

**STRUCTURE OF THE TWO YEAR STUDY STUDY PROGRAM ON SOFTWARE ENGINEERING,  
SECOND CYCLE OF STUDIES WITH 120 ECTS**

Ninth semester		
	Title of the subject	Credits
		ECTS
1	Advanced Software Engineering	6
2	Research Techniques and Academic Writing	6
3	Modeling and simulations	6
Elective courses (2 of 4):		
	Information theory with cryptography	6
	Machine learning	6
	Processing natural languages	6
	Data Warehouses	6

Literature	
Subject	Literature
<b>Advanced Software Engineering</b>	<b><i>Software Engineering, 9th</i></b> , Ian Sommerville, Addison Wesley, 2010.
<b>Research Techniques and Academic Writing</b>	<b><i>Research Methodology: A Step-byStep Guide for Beginners, third edition</i></b> , R. Kumar, Sage Publications, 2010 <b><i>Research Design: Qualitative, Quantitative, and Mixed Methods Approaches, third edition</i></b> , J.W. Creswell, Sage Publications, 2008 <b><i>Teaching academic writing: A Toolkit for higher education</i></b> , C. Coffin, Routledge, 2002
<b>Modeling and simulations</b>	<b><i>Modeling, Identification and Simulation of Dynamical Systems</i></b> , P.P.J. van den Bosch, A.C. van der Klauw, CRC Press, 1994
<b>Information theory with cryptography</b>	<b><i>Entropy and Information Theory</i></b> , R.M.Gray, Springer-Verlag New York, 2013 <b><i>Elements of Information Theory</i></b> , T.M.Cover, J.A.Thomas, John Wiley and Sons, 2006 <b><i>Understanding Cryptography: A Textbook for Students and Practitioners</i></b> , C. Paar, J. Pelzl, Springer, 2010
<b>Machine learning</b>	<b><i>Machine Learning in Action</i></b> , Peter Harrington,

	<p>Manning Publications, 2012  <b><i>Python Machine Learning</i></b>, Sebastian Raschka,  Packt Publishing, 2015</p>
<b>Processing natural languages</b>	<p><b><i>Speech and Language Processing</i></b>, Jurafsky D.,  Martin J.H., Prentice Hall (2ed), 2008  <b><i>Grammar of the Macedonian literary language  (part 1)</i></b>, Blaze Koneski, 1952  <b><i>Grammar of the Macedonian literary language  (part 2)</i></b>, Blaze Koneski, 1954</p>
<b>Data Warehouses</b>	<p><b><i>The Data Warehouse Toolkit</i></b>, Ralph Kimball,  Wiley, 2013  <b><i>Agile Data Warehouse</i></b>, Lawrence Corr, Decision  One, 2011</p>