# **ACADEMIC CURRICULA**

## UNDERGRADUATE DEGREE PROGRAMMES

**Bachelor of Technology** 

(B.Tech. - Four Years)

(Choice Based Flexible Credit System)

Regulations 2018

Volume - 1

(Revised in March 2019)



# SRM INSTITUTE OF SCIENCE AND TECHNOLOGY

(Deemed to be University u/s 3 of UGC Act, 1956)

Kattankulathur, Kancheepuram District 603203, Tamil Nadu, India

# SRM INSTITUTE OF SCIENCE AND TECHNOLOGY

Kattankulathur, Kanchecpuram District 603203, Tamil Nadu, India

# 33. B.Tech. in Nanotechnology

#### 33. (a) Mission of the Department

Mission Stmt - 1	Actively contribute for the development of nanoscience, engineering and technology through world-class infrastructure, teaching & research
Mission Stmt - 2	Establish collaborative research with the institutions of national and international repute
Mission Stmt - 3	Encourage industry-academia interactions to translate scientific findings into technological development to meet the societal needs
Mission Stmt - 4	Organize and actively participate in workshops, conferences and seminars on advancements in nanoscience and nanotechnology
Mission Stmt - 5	Focus on developing skills of students to enhance the employability in various organizations

#### 33. (b) Program Educational Objectives (PEO)

PEO - 1	Provide understanding of physical, chemical and biological principles in the multi-disciplinary field of nanoscience and nanotechnology
PEO - 2	Develop skills on the synthesis of nanomaterials and fabrication of micro- and nano-structures
PEO - 3	Familiarize the graduates with the advanced nanoscale characterization techniques and develop the analytical ability
PEO - 4	Enable graduates with professional, scientific research, and computational skills for employment in industries, R & D centres and higher
PEU - 4	education education
PEO - 5	Prepare the graduates to take individual and team work responsibilities in a multidisciplinary environment

#### 33. (c) Mission of the Department to Program Educational Objectives (PEO) Mapping

	Mission Stmt - 1	Mission Stmt - 2	Mission Stmt - 3	Mission Stmt - 4	Mission Stmt - 5
PEO - 1	Н	M	L	H	L
PEO - 2	Н	Н	M	Н	H
PEO - 3	Н	Н	M	Н	M
PEO - 4	Н	M	H	М	Н
PEO - 5	М	Н	H	Н	M

H – High Correlation, M – Medium Correlation, L – Low Correlation

# 33. (d) Mapping Program Educational Objectives (PEO) to Program Learning Outcomes (PLO)

						Progra	am Lear	ning Ou	tcomes	(PLO)					
	Graduate Attributes (GA)								Program Specific Outcomes (PSO)						
	Engineering Knowledge	Problem Analysis	Design & Development	Analysis, Design, Research	Modem Tool Usage	Society & Culture	Environment & Sustainability	Ethics	Individual & Team Work	Communication	Project Mgt. & Finance	Life Long Leaming	PSO - 1	PSO - 2	PSO - 3
PEO - 1	Н	Н	М	Н	М	M	М	Н	Н	Н	М	Н	Н	Н	М
PEO - 2	Н	Н	Н	Н	Н	М	L	Н	Н	Н	М	Н	Н	Н	Н
PEO - 3	Н	Н	Н	Н	Н	М	М	Н	Н	Н	М	H	Н	Н	Н
PEO - 4	Н	Н	M	Н	Н	Н	Н	Н	М	М	Н	Н	Н	Н	Н
PEO - 5	L	L	М	М	L	М	Н	Н	Н	М	Н	М	Н	М	Н

H – High Correlation, M – Medium Correlation, L – Low Correlation, PSO – Program Specific Outcomes (PSO)

#### PSO – Program Specific Outcomes (PSO)

PSO - 1	Ability to understand materials and their properties at the atomic and nanometer scales, including an understanding of the intimate relationship
1 30 - 1	between the scale and the properties of materials
PSO - 2	Ability to apply the learnt nanotechnology principles, analyze, evaluate and design advanced systems & processes
PSO - 3	Ability to employ the acquired skills in nanotechnology for the benefit of self and society

