

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAVI
Scheme of Teaching and Examination 2017-2018
Choice Based Credit System (CBCS)
B.E. Nano Technology

III SEMESTER										
Sl. No	Course Code	Course Title	Teaching Department	Teaching Hours/Week		Examination				Credits
				Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17MAT31	Engineering Mathematics - III	Maths	04		03	60	40	100	4
2	17NT32	Basics of Material Science	NT/ME/Phy./Chem.	04		03	60	40	100	4
3	17NT33	Foundations of Nanoscale Science and Technology	NT/Phy./Chem.	04		03	60	40	100	4
4	17NT34	MOSFETs and Digital Circuits	NT/EC/EE/Phy.	04		03	60	40	100	4
5	17NT35	Physical and Chemical Principles of Nanotechnology	NT/Phy./Chem.	04		03	60	40	100	4
6	17NT36	Fundamentals of Bioscience	NT/BT/Chem.	03		03	60	40	100	3
7	17NTL37	Simulation and Modelling Lab	NT/EC/EE	1 I + 2 P		03	60	40	100	2
8	17NTL38	Digital Electronics Lab	NT/EC/EE	1 I + 2 P		03	60	40	100	2
9	17KL/CP H39	Kannada/Constitution of India, Professional Ethics and Human Rights	Humanities	01		01	30	20	50	1
TOTAL				24	06	25	510	340	850	28

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IV SEMESTER										
Sl. No	Course Code	Course Title	Teaching Department	Teaching Hours/Week		Examination				Credits
				Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17MAT41	Engineering Mathematics - IV	Maths	04		03	60	40	100	4
2	17NT42	Material Science and Engineering	NT/ME/Phy./Chem.	04		03	60	40	100	4
3	17NT43	Synthesis and Processing Techniques	NT/Phy./Chem.	04		03	60	40	100	4
4	17NT44	Electronic Instruments and Measurements	NT/EC/EE	04		03	60	40	100	4
5	17NT45	Applications of Nanotechnology	NT/Phy./Chem.	04		03	60	40	100	4
6	17NT46	Biochemistry and Microbiology	NT/BT/Chem.	03		03	60	40	100	3
7	17NTL47	Electronic Instrumentation Lab	NT/EC/EE/Phy.	1 I + 2 P		03	60	40	100	2
8	17NTL48	Biochemistry and Microbiology Lab	NT/BT/Chem.	1 I + 2 P		03	60	40	100	2
9	17KL/CP H49	Kannada/Constitution of India, Professional Ethics and Human Rights	Humanities	01		01	30	20	50	1
TOTAL				24	06	25	510	340	850	28

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V SEMESTER										
Sl. No	Course Code	Course Title	Teaching Department	Teaching Hours/Week		Examination				Credits
				Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17NT51	Management and Entrepreneurship	NT/ME/CS/EC/EE	04		03	60	40	100	4
2	17NT52	Synthesis of Nanomaterials	NT/Chem.	04		03	60	40	100	4
3	17NT53	Characterization Techniques	NT/Phy./Chem.	04		03	60	40	100	4
4	17NT54	Digital System Design	NT/EC	04		03	60	40	100	4
5	17NT55X	Professional Elective	NT	03		03	60	40	100	3
6	17NT56Y	Open Elective	NT	03		03	60	40	100	3
7	17NTL57	Nano Materials Synthesis Lab	NT/Chem.	1 I + 2 P		03	60	40	100	2
8	17NTL58	Characterization and Measurement Lab	NT/Phy.	1 I + 2 P		03	60	40	100	2
TOTAL				22	06	24	480	320	800	26

Professional Elective		Open Elective Offered by the Department of Nano Technology	
Course under code 17NT55X	Course Title	Course under code 17NT56Y	Course Title
17NT551	Analog Circuit Design	17NT561	Introduction to Nanoscience and Nanotechnology
17NT552	Biomaterials	17NT562	Nanomaterials and Their Applications
17NT553	Fundamentals of Thermodynamics	17NT563	Nanodevices and Applications
17NT554	Nanostructures and Self-assembly	17NT564	Nanomaterials Synthesis and Characterization

