

SUBJECT PAGE

OE-KVK ELECTRICAL ENGINEERING BSc ENGLISH LANGUAGE TRAINING BASICS OF NATURAL SCIENCE

SUBJECT NAME: Mathematics I.	CODE(S): KEXMA1ABNE	HOURS: <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;"></th> <th style="width: 20%; text-align: center;"><u>LECTURE / CONSULTATION</u></th> <th style="width: 20%; text-align: center;"><u>PRACTICE</u></th> <th style="width: 20%; text-align: center;"><u>LABORATORY</u></th> </tr> </thead> <tbody> <tr> <td><i>FULL TIME:</i></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">Weekly</td> <td style="text-align: center;">3</td> <td style="text-align: center;">3</td> <td style="text-align: center;">0</td> </tr> </tbody> </table> CORRESPONDENCE: Semester		<u>LECTURE / CONSULTATION</u>	<u>PRACTICE</u>	<u>LABORATORY</u>	<i>FULL TIME:</i>				Weekly	3	3	0
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Weekly	3	3	0											
CREDITS: <p style="text-align: center;">6</p> REQUIREMENTS: Examination	PREREQUISITE(S):													
SUBJECT LEADER: Dr. Galántai Aurél	POST: Professor	FACULTY AND INSTITUTE: John von Neumann Faculty of Informatics Institute of Intelligent Engineering Systems												
DESCRIPTION OF THE SUBJECT: Revision of high school mathematics. Concept of matrices. Operations on matrices. Determinants and their main characteristics. Inverse of a matrix. Linear equation systems. Concept of complex numbers. Introduction of and operations in the 3 forms of complex numbers. Concept of sequences. Bounded sequences, monotonicity, accumulation points and limit of sequences. General concept of a function. Basic concepts of functions. Basic functions. Concept of the differential quotient. Geometric and physical meaning. Rules for finding the derivative. Discussion of functions by derivative tests. Concept of multivariable functions. Partial derivatives and applications. Concept of indefinite integrals. Concept of Riemann integrals.														
COMPETENCES: <ul style="list-style-type: none"> - Knowledge of general and specific mathematical, natural and social scientific principles, rules, relations, and procedures as required to pursue activities in the special field of electrical engineering. - Knowledge of the learning, knowledge acquisition, and data collection methods of the special field of electrical engineering, their ethical limitations and problem solving techniques. - Able to apply calculation and modelling principles and methods related to electric products and product developments. - Able to apply the learning, knowledge acquisition, and data collection methods of the special field. - Able to communicate in their mother tongue and in at least one foreign language, in accordance with their special field, in a professionally adequate manner, both verbally and in writing. 														
LITERATURE: <ol style="list-style-type: none"> 1) Kovács, J., Schmidt, E., Szabó, L.A.: Mathematics, ÓE KVK 2103, Budapest, 2013. 2) Kovács, J., Schmidt, E.: Mathematics. Problem Solving, E-learning 3) O.V Manturov: A Course of Higher Mathematics, Publisher Mir. Hardcover 1989, 461 pages, ISBN 5030002669 														