



## TECHNICAL UNIVERSITY OF VARNA

**Ratified by:**

**Rector .....**

/Prof. Rosen Vasilev, DSc/

## CURRICULUM

Professional orientation: **COMMUNICATIONS AND COMPUTER ENGINEERING**

Educational and qualification degree: **BACHELOR**

Programme: **COMPUTING**

Professional qualification: **COMPUTER ENGINEER**

Form of study: **FULL - TIME**

Term of study: **4 YEARS / 8 SEMESTERS**

Number	Subject Name	Forms of assessment				Weekly auditorium load						Unsupervised load	Whole load of students	ECTS credits
		Exams	Inter-semester Evaluation	Course project	Accepted	Lectures	Seminars			Laboratory Exercises	Total load			
							Seminar Exercises	Course project	Assignment					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Basic Mathematics for Engineering	*				30				30	60	120	180	7
2	Computer Systems Fundamentals	*				30				30	60	120	180	7
3	Programming Fundamentals	*				30				30	60	120	180	7
4	Electrical Engineering	*				30				30	60	105	165	6
5	English				*		30				30	30	60	2
6	<i>Optional Subject</i>				*							30	30	1
a	Specialized Sport Activities, part 1													
b	Sport and Social Adaptation, part 1													
<b>Total for the 1 semester:</b>		<b>4</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>120</b>	<b>30</b>	<b>0</b>	<b>0</b>	<b>120</b>	<b>270</b>	<b>525</b>	<b>795</b>	<b>30</b>
7	Mathematics for Computing	*				30				30	60	120	180	7
8	Algorithms and Data Structures	*				30				30	60	120	180	7
9	Analysis and Synthesis of Digital Logic	*				30				30	60	120	180	7
10	Computer Electronics	*				30				30	60	75	135	5
11	Practical Training, part 1				*							30	30	1
12	<i>Optional Subject</i>				*							30	30	1
a	Specialized Sport Activities, part 2													
b	Sport and Social Adaptation, part 2													
<b>Total for the 2 semesters:</b>		<b>4</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>120</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>120</b>	<b>240</b>	<b>495</b>	<b>735</b>	<b>28</b>
13	Discrete Structures	*				30	30				60	75	135	5
14	Electronics Measurement	*				30				30	60	120	180	7
15	Object-Oriented Programming Fundamentals (C++)	*				30				30	60	120	180	7
16	Web Design		*			15				30	45	90	135	5

Number	Subject Name	Forms of assessment				Weekly auditorium load						Unsupervised load	Whole load of students	ECTS credits
		Exams	Inter-semester Evaluation	Course project	Accepted	Lectures	Seminars			Laboratory Exercises	Total load			
							Seminar Exercises	Course project	Assignment					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
17	Computer Organization	*				30				30	60	120	180	7
18	Practical Training, part 2				*							30	30	1
19	<i>Optional Subject</i>				*							30	30	1
a	Specialized Sport Activities, part 3													
b	Sports Management, part 1													
<b>Total for the 3 semesters:</b>		<b>4</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>135</b>	<b>30</b>	<b>0</b>	<b>0</b>	<b>120</b>	<b>285</b>	<b>585</b>	<b>870</b>	<b>33</b>
20	Advanced Object-Oriented Programming (Java)	*				30				30	60	120	180	7
21	System Analysis	*				30				30	60	105	165	6
22	Microprocessors	*				30				30	60	75	135	5
23	Programming Systems	*				30				30	60	105	165	6
24	Digital Systems		*			30				30	60	105	165	6
25	<i>Optional Subject</i>			*				30			30	30	60	2
a	Object-Oriented Programming Fundamentals (C++), project													
b	WEB Design, project													
c	Computer Organization, project													
d	Discrete Structures, project													
e	Computer Electronics, project													
26	<i>Optional Subject</i>				*							30	30	1
a	Specialized Sport Activities, part 4													
b	Sports Management, part 2													
<b>Total for the 4 semesters:</b>		<b>4</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>150</b>	<b>0</b>	<b>30</b>	<b>0</b>	<b>150</b>	<b>330</b>	<b>570</b>	<b>900</b>	<b>33</b>
27	Graphics and Visual Computing	*				30				30	60	105	165	6
28	Software Engineering		*			30				30	60	120	180	7
29	Data Bases	*				30				30	60	120	180	7
30	Computer Architectures	*				30				30	60	120	180	7
31	Computer Communications Fundamentals	*				30				30	60	105	165	6
32	<i>Optional Subject</i>			*				30			30	30	60	2
a	Advanced Object-Oriented Programming (Java), project													
b	Microprocessors, project													
c	Programming Systems, project													
d	Digital Systems, project													
e	System Analysis, project													
<b>Total for the 5 semesters:</b>		<b>4</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>150</b>	<b>0</b>	<b>30</b>	<b>0</b>	<b>150</b>	<b>330</b>	<b>600</b>	<b>930</b>	<b>35</b>
33	Internet Programming Technologies	*				30				30	60	105	165	6
34	Microprocessor Systems	*				30				30	60	105	165	6
35	Computer Networks		*			30				30	60	75	135	5
36	Computer Peripherals	*				30				30	60	105	165	6
37	Operating Systems	*				30				30	60	120	180	7
38	Specialized Practice				*						0	150	150	5
39	<i>Optional Subject</i>			*				30			30	30	60	2
a	Software Engineering, project													

