources of scientific information.</td><td>The student is able to correctly select and apply appropriate methods and tools appropriate to the purpose of the media content to be communicated.<br/>Students are able to effectively plan and organize their work, independently acquiring and consolidating knowledge in an orderly and systematic manner, using information technology.<br/>Student is able to correct erroneous information indicating the place of their falsification. Student is able to in an advanced degree use gimp, avogadro and pymol programs.<br/>The student is able to skillfully conduct a discussion, present his own concept and justify one's own position.</td><td>[SU1] oral statement/conversation/discussion</td></tr></table>                                                                                                                                                                               | Course outcome                               | Subject outcome                                  | Method of verification        | [CHEMMU2_U08] Prepares and presents oral presentations in various fields of chemistry in Polish and English, using acquired knowledge and skills as well as basic sources of scientific information.                                                                                                                                                                                                                                                                                                       | The student is able to correctly select and apply appropriate methods and tools appropriate to the purpose of the media content to be communicated.<br>Students are able to effectively plan and organize their work, independently acquiring and consolidating knowledge in an orderly and systematic manner, using information technology.<br>Student is able to correct erroneous information indicating the place of their falsification. Student is able to in an advanced degree use gimp, avogadro and pymol programs.<br>The student is able to skillfully conduct a discussion, present his own concept and justify one's own position. | [SU1] oral statement/conversation/discussion |                                 |       |       |                                                                               |       |       |                           |       |       |  |  |
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| Course outcome                                                                                                                                                                                       | Subject outcome                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Method of verification                       |                                                  |                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                              |                                 |       |       |                                                                               |       |       |                           |       |       |  |  |
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| Subject contents                                                                                                                                                                                     | <p>During the course, modern in-depth forms of communicating chemical knowledge using the Internet will be discussed (editing of advanced social media articles, multimedia preparation, advanced digital image processing).</p> <p>Publishing advanced scientific content in a way that is accessible to any audience using molecular modeling software (avogadro, pymol) and also ball models, as well as filming and visualizing chemical experiments. The class will discuss the poster as a static means of conveying information as well as the problem of verifying posted information and the appropriate selection of sources to ensure their reliability and credibility.</p> <p>The knowledge gained will then be used by students to develop electronic forms of media to promote and disseminate chemical knowledge, so that they effectively focus attention and are designed to reach a specific audience.</p> <p>Electronic media have long ceased to be solely a means of conveying information. They are now a melting pot of variety aimed at focusing the attention of the recipient on the form of the message. Therefore, the information prepared must be designed to reach a specific audience.</p> |                                              |                                                  |                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                              |                                 |       |       |                                                                               |       |       |                           |       |       |  |  |
| Prerequisites and co-requisites                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                              |                                                  |                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                              |                                 |       |       |                                                                               |       |       |                           |       |       |  |  |
| Assessment methods and criteria                                                                                                                                                                      | <table><tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr><tr><td>observation and evaluation of student activity during classes</td><td>51.0%</td><td>10.0%</td></tr><tr><td>making a popular science poster</td><td>51.0%</td><td>30.0%</td></tr><tr><td>making posts placed on websites with graphics made using the learned programs</td><td>51.0%</td><td>30.0%</td></tr><tr><td>making a multimedia video</td><td>51.0%</td><td>30.0%</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Subject passing criteria                     | Passing threshold                                | Percentage of the final grade | observation and evaluation of student activity during classes                                                                                                                                                                                                                                                                                                                                                                                                                                              | 51.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 10.0%                                        | making a popular science poster | 51.0% | 30.0% | making posts placed on websites with graphics made using the learned programs | 51.0% | 30.0% | making a multimedia video | 51.0% | 30.0% |  |  |
| Subject passing criteria                                                                                                                                                                             | Passing threshold                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Percentage of the final grade                |                                                  |                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                              |                                 |       |       |                                                                               |       |       |                           |       |       |  |  |
| observation and evaluation of student activity during classes                                                                                                                                        | 51.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 10.0%                                        |                                                  |                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                              |                                 |       |       |                                                                               |       |       |                           |       |       |  |  |
| making a popular science poster                                                                                                                                                                      | 51.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 30.0%                                        |                                                  |                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                              |                                 |       |       |                                                                               |       |       |                           |       |       |  |  |
| making posts placed on websites with graphics made using the learned programs                                                                                                                        | 51.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 30.0%                                        |                                                  |                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                              |                                 |       |       |                                                                               |       |       |                           |       |       |  |  |
| making a multimedia video                                                                                                                                                                            | 51.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 30.0%                                        |                                                  |                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                              |                                 |       |       |                                                                               |       |       |                           |       |       |  |  |
| Recommended reading                                                                                                                                                                                  | <table><tr><td>Basic literature</td><td>Jones L, Atkins P, Laverman L. General Chemistry</td></tr><tr><td>Supplementary literature</td><td>Jędrzykowski J. Prezentacje multimedialne w pracy nauczyciela, Zielona Góra, Oficyna Wydawnicza Uniwersytetu Zielonogórskiego,<br/>Richard H. Social Media: Effective Strategies For Dominating Social Media Marketing with Facebook, Twitter, YouTube, Instagram, LinkedIn, and Pinterest<br/>Falls J., Deckers E. Media społecznościowe bez ściemy. Jak kreować markę.<br/>Witkowski B. GIMP. Poznaj świat grafiki komputerowej.<br/>Boniecki J. Smartfonowy zawrót głowy (czyli fotografowanie smartfonem).</td></tr><tr><td>eResources addresses</td><td></td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Basic literature                             | Jones L, Atkins P, Laverman L. General Chemistry | Supplementary literature      | Jędrzykowski J. Prezentacje multimedialne w pracy nauczyciela, Zielona Góra, Oficyna Wydawnicza Uniwersytetu Zielonogórskiego,<br>Richard H. Social Media: Effective Strategies For Dominating Social Media Marketing with Facebook, Twitter, YouTube, Instagram, LinkedIn, and Pinterest<br>Falls J., Deckers E. Media społecznościowe bez ściemy. Jak kreować markę.<br>Witkowski B. GIMP. Poznaj świat grafiki komputerowej.<br>Boniecki J. Smartfonowy zawrót głowy (czyli fotografowanie smartfonem). | eResources addresses                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                              |                                 |       |       |                                                                               |       |       |                           |       |       |  |  |
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| eResources addresses                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                              |                                                  |                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                              |                                 |       |       |                                                                               |       |       |                           |       |       |  |  |
| Example issues/<br>example questions/<br>tasks being completed                                                                                                                                       | <ul style="list-style-type: none"><li>- making a multimedia video,</li><li>- making posts placed on websites with graphics made using the learned programs,</li><li>- making a popular science poster</li><li>- observation and evaluation of student activity during classes</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                              |                                                  |                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                              |                                 |       |       |                                                                               |       |       |                           |       |       |  |  |
| Work placement                                                                                                                                                                                       | Not applicable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                              |                                                  |                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                              |                                 |       |       |                                                                               |       |       |                           |       |       |  |  |

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