

Course code C.3. Course item .....

## 1. INFORMATION ABOUT THE COURSE

### A. Basic information

Course title	<i>Engineering Graphics</i>
Field of study	<i>Computer Aided Engineering</i>
Cycle	<i>Second</i>
Study profile	<i>Academic</i>
Study mode	<i>Full-time</i>
Specialisation	<i>Not relevant</i>
Unit responsible for the field of study	<i>Faculty of Mechanical Engineering</i>
Lecturer	<i>Mgr inż. Piotr Czyżewski</i>
Introductory courses	<i>Not relevant</i>
Prerequisites	<i>Basic knowledge of 3D graphic programs</i>

### B. Semester/ weekly timetable

Semester	Lectures	Classes	Laboratories	Project classes	Seminars	Field experience	ECTS credits
II	15	-	30	-	-	-	3

### LEARNING OUTCOMES (acc. to National Qualifications Framework)

No.	Description of learning outcomes	Reference to learning outcomes for the field of study	Reference to learning outcomes for the area of study
<b>KNOWLEDGE</b>			
K1	student knows programs for 3D designing and making technical documentation	CAE_W03	T2A_W04, T2A_W05
K2	student knows methods for expanding CAE programs functionality,	CAE_W08	T2A_W04, T2A_W05
<b>SKILLS</b>			
S1	student is able to design 3D objects and technical device with the help of CAE programs.	CAE_U03	T2A_U02, T2A_U07, T2A_U19
S2	student is able to computer-aid the process of preparation technological documentation of technical device with economical analysis	CAE_U04	T2A_U02, T2A_U07, T2A_U14, T2A_U19
<b>SOCIAL COMPETENCES</b>			
SC1	student understands the necessity of education throughout the whole life	CAE_K01	T2A_K01

SC2	student is able to work in a group, playing different roles	CAE_K03	T2A_K03
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## 2. TEACHING METHODS

*multimedia lecture, laboratory classes,*

## 2. METHODS OF EXAMINATION

*Practical exam,*

## 3. COURSE CONTENT

Specify the content separately for each type of classes in accordance with point I.B.	<b>LABORATORY</b> 1. Modules in NX program, 2. Drafting, 3. Solid modelling, 4. Modifications of solid models, 5. Synchronous modelling, 6. Working with imported models, 7. Making and working on assemblies, 8. Parametric tools in models and assembly, 9. Analysis of models and assemblies, 10. 2d documentation, 11. Cam and cam tools, 12. Simulation tools.
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## 4. VALIDATION OF LEARNING OUTCOMES

(Each learning outcome from the list requires validation methods to ensure that it was achieved by a student.)

Learning outcome	Form of assessment (for example:)					
	Oral examination	Written examination	Colloquium	Project	Report	Practical examination
K1						x
K2						x
S1						x
S2						x
SC1						x
SC2						x

## 5. LITERATURE

Basic literature	Didactic materials available by CAMdivision company. Didactic materials available by Simens corporation.
Supplementary literature	Stephen Samuel: <i>Basic to Advanced NX8 Modeling, Drafting and Assemblies</i> . Published by Design Visionaries, Printed in the U.S.A. 2012, ISBN: 978-1478316428 Hyunjae Park, Anthony Bowman, Kyuil Kim: <i>Engineering Graphics, Design and Modeling with UGS NX 7.5</i> . Published by McGraw Hil Published 2011, ISBN-10: 0-07-804349-2

## 6. TOTAL STUDENT WORKLOAD REQUIRED TO ACHIEVE EXPECTED LEARNING OUTCOMES EXPRESSED IN TIME AND ECTS CREDITS

Załącznik nr 3 do wytycznych dla rad podstawowych jednostek organizacyjnych do tworzenia nowych i weryfikacji istniejących programów studiów I i II stopnia w UTP w Bydgoszczy

Student's activity	Student workload– number of hours
Participation in classes indicated in point 2.2	45
Preparation for classes	15
Reading assignments	15
Other (preparation for exams, tests, carrying out a project etc)	15
Total student workload	90
<b>Number of ECTS credits allocated by the lecturer</b>	<b>3</b>
Final number of <b>ECTS credits (determined by the Programme Council for the Field of Study)</b>	<b>3</b>