COURSE DESCRIPTION

COURSE NAME	**SECURITY OF OPERATING SYSTEMS**	CODE: MSI2104

STUDY YEAR	MASTER II	SEMESTER	1	COURSE STATUS (**C**-compulsory/**OP**-optional/**F**-facultative)	

HOURS PER WEEK				TOTAL HOURS PER SEMESTER	TOTAL HOURS INDIVIDUAL ACTIVITY	CREDITS	EVALUATION (**P**-during the semester, **C**-oral examination, **E**-written examination, **M**-mixed)	TEACHING LANGUAGE
C	S	L	Pr.					
2	-	2	-	56	184	8	M	English

COURSE TEACHER	TEACHING AND SCIENTIFIC DEGREE, FIRST NAME, LAST NAME	DEPARTMENT
	LECT. DR. CRISTIAN VIDRAŞCU	Computer Science

PREVIOUS COURSES REQUESTED	BSc in Computer Science

OBJECTIVES	This course offers an advanced introduction in the field of security of operating systems. The students who will attend this course will obtain knowledge about operating systems, regarding the techniques and mechanisms used for their security.
GENERAL DESCRIPTION	The course will treat the following subjects: • Basic notions. Security models. Identification and authentication. Authorization and accountability. • Access control in the system. Plocies used for access control: discretionary, mandatory, and role-based policies. Specification of access control policies. • The UNIX/Linux operating system. Security architecture. Classical access control mechanisms. Audit logs and intrusion detection methods. • The Windows operating system. Security architecture. Access control and audit mechanisms. Privilege elevation techniques. • Advanced access control techniques - SELinux framework, AppArmor, Flask security architecture. • Security evaluation standards: Orange Book,Common Criteria, etc. • Modern protection mechanisms: virtualization and sandboxing techniques, proof-carrying code.
DESCRIPTION OF SEMINARY / LABORATORY WORKS	This is a research oriented course aiming to guide students in doing research in the field of security of operating systems.
TEACHING METHODS	Exposure using video-projetor, combined with explanations on blackboard and practical demos.

BIBLIOGRAPHY (SELECTION)	• Dieter Gollmann: Computer Security, John Wiley & Sons, 1999. • Matt Bishop, Computer Security, Art and Science, Addison-Wesley, Pearson Education, 2002. • William Stallings, Lawrie Brown: Computer Security, Principles and Practice, Prentice Hall, 2008. • Ross J. Anderson: Security Engineering, second edition, John Wiley & Sons, 2008. • Boris Loza: Unix, Solaris and Linux: A Practical Security Cookbook, Authorhouse Press, 2005. • Research papers on specific topics.

EVALUATION		
	conditions	
	criteria	
	evaluation methods	Practical labworks during the semester and final written test.
	final result - formula	Lab * 0.4 + WrittenThesis1 * 0.3 + WrittenThesis2 * 0.3