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VI SEMESTER										
Sl. No	Course Code	Course Title	Teaching Department	Teaching Hours/Week		Examination				Credits
				Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17NT61	Quantum Mechanics and Simulation Techniques	NT	04		03	60	40	100	4
2	17NT62	Python Programming Language for Automation	NT/CS/IS	04		03	60	40	100	4
3	17NT63	Molecular Biology and Genetic Engineering	NT/BT	04		03	60	40	100	4
4	17NT64	Micro Fluidics and Nanofluids	NT	04		03	60	40	100	4
5	17NT65X	Professional Elective	NT	03		03	60	40	100	3
6	17NT66Y	Open Elective	NT	03		03	60	40	100	3
7	17NTL67	Molecular Biology and Genetic Engineering Lab	NT/BT	1 I + 2 P		03	60	40	100	2
8	17NTL68	Quantum Mechanics and Simulation lab	NT	1 I + 2 P		03	60	40	100	2
TOTAL				22	06	24	480	320	800	26

Professional Elective		Open Elective Offered by the Department of Nano Technology	
Course under code	Course Title	Course under code	Course Title
17NT65X		17NT66Y	
17NT651	Hybrid Circuits and Packaging	17NT661	Nanotechnology in Electrical and Electronics Engineering
17NT652	Nanotechnology in Agriculture and Food Processing	17NT662	Nanotechnology in Civil and Environmental Engineering
17NT653	Ceramic Materials and Their Applications	17NT663	Nanotechnology in Mechanical Engineering
17NT654	Surface Science and Thin Film Technology	17NT664	Nanotechnology in Biomedical Engineering

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VII SEMESTER										
Sl. No	Course Code	Course Title	Teaching Department	Teaching Hours/Week		Examination				Credits
				Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17NT71	Nanocomposites and Their Applications	NT	04		03	60	40	100	4
2	17NT72	Microcontrollers and Interface	NT/EC	04		03	60	40	100	4
3	17NT73	MEMS and NEMS	NT	04		03	60	40	100	4
4	17NT74X	Professional Elective	NT	03		03	60	40	100	3
5	17NT75Y	Professional Elective	NT	03		03	60	40	100	3
6	17NTL76	Nano - Composites, Device Fabrication, and Characterization Lab	NT	1 I + 2 P		03	60	40	100	2
7	17NTL77	MEMS Simulation Lab	NT	1 I + 2 P		03	60	40	100	2
8	17NTP78	Project Phase – I and Project Seminar	NT		03	--	--	100	100	2
TOTAL				18	09	21	420	380	800	24

Professional Elective		Professional Elective	
Course under code 17NT74X	Course Title	Course under code 17NT75Y	Course Title
17NT741	Data Analytics in Nanoscience	17NT751	Signal and Image Processing
17NT742	Nanotechnology for Health Care	17NT752	Nanotechnology for Energy and Environment
17NT743	Engineering Materials and Surface Coating	17NT753	3D Printing Technology
17NT744	Facilitation, Validation, QC, and QA	17NT754	Nano Toxicology

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Sl. No	Course Code	Course Title	Teaching Department	Teaching Hours/Week		Examination			Credits	
				Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks		Total Marks
1	17NT81	Nano-Electronics	NT/EC	04		03	60	40	100	4
2	17NT82	Bio-Nanotechnology	NT/BT	04		03	60	40	100	4
3	17NT83X	Professional Elective	NT	03		03	60	40	100	3
4	17NT84Y	Internship / Professional Practice	NT	Working hours of the place of Internship		03	50	50	100	2
5	17NTP85	Project Work Phase –II	NT		06	03	100	100	200	6
6	17NTL86	Technical Seminar	NT		04	--	--	100	100	1
TOTAL				11	10	15	390	390	700	20

Professional Elective	
Course under 17NT83X	Course Title
17NT831	Nano-Photonics
17NT832	Nanomedicines and Biomedical Imaging
17NT833	Mechanical Operations
17NT834	Green Nanotechnology