



<b>Course ID:</b> HAH474	<b>Course name: ANALYTICAL QUALITY CONTROL</b>		
<b>Cycle: FIRST</b>	<b>Year: FOURTH</b>	<b>Semester: VIII</b>	<b>ECTS credits: 4</b>
<b>Course status: MANDATORY</b>		<b>Total course hours: 60</b> Lectures: 30 Laboratory: 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>	Acquisition of basic knowledge in the field of certification, accreditation and introduction of a quality system in the chemical testing laboratory and quality assessments of different products. Enabling students to independently prepare a testing laboratory for certification and accreditation.		
<b>Thematic course units:</b>	<ol style="list-style-type: none"><li>1. Introduction to quality - concept and definitions, different aspects of quality</li><li>2. Quality control of input raw materials, intermediates and finished products</li><li>3. Important features that are assessed by quality control</li><li>4. International standards for a quality management system, ISO 9001</li><li>5. Management system documentation, quality manual, quality policy</li><li>6. Quality management, quality loop, planning, implementation</li><li>7. Quality control, quality assurance. Quality system certification</li><li>8. Midterm</li><li>9. Testing laboratories accreditation according to ISO 17025</li><li>10. Management system requirements</li><li>11. Technical requirements ISO 17025</li><li>12. Technical requirements ISO 17025</li><li>13. Testing laboratory accreditation process</li><li>14. Sampling, sampling of solid, liquid and gaseous samples</li><li>15. Legislation</li></ol>		
<b>Learning outcomes:</b>	After completing the course, the student will be able to: - define the elements of the quality system in the testing		

	<p>laboratory</p> <ul style="list-style-type: none"> <li>- distinguish between quality control and quality assurance</li> <li>- assess the quality of different test materials</li> <li>- prepare a testing laboratory for certification and accreditation according to ISO methods</li> <li>- recognize the importance and requirements for laboratory accreditation</li> <li>- find and interpret information in national and international documents</li> </ul>																																													
<b>Teaching methodology:</b>	<p>Lectures Laboratory exercises</p>																																													
<b>Assessment methods and grading system<sup>1</sup>:</b>	<table border="1"> <thead> <tr> <th colspan="3">Grading criteria</th> </tr> <tr> <th>Criteria</th> <th>Maximal score</th> <th>Required score</th> </tr> </thead> <tbody> <tr> <td>1. Class attendance</td> <td>5</td> <td>3</td> </tr> <tr> <td>2. Class activities*</td> <td>15</td> <td>8</td> </tr> <tr> <td>3. Midterms</td> <td>40</td> <td>22</td> </tr> <tr> <td>4. Final exam</td> <td>40</td> <td>22</td> </tr> <tr> <td>Total</td> <td>100</td> <td>55</td> </tr> </tbody> </table> <p>* Class activity is scored through the engagement of students in laboratory exercises</p> <table border="1"> <thead> <tr> <th colspan="3">Scores and grading</th> </tr> <tr> <th>Score</th> <th>Grade (BiH)</th> <th>Grade (ECTS)</th> </tr> </thead> <tbody> <tr> <td>&lt; 55</td> <td>5</td> <td>F, FX</td> </tr> <tr> <td>55-64</td> <td>6</td> <td>E</td> </tr> <tr> <td>65-74</td> <td>7</td> <td>D</td> </tr> <tr> <td>75-84</td> <td>8</td> <td>C</td> </tr> <tr> <td>85-94</td> <td>9</td> <td>B</td> </tr> <tr> <td>95-100</td> <td>10</td> <td>A</td> </tr> </tbody> </table>	Grading criteria			Criteria	Maximal score	Required score	1. Class attendance	5	3	2. Class activities*	15	8	3. Midterms	40	22	4. Final exam	40	22	Total	100	55	Scores and grading			Score	Grade (BiH)	Grade (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>Mandatory literature:</p> <ol style="list-style-type: none"> <li>1. V. V. Velagić, Analitička kontrola kvaliteta, Studentska štamparija Univerziteta, Sarajevo 1997.</li> <li>2. M. Kaštelan-Macan, Kemijska analiza u sustavu kvalitete, Školska knjiga, Zagreb, 2003.</li> <li>3. V. Barwick (Ed), Eurachem/CITAC Guide: Guide to Quality in Analytical Chemistry: An Aid to Accreditation (3rd ed. 2016). ISBN 978-0-948926-32-7.</li> <li>4. B. Magnusson and U. Örnemark (eds.) Eurachem</li> </ol>																																													

<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

<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

Guide: The fitness for purpose of analytical methods –  
A laboratory guide to method validation and related  
topics (2nd ed. 2014). ISBN 978-91-87461-59-0

Supplementary literature:

1. BAS EN ISO/IEC 17025
2. BAS EN ISO 9001