Course ID: HAHI03	**Course name: ANALYTICAL METHODS IN FORENSIC CHEMISTRY**		
Cycle: SECOND	**Year: FIRST**	**Semester: I**	**ECTS credits: 4**
Course status: ELECTIVE		**Total course hours: 60** Lectures: 30 Laboratory: 30	
Teaching participants:	**Teachers and associates with expertise in the field to which the subject belongs**		
Prerequisite for enrollment:	-		
Course aims:	Introducing students to the application of analytical techniques in order to solve forensic problems. Acquisition of basic knowledge in the process of identification and determination of forensic samples. Developing teamwork during forensic investigation.		
Thematic course units:	1. Introduction to forensic chemistry, history of forensic chemistry 2. Possibilities of forensic laboratory. Type and kind of forensic analysis 3. Collection and preparation of the forensic sample 4. Development of fingerprint analysis 5. Fingerprint chemistry 6. Examination of the authenticity of suspicious documents. Chemical analysis of suspicious documents. Forgeries 7. Soil analysis - forensic sample 8. Midterm 9. Some simple tests on drug analysis. Analysis of controlled substances 10. Fibers - identification and comparison. Forensic analysis of unknown substances 11. Paints and coatings. Pigments, fillers and additives 12. Analysis of alcohol in breath, blood and other body fluids 13. Fire sample testing: Fire chemistry. Conditions for flame occurrence 14. Flammable liquids: Headspace adsorption, Solid-phase microextraction (SPME), distillation and solvent extraction. Analysis: GC, GC-MS, IR/FT-IR 15. Explosions. Identification of explosives		
Learning outcomes:	After completing the course, the student will be able to:		

<table>
<tr><td></td><td>- define the basic terms used in forensic analysis
- identify the forensic sample
- select analytical techniques for the analysis of certain forensic parameters
- apply analytical techniques for the analysis of certain forensic parameters
- generate forensic conclusions based on the obtained results</td></tr>
<tr><td>Teaching methodology:</td><td>Lectures
Laboratory exercises</td></tr>
<tr><td>Assessment methods and grading system[1]:</td><td>
<table>
<tr><td colspan="3">Grading criteria</td></tr>
<tr><td>Criteria</td><td>Maximal score</td><td>Required score</td></tr>
<tr><td>1. Class attendance</td><td>5</td><td>3</td></tr>
<tr><td>2. Class activities*</td><td>20</td><td>11</td></tr>
<tr><td>3. Midterms</td><td>35</td><td>19</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>
<tr><td colspan="3">* Class activity is scored through the engagement of students in laboratory exercises</td></tr>
<tr><td colspan="3">Scores and grading</td></tr>
<tr><td>Score</td><td>Grade (BiH)</td><td>Grade (ECTS)</td></tr>
<tr><td>< 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>
</table>
</td></tr>
<tr><td>Literature[2]:</td><td>Mandatory literature:
1. R. Maksimović, M. Bošković, U. Todorić, Metode fizike, hemije i fizičke hemije u kriminalistici, Policijska akademija, Beograd 1998.
2. L. Kobilinsky (ed.) Forensic Chemistry Handbook, John Wiley & Sons, Inc., Hoboken, New Jersey, 2012
3. J. A. Siegel (ed.), Forensic Chemistry Fundamentals and Applications, John Wiley & Sons, Ltd, UK, 2016

Supplementary literature:
Scientific/research papers in the field of forensic chemistry.</td></tr>
</table>

[1] 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

[2] 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