Course title	**Advanced Web Crawling and Cybersecurity (Master)**
Institute/Division	Faculty of Computer Science and Telecommunication/ Department of Computer Science
Course code	F-1.WCSEC
Erasmus subject code	11.3 Informatics, Computer Science
Number of contact hours**	30 lecture hours (30h)
Course duration	1 semester (Fall)
ECTS credits	4
Course description (max 100 words)	This course covers advanced techniques in web crawling and cybersecurity. Students will explore web data extraction, crawling strategies, and ethical considerations, alongside countermeasures used to detect and prevent crawling activities. The course integrates machine learning-based anomaly detection and cybersecurity strategies to identify web-based threats. Topics include web scraper development, anti-bot mechanisms, distributed crawling, and ethical hacking principles. Students will work on projects that involve real-world applications of web intelligence and security analysis.
Literature	- Michael Schrenk, "Webbots, Spiders, and Screen Scrapers" - Christopher Hadnagy, "Social Engineering: The Art of Human Hacking" - Relevant research papers on web crawling, scraping detection, and cybersecurity
Course type/organization	· Lectures (15h), · Computer labs (15h) / Project-based learning
Assessment method	Attendance at lectures, completion of lab exercises, and submission of a final project.
Prerequisites	Students should have experience with programming (Python/JavaScript preferred), basic knowledge of networking and web technologies, and familiarity with cybersecurity concepts.
Primary target group	Advanced computer science students (Master level or at least 3rd year Bachelor's students with strong programming skills).
Contact person	Mateusz Nawrocki (MSc Eng.)
Remarks	N/A

*please insert one of the following codes:
11.0 Mathematics, Informatics
11.1 Mathematics
11.2 Statistics
11.3 Informatics, Computer Science
11.4 Artificial Intelligence
11.5 Actuarial Science
11.9 Others Mathematics, Informatics

**1 lecture hour=45 minutes