**COURSE SYLLABUS**

***Specialization Practice***

**1. Program identification details**

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| --- | --- |
| 1.1 Higher education institution | „Ovidius” University of Constanta |
| 1.2 Faculty | Faculty Mathematics and Computer Science |
| 1.3 Department | Mathematics and Computer Science |
| 1.4 Field of studies | Computer Science |
| 1.5 Cycle of studies (degree) | Master |
| 1.6 Degree program/qualification | Cyber Security and Machine Learning |
| 1.7 Academic year | 2022-2023 |

**2. Course identification details**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 2.1 Course title | | | Specialization Practice | | | | |
| 2.2 Course code | | | FMI.CSML.I.2.09 | | | | |
| 2.3 Instructor | | | - | | | | |
| 2.4 Teaching assistant | | | Conf. Dr. Eugen Petac | | | | |
| 2.5 Year | I | 2.6 Semester | 2 | 2.7. Evaluation type | C | 2.8 Course type \*/\*\* | DSI/DI |

*\* DF – fundamental course, DD – field course, DS – specialty course, DC – complementary course, DAP – advanced study course, DSI – synthesis course, DCA – advanced knowledge course.*

*\*\* DI – mandatory course; DO – optional course.*

**3. Estimated workload (hours per semester)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 3.1 Number of teaching hours/week | | 2 | of which:  3.2 course | - | 3.3 applications*\*\*\*L* | 2 |
| 3.4 Total of teaching hours within the program/semester | | 28 | of which:  3.5 lecture | - | 3.6 seminar | 28 |
| **3.7 Student workload for individual study** | | | | | | 22 |
| ***Distribution of workload*** | | | | | | [hours] |
| Individual study of texbooks, handbooks/reader, bibliography and notes | | | | | | 0 |
| Additional research (library, electronic resources, fieldwork) | | | | | | 8 |
| Homework (preparing seminar presentations, portfolios, critical essays, research papers, etc.) | | | | | | 8 |
| Individual consultations (optional) | | | | | | 0 |
| Evaluations / exams | | | | | | 6 |
| Other activities | | | | | | 0 |
| **3.8 Total hours per semester** | *28+22=50* | |  |  |  |  |
| **3.9 Number of credits** | 2 | |  |  |  |  |

*\*\*\* S - seminar; L - laboratory; P - project*

**4. Prerequisites (if any)**

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| 4.1 Curriculum-related | Licence;Security of databases; Data mining |
| 4.2 Skills-related |  |

**5. Requirements (if any)**

|  |  |
| --- | --- |
| 5.1. For running the course |  |
| 5.2. For running the seminar / laboratory /project  *\*The type is to be chosen according to the discipline* | Laboratory room available with computers |

**6. Acquired specific skills**

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| --- | --- |
| Professional skills | Development of software systems, modeling of various aspects of the development process of an application that manages persistent data and uses a specific algorithm for mining the data used. |
| Cross-cutting skills | Execution of complex professional tasks, in conditions of autonomy and professional independence, involving the detection and solution of related problems in the development of a software application.  Efficient development of activities organized in an interdisciplinary group and development of empathic capacities for interpersonal communication, relationships and collaboration with various groups. |

**7. Course goal and objectives**

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| --- | --- |
| 7.1 The general objective of the course | Mastering the basic knowledge related to the software development process |
| 7.2 Specific objectives | Elaboration of the models necessary for the development process. Knowledge of methods used in the development process. |

**8. Contents**

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| --- | --- | --- |
| **8.1 Lecture** | **Teaching methods** | **Number of hours** |
| - | - | - |
| **Bibliography:** | | |

|  |  |  |
| --- | --- | --- |
| **8.2 Applications\* (laboratory)**  *\*The type is to be chosen according to the discipline* | **Teaching methods** | **Number of hours** |
| 1.Software requirements analysis | Dialogue  Problem  Conversation  Methods that contribute to the development of critical thinking  programmer  Independent and cooperative learning | 2 |
| 2.Database design meeting security requirements | 4 |
| 3.System class design | 4 |
| 4.Software system implementation | 10 |
| 5.System testing | 2 |
| 6. Writing documentation | 6 |
| **Bibliography:**   1. Petac E., Retele si sisteme distribuite, Cap. 4, pp.103-206, in cartea Medii virtuale multimodale distribuite, autori Popovici D. M., Popa C., Nicola A., Petac E., Editura Universitaria Craiova şi Editura Prouniversitaria Bucuresti, 978- 606-26-0049-5, 2015, vol 4, 215 pag. 2. Petac E., Udrescu T. - Fundamente Java, Editura MatrixRom, Bucureşti, 2005 3. Petac E., Petac D., Metode si tehnici de protectie a informatiei in retelele de calculatoare, Ed. MatrixRom, Bucuresti, 1998. 4. Popovici D. M. (coordonator), Zaharescu E., Rusu A., Puchianu C. M., Sburlan D., „Web semantic şi ontologii” capitol în volumul „Medii virtuale multimodale distribuite”, Editura Universitaria Craiova şi Editura Prouniversitaria Bucuresti, 978-606-26-0280-2, 2015, vol 3, 266 pag. 5. R. Pressman, Software engineering, A Practitioner’s Approach, McGrow Hill, 2010 | | |

**9. Correlation between the content of the course and the needs/expectations of the epistemic community, professional associations and/or significant employers relevant for the program**

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| --- |
| Preparing graduates for a profession in the field of cybersecurity and artificial intelligence. |

**10. Evaluation**

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| --- | --- | --- | --- |
| Type of activity | 10.1 Evaluation criteria | 10.2 Evaluation methods | 10.3 Percentage of final grade |
| 10.4 Course | -- | -- | - |
| 10.5 Applications\*  (Seminar/Laboratory / Project)  *\*The type is to be chosen according to the discipline* | Active participation in teaching activities | Oral | 40% |
|  | Project | Oral | 60% |
|  | | | |
| 10.6 Minimum standard of achievement for the acquisition of the ECTS credits: grade 5/10. | | | |
| UML modeling in the software requirements analysis phase. | | | |

Date of completion Course Instructor, Teaching Assistant, 20.09.2022 - Conf.univ.dr. Petac Eugen

Date of approval in the Department Head of Department

27.09.2022 Conf. Univ. dr. PUCHIANU Crenguta-Madalina

Dean,

Conf. Univ. Dr. Aurelian Nicola