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| <b>Course ID:</b><br>HRH409                               | <b>Course name: RADIOCHEMICAL TECHNIQUES AND APPLICATIONS</b>   |   |                        |
| <b>Cycle: FIRST</b>                                       | <b>Year: FOURTH</b>   | <b>Semester: VII</b>                          | <b>ECTS credits: 3</b> |
| <b>Course status: ELECTIVE</b>                            |   | <b>Total course hours: 30</b><br>Lectures: 30 |                        |
| <b>Teaching participants:</b>                             | <b>Teachers and associates with expertise in the field to which the subject belongs</b>   |   |                        |
| <b>Prerequisite for enrollment:</b>                       | -   |   |                        |
| <b>Course aims:</b>                                       | The aim of the module is to explain to students preparing radioactive components for different measurements, and that explain the basic principles and measurement.   |   |                        |
| <b>Thematic course units:</b>                             | <ol style="list-style-type: none"><li>1. Design and properties of radionuclides</li><li>2. Selecting the appropriate radionuclide</li><li>3. Preparation, analysis, control and stability of radioactive components</li><li>4. Measurement of the intensity of the air and flux</li><li>5. Diffusion and kinetic isotopic effect</li><li>6. Radiochemical separation techniques</li><li>7. Measuring techniques for low radiation</li><li>8. Methods for determining radioactivity in biological material</li></ol> |   |                        |
| <b>Learning outcomes:</b>                                 | Knowledge:<br>Students will gain knowledge of radiochemical techniques and their applications.<br>Skills:<br>Ability to design different radionuclides.<br>Competences:<br>Application of radiochemical techniques in the analysis of different samples.  |   |                        |
| <b>Teaching methodology:</b>                              | Lectures (oral presentation and interactive classes)  |   |                        |
| <b>Assessment methods and grading system<sup>1</sup>:</b> | <b>Grading criteria</b>   |   |                        |
|   | Criteria  | Maximal score                                 | Required score         |
|   | 1. Class attendance   | 5   | 3                      |
|   | 2. Class activities   | 15  | 8                      |
|   | 3. Midterms   | 2 × 20  | 2 × 11                 |
|   | 4. Final exam   | 40  | 22                     |
| Total   | 100   | 55  |                        |
| <b>Scores and grading</b>                                 |   |   |                        |
| Score   | Grade   | Grade   |                        |

<sup>1</sup>The grading structure for each subject is determined by the Council of the organizational unit before the beginning of the academic year in which the subject is taught as per Article 64, paragraph 6 of the Law on Higher Education of Sarajevo Canton

|        | (BiH) | (ECTS) |
|--------|-------|--------|
| < 55   | 5     | F, FX  |
| 55-64  | 6     | E      |
| 65-74  | 7     | D      |
| 75-84  | 8     | C      |
| 85-94  | 9     | B      |
| 95-100 | 10    | A      |

  

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| <b>Literature<sup>2</sup>:</b> | <p><b>Mandatory literature:</b></p> <ol style="list-style-type: none"> <li>1. W. Loveland, D.J. Morrissey, G.T. Seaborg, Modern Nuclear Chemistry, Wiley Inc.USA, 2006</li> <li>2. M. J.Welch, C. S.Redvanly, Handbook of Radiopharmaceuticals, Radiochemistry and Applications, Wiley Inc.USA, 2003</li> <li>3. A.Hebrang, R. Klarić-Čustović, Radiologija, Medicinska naklada, Zagreb, 2007</li> </ol> <p><b>Supplementary literature:</b></p> <ol style="list-style-type: none"> <li>1. S.Vallabhajosula, Molecular Imaging, Radiopharmaceuticals for PET and SPECT, Springer, 2009</li> </ol> |
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<sup>2</sup>The Senate of the higher education institution, as an institution, or the Council of the organizational unit of the higher education institution, as a public institution, determines by a special decision, which is published on its website before the beginning of the academic year obligatory, mandatory and recommended textbooks and manuals, as well as other recommended literature based on which exams are prepared and taken as per Article 56, paragraph 3 of the Law on Higher Education of the Sarajevo Canton