Number	Subject Name	Forms of assessment				Weekly auditorium load						Unsupervised load	Whole load of students	ECTS credits
		Exams	Inter-semester Evaluation	Course project	Accepted	Lectures	Seminars			Laboratory Exercises	Total load			
							Seminar Exercises	Course project	Assignment					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	b Data Bases, project													
	c Computer Architectures, project													
	d Computer Communications Fundamentals, project													
	e Graphics and Visual Computing, project													
<b>Total for the 6 semesters:</b>		<b>4</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>150</b>	<b>0</b>	<b>30</b>	<b>0</b>	<b>150</b>	<b>330</b>	<b>690</b>	<b>1020</b>	<b>37</b>
40	<i>Optional Subject</i>	*				30				30	60	120	180	7
	a Compilers and Interpreters													
	b Multi-User Operating Systems													
41	Networks Administration	*				30				30	60	120	180	7
42	Embedded Systems	*				30				30	60	120	180	7
43	<i>Optional Subject</i>	*				15				30	45	90	135	5
	a Web Programming													
	b Human Computer Interaction													
44	Practical Training, part 3				*							60	60	2
45	<i>Optional Subject</i>			*				30			30	30	60	2
	a Internet Programming Technologies, project													
	b Microprocessor Systems, project													
	c Computer Networks, project													
	d Computer Peripherals, project													
	e Operating Systems, project													
<b>Total for the 7 semesters:</b>		<b>4</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>105</b>	<b>0</b>	<b>30</b>	<b>0</b>	<b>120</b>	<b>255</b>	<b>540</b>	<b>795</b>	<b>30</b>
46	<i>Optional Subject 1</i>	*				30				30	60	105	165	6
47	<i>Optional Subject 2</i>	*				30				30	60	105	165	6
48	<i>Optional Subject 3</i>	*				30				30	60	105	165	6
49	Preliminary Graduation Work			*				30			30	30	60	2
	<u>Optional Subjects:</u>													
1	Distributed Programming													
2	Office Systems													
3	Artificial Intelligence													
4	Cryptography and Data Protection													
5	Economics and Management													
6	Programming Languages Semantics													
7	Programmable Logic Design													
8	Multimedia Systems and Technologies													
9	Real Time Systems													
10	Object-Oriented Applications													
11	E-commerce													
12	Business Intelligence Systems													
13	Computer and Network Security													
14	Programming for Mobile Devices													

Number	Subject Name	Forms of assessment				Weekly auditorium load						Unsupervised load	Whole load of students	ECTS credits
		Exams	Inter-semester Evaluation	Course project	Accepted	Lectures	Seminars			Laboratory Exercises	Total load			
							Seminar Exercises	Course project	Assignment					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
15	Embedded Microcontrollers													
<b>Total for the 8 semesters:</b>		<b>3</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>90</b>	<b>0</b>	<b>30</b>	<b>0</b>	<b>90</b>	<b>210</b>	<b>345</b>	<b>555</b>	<b>20</b>
<b>Totals for the whole course of education</b>														
		<b>31</b>	<b>4</b>	<b>5</b>	<b>9</b>	<b>1020</b>	<b>60</b>	<b>150</b>	<b>0</b>	<b>1020</b>	<b>2250</b>	<b>4350</b>	<b>6600</b>	<b>246</b>
<b>Facultative Subjects</b>														

Types of graduation	Semester	Unsupervised load	ECTS credits
Preparation of Diploma Thesis / Preparation for State Examination	<b>8</b>	<b>300</b>	<b>10</b>
Defence of Diploma Thesis / State Examination			

**Notes:**

The curriculum is valid for teaching in Bulgarian and English language.

**Approved by the Academic Board of TU-Varna:**

Protocol № 10 / 25.04.2016

Modified with Protocols: № 11 / 06.06.2016, № 25 / 27.11.2017

**Valid from 2018/2019 academic year**

**The weekly plan of the lessons is fixed according to the Academic Board "Structure of the Learning Process" adopted for the current academic year.**

Head of Department:

/Assoc. Prof. H. Valchanov, PhD/

Dean of Faculty:

/Assoc. Prof. N. Nikolov, PhD/