## 33. (e) Program Structure: B.Tech. in Nanotechnology

Humanities & Social Sciences including Management Courses (H)							
Course	Course	Hou	rs/ W	eek			
Code	Title	L	Τ	Р	С		
18LEH101J	English	2	0	2	3		
18LEH102J	Chinese						
18LEH103J	French						
18LEH104J	German	2	0	2	3		
18LEH105J	Japanese						
18LEH106J	Korean						
18PDH101T	General Aptitude	0	0	2	1		
18PDH102T	Management Principles for Engineers	2	0	0	2		
18PDH103T	Social Engineering	2	0	0	2		
18PDH201T	Employability Skills & Practices	0	0	2	1		
Total Learning Credits					12		

18PDH103T	Social Engineering	2	0	0	2
18PDH201T	Employability Skills & Practices	0	0	2	1
	Total Learning Credits				12
	Engineering Science Courses (S)				
Course	Course	Hou	rs/ W	/eek	
Code	Title	L	Τ	Р	С
18MES101L	Engineering Graphics and Design	1	0	4	3
18EES101J	Basic Electrical and Electronics Engineering	3	1	2	5
18MES103L	Civil and Mechanical Engineering Workshop	1	0	4	3
18CSS101J	Programming for Problem Solving	3	0	4	5
18PYS201T	Materials Science	3	0	0	3
18NTS101T	Nanoscience and Nanotechnology	3	0	0	3
	Total Learning Credits				22
			-		

Open Elective Courses (O)									
(Any 4 Courses)  Course Course Hours/ Week									
		HOU.	TS/ VV						
Code	Title	L	-	Р	С				
18NTO301T	Applications of Nanotechnology	3	0	0	3				
18NTO302T	Solid State Electronic Devices	3	0	0	3				
18NTO303T	Micro and Nanoelectronics	3	0	0	3				
18NTO304T	Environmental Nanotechnology	3	0	0	3				
18NTO305T	Medical Nanotechnology	3	0	0	3				
18NTO306T	Nanoscale Surface Engineering	3	0	0	3				
	Nanocomputing	3	0	0	3				
18NTO308T	Smart Sensor Systems	3	0	0	3				
18NTO401T	2D Materials and Applications	3	0	0	3				
18NTO402T	Nano and Micro electromechanical Systems	3	0	0	3				
18NTO403T	Scientific Research Principles	3	0	0	3				
18NTO404T	Micro and Nanofluidic Technology	3	0	0	3				
18NTO405T	Thin Film Photovoltaics	3	0	0	3				
	Nanotechnology in Societal Development	3	0	0	3				
18NTO407T	Polymer Engineering	3	0	0	3				
18NTO408T	Industrial Nanotechnology	3	0	0	3				
Total Learning Credits									

	Project Work, Seminar, Internship In Industry / Higher Technical Institutions (P)				
Course	Course	Hou	rs/ W	eek/	
Code	Title	L	T	Р	С
18NTP101L	Massive Open Online Course - I				
18NTP102L	Industrial Training-I	0	0	2	1
18NTP103L	Seminar - I				
18NTP104L	Massive Open Online Course - II				
18NTP105L	Industrial Training-II	0	0	2	1
18NTP106L	Seminar - II				
18NTP107L	Minor Project	0	0	6	3
18NTP108L	Internship (4-6 weeks)	U	0	U	3
18NTP109L	Project	0	0	20	10
18NTP110L	Semester Internship	U	0	20	10
	Total Learning Credits				15

Professional Elective Courses (E)								
	(Any 6 Elective Courses)							
Course	Course	Hou	rs/ W	eek				
Code	Title	L	Τ	Ч	С			
18NTE301T	Carbon Nanotechnology	3	0	0	3			
18NTE302T	Physics of Solid State Devices	3	0	0	3			
18NTE303T	Molecular spectroscopy and its applications	3	0	0	3			
18NTE304T	Nanotribology	3	0	0	3			
18NTE305T	Nanotechnology Legal Aspects	3	0	0	3			
18NTE306T	Lithographic Techniques and Fabrication	3	0	0	3			

Basic Science Courses (B)									
Course	Course	Hou	rs/ W	/eek					
Code	Title	L	Τ	Р	С				
18PYB103J	Physics: Semiconductor Physics	3	1	2	5				
18CYB101J		3	1	2	5				
18MAB101T	Calculus and Linear Algebra	3	1	0	4				
18MAB102T	Advanced Calculus and Complex Analysis	3	1	0	4				
	Transforms and Boundary Value Problems	3	1	0	4				
18MAB202T	Numerical Methods for Engineers	3	1	0	4				
18MAB203T	Probability and Stochastic Processes	3	1	0	4				
18BTB101T	Biology	2	0	0	2				
Total Learning Credits									

Professional Core Courses (C)								
Course	Course	Hou	rs/ W					
Code	Title	L	Т	Р	С			
18NTC101T	Nanoscale Chemistry	3	0	0	3			
18NTC102T	Quantum Mechanics for Nanotechnologists	3	0	0	3			
18NTC103L	Nanoscale Materials Laboratory	0	0	2	1			
18NTC104T	Thermodynamics and Statistical Mechanics	3	0	0	3			
18NTC105T	Biological Principles for Nanoscale Science	3	0	0	3			
18NTC106T	Design and Synthesis of Nanomaterials	3	0	0	3			
18NTC107J	Advanced Characterization of Nanomaterials	3	0	2	4			
18NTC108T	Modeling and Computational Tools	3	0	0	3			
18NTC109T	Solid State Engineering	3	0	0	3			
18NTC201T	Nanophotonics	3	0	0	3			
18NTC202J	Nanobiotechnology	3	0	2	4			
	Nanotoxicology	3	0	0	3			
18NTC204J	Nanoelectronics	3	0	2	4			
18NTC205J	Micro and Nanofabrication	3	0	2	4			
18NTC301J	Polymer and Nanocomposites	3	0	2	4			
18NTC350T	Comprehension	0	1	0	1			
Total Learning Credits								

	Mandatory Courses (M)				
Code	Course Title	L	Τ	Р	C
18PDM101L	Professional Skills and Practices	0	0	2	0
18PDM201L	Competencies in Social Skills	0	0	2	0
18PDM203L	Entrepreneurial Skill Development	U	U	2	U
18PDM202L	Critical and Creative Thinking Skills	0	0	2	0
18PDM204L	Business Basics for Entrepreneurs	U	U	2	U
18PDM301L	Analytical and Logical Thinking Skills	0	0	2	0
18PDM302L	Entrepreneurship Management	U	U	2	U
18LEM101T	Constitution of India	1	0	0	0
18LEM102J	Value Education	1	0	1	0
18GNM101L	Physical and Mental Health using Yoga	0	0	2	0
18GNM102L	NSS				
18GNM103L	NCC	0	0	2	0
18GNM104L	NSO				
18LEM109T	Indian Traditional Knowledge	1	0	0	0
18LEM110L	Indian Art Form	0	0	2	0
18CYM101T	Environmental Science	1	0	0	0

	Professional Elective Courses (E)					
Course	Hou	rs/ W	/eek			
Code	Title	L	T	Р	С	
18NTE317T	Nanocatalysts	3	0	0	3	
18NTE318T	Nano and Micro Emulsions	3	0	0	3	
18NTE401T	Nanorobotics	3	0	0	3	
18NTE402T	Micro and Nanofluids	3	0	0	3	
18NTE403T	Nanotechnology for Energy Systems	3	0	0	3	
18NTE404T	Photovoltaic technology	3	0	0	3	
18NTE405T	Nanotechnology in Cosmetics	3	0	0	3	

18NTE307T	Sensors and Transducers	3	0	0	3	
	2D Layered Nanomaterials	3	0	0	3	
18NTE309T	Supramolecular Systems	3	0	0	3	
18NTE310T	MEMS and NEMS	3	0	0	3	
18NTE311T	Surface and Interfaces	3	0	0	3	
18NTE312T	Nano Technology in Food Production	3	0	0	3	
	Advanced Drug Delivery Systems	3	0	0	3	
18NTE314T	Nanomedicines	3	0	0	3	
18NTE315T	Microelectronics and VLSI	3	0	0	3	
	Physics of Electronic Materials	3	0	0	3	
18NTE317T	Nanocatalysts	3	0	0	3	

18NTE406T	Green Nanotechnology	3	0	0	3
	Advanced Computational Techniques	3	0	0	3
18NTE408T	Nanotechnology in Textiles	3	0	0	3
18NTE409T	Cancer Nanotechnology	3	0	0	3
18NTE410T	Vacuum and Thinfilm Technology	3	0	0	3
18NTE411T	Atomistic Modeling	3	0	0	3
18NTE412T	Societal Implications of Nanotechnology	3	0	0	3
18NTE413T	Nanotechnology In Tissue Engineering	3	0	0	3
18NTE414T	Nanomagnetism and Spintronics	3	0	0	3
	Total Learning Credits				18

## 33. (f) Program Articulation: B.Tech. in Nanotechnology

				Р	rog	ram	Lea	arni	ng (	Outo	com	es (	PLO	<b>D</b> )		
						Grad						'		,	PSO	
					5			lity								
Course Code	Course Name	Engineering Knowledge	Problem Analysis	Design & Development	Analysis, Design, Research	Modern Tool Usage	Society & Culture	Environment & Sustainability	H Ethics	Individual & Team Work	Communication	Project Mgt. & Finance     Project Mgt.	T Life Long Learning	PSO - 1	PSO-2	PSO-3
18NTC101T	Nanoscale Chemistry	М	M	Н	Ĥ	M	M	H	H	H	Н	M	H	Ĥ	H	H
18NTC102T	Quantum Mechanics for Nanotechnologists	М	М	Н	М	М	М	М	Н	Н	Н	М	Н	Н	Н	М
	Nanoscale Materials Laboratory	М	М	Н	Н	М	М	М	Н	Н	Н	М	Н	Н	Н	М
	Thermodynamics and Statistical Mechanics	М	Н	Н	Н	М	М	L	М	М	Н	L	Н	Н	Н	Н
	Biological Principles for Nanoscale Science	Н	Н	Н	Н	Н	М	Н	Н	Н	Н	М	Н	Н	Н	М
	Design and Synthesis of Nanomaterials	М	Н	Н	М	М	M	М	Н	М	Н	L	Н	Н	Н	М
	Advanced Characterization of Nanomaterials	M	M	Н	М	M H	M	M	Н	Н	Н	M	Н	Н	H	М
	Modeling and Computational Tools	М	M	H	H	Н	M	M	H	Н	H	M	Н	Н	H	Н
	Solid State Engineering	H M	М	Н		Н	M H	M		Н	Н	M	H	H	Н	Н
18NTC201	Nanophotonics Nanobiotechnology	Н	H	М	H	М	Н	M	H	H	М	M	Н	Н	H	H
	Nanotoxicology	Н	M	M	Н	H	Н	М	Н	Н	Н	L	Н	Н	Н	Н
	Nanoelectronics	Н	Н	M	М	- M	М	H	Н	Н	Н	M	Н	Н	Н	Н
	Micro and Nanofabrication	Н	М	Н	Н	Н	M	М	Н	Н	Н	M	М	Н	Н	Н
	Polymer and Nanocomposites	Н	M	Н	Н	Н	M	М	Н	Н	Н	M	Н	Н	Н	Н
	Carbon Nanotechnology	Н	Н	Н	Н	М	М	М	Н	Н	Н	М	Н	Н	Н	Н
	Physics of Solid State Devices	Н	Н	Н	Н	M	Н	M	Н	Н	Н	M	Н	Н	Н	Н
	Molecular spectroscopy and its applications	Н	М	М	Н	M	М	М	Н	М	Н	L	Н	Н	Н	М
	Nanotribology	Н	Н	Н	Н	М	М	М	Н	Н	Н	M	Н	Н	Н	Н
18NTE305T	Nanotechnology Legal Aspects	М	М	М	М	L	М	М	М	М	Н	М	Н	М	М	М
	Lithography Techniques and Fabrication	Н	М	Н	Н	Н	М	М	Н	Н	Н	М	М	Н	Н	Н
	Sensors and Transducers	Н	М	Н	Н	Н	М	М	Н	Н	Н	М	М	Н	Н	Н
18NTE308T	2D Layered Nanomaterials	М	Н	Н	Н	Н	Н	М	Н	Н	Н	М	Н	Н	Н	Н
18NTE309T	Supramolecular Systems	Н	М	М	Н	М	М	М	Н	М	Н	L	Н	Н	Н	М
18NTE310T	MEMS and NEMS	Н	М	Н	Н	Н	М	М	Н	Н	Н	М	М	Н	Н	Н
	Surface and Interfaces	Н	М	М	Н	М	М	М	Н	М	Н	L	Н	Н	Н	М
	Nano Technology in Food Production	М	Н	М	М	М	Н	Н	Н	М	Н	Н	Н	Н	Н	Н
	Advanced Drug Delivery Systems	Н	М	М	Н	Н	Н	М	Н	Н	Н	L	Н	Н	Н	Н
	Nanomedicines	Н	М	H	Н	Н	М	М	Н	Н	Н	М	М	Н	Н	Н
	Microelectronics and VLSI	Н	Н	Н	Н	Н	М	М	Н	Н	Н	М	М	Н	Н	Н
	Physics of Electronic Materials Nanocatalysts	H	M M	М	H	L	М	M	M H	М	H	М	H	M H	M H	M H
	Nano and Micro Emulsions	Н	M	H	Н	M	M	M	Н	M	Н	L M	Н	Н	Н	Н
	Nanorobotics	Н	Н	Н	Н	M H	H	М	Н	M	Н	M	Н	Н	Н	Н
	Micro and Nanofluids	Н	М	Н	Н	М	М	М	Н	M	Н	M	Н	Н	Н	Н
	Nanotechnology for Energy Systems	Н	Н	Н	Н	Н	Н	M	Н	M	Н	Н	Н	Н	Н	Н
	Photovoltaic technology	Н	Н	Н	Н	H	Н	M	Н	M	Н	Н	Н	Н	Н	Н
	Nanotechnology in Cosmetics	H	М	Н	Н	Н	М	М	Н	Н	Н	М	М	Н	Н	H
	Green Nanotechnology	Н	М	Н	Н	Н	Н	М	Н	М	Н	Н	Н	Н	Н	М
	Advanced Computational Techniques	Н	Н	Н	Н	Н	Н	М	Н	М	Н	М	Н	Н	Н	Н
	Nanotechnology in Textiles	Н	М	Н	Н	Н	Н	М	Н	Н	Н	М	М	Н	Н	Н
	Cancer Nanotechnology	Н	М	Н	Н	Н	М	М	Н	Н	Н	М	М	Н	Н	Н
	Vacuum and Thinfilm Technology	Н	М	Н	Н	Н	М	М	Н	Н	Н	М	Н	Н	Н	Н
18NTE411T	Atomistic Modeling	Н	Н	Н	Н	Н	Н	М	Н	М	Н	М	Н	Н	Н	Н
18NTE412T	Societal Implications of Nanotechnology	Н	М	Н	Н	Н	Н	Н	М	М	Н	М	Н	Н	Н	Н
	Nanotechnology In Tissue Engineering	Н	М	Н	Н	Н	М	М	Н	Н	Н	М	М	Н	Н	Н
	Nanomagnetism and Spintronics	Н	Н	Н	Н	Н	Н	М	Н	М	Н	Н	Н	Н	Н	Н
	Massive Open Online Course - I	Н	М	М	М	М	М	М	М	Н	Н	Н	М	Н	Н	Н
	Industrial Training-I	Н	М	М	М	М	М	М	М	Н	Н	Н	М	Н	Н	Н
18NTP103L		Н	М	М	М	М	М	М	М	Н	Н	Н	М	Н	Н	Н
18NTP104L	Massive Open Online Course - II	Н	М	М	М	М	М	М	М	Н	Н	Н	М	Н	Н	Н
18NTP105L	Industrial Training-II	Н	М	М	М	М	М	М	М	Н	Н	Н	М	Н	Н	Н
18NTP106L	Seminar - II	Н	М	М	М	М	М	М	М	Н	Н	Н	М	Н	Н	Н
	Minor Project	Н	Н	Н	Н	Н	М	М	Н	Н	Н	Н	Н	Н	М	М
. OITTI TOTE	minor i rojout	11	"	''		11	IVI	IVI	1.1	11	11	11	11	1.1	IVI	IVI

18NTP108L	Internship (4-6 weeks)	Н	Н	Н	Н	Н	М	М	Н	Н	Н	Н	Н	Н	М	М
18NTP109L	Project	М	М	Н	Н	М	М	Н	Н	Н	Н	М	Н	Н	Н	Н
18NTP110L	Semester Internship	М	М	Н	Н	М	М	Н	Н	Н	Н	М	Н	Н	Н	Н
	Program Average	Н	М	Н	Н	М	М	М	Н	Н	Н	М	Н	Н	Н	М

H – High Correlation, M – Medium Correlation, L – Low Correlation

#### 33. (g) Implementation Plan: B.Tech. in Nanotechnology

	Semester - I						Semester - II	1			
Code	Course Title	Ho	urs/ \	Week P	С	Code	Course Title	Hou	rs/ W	Veek P	С
18LEH101J	English	2	0	2	3	18LEH10XJ	Chinese / French / German / Japanese/	2	0	2	3
	Calculus and Linear Algebra	3	1		4		Korean				
	Physics: Semiconductor Physics	3	1		5		Advanced Calculus and Complex Analysis	3	1	0	4
	Engineering Graphics and Design	1	0		3	18CYB101J	Chemistry	3	1	2	5
	Basic Electrical and Electronics Engineering	3	1		5	18CSS101J	Programming for Problem Solving	3	0	4	5
	Professional Skills and Practices	0	0		0		Civil and Mechanical Engineering Workshop	1	0	4	3
	Constitution of India	1	0		0		General Aptitude	0	0	2	0
18GNW101L	Physical and Mental Health using Yoga  Total Learning Credi		0	2	20	18GNM102J	Value Education	1	U	- 1	U
	Total Learning Credi	.5			20	18GNM103L		0	0	2	0
		7				18GNM104L		1		-	U
						70071117072	Total Learning Credits	3			21
	Semester - III										
	Semester - III	IIIa	/ \	Maak	1		Semester - IV	Harr	/ \A	laalı	
Code	Course Title	HOI	JIS/ \	Week P	С	Code	Course Title	Hou	rs/ W	P	С
10MAD202T	Probability and Stochastic Processes	3	1	<u> </u>	4	101110000	Numerical Methods for Engineers	3	1	0	4
	Nanoscience and Nanotechnology	3	0		3	18BTB101T		2	0	0	2
	Materials Science	3	0		3		Biological Principles for Nanoscale Science	3	0	0	3
	Nanoscale Chemistry	3	0		3		Design and Synthesis of Nanomaterials	3	0	0	3
	Quantum Mechanics for Nanotechnologists	3	0		3		Advanced Characterization of Nanomaterials	3	0	2	4
	Nanoscale Materials Laboratory	0	0		1		Modeling and Computational Tools	3	0	0	3
	Thermodynamics and Statistical Mechanics	3	0		3		Solid State Engineering	3	0	0	3
	Social Engineering	2	0		2		Management Principles for Engineers	2	0	0	2
	Competencies in Social Skills	0	0	2	_	18PDM2021	Critical and Creative Thinking Skills				
								0	0	2	0
18PDM203L	Entrepreneurial Skill Development	U			0		Business Basics for Entrepreneurs	0	ľ	1	
18PDM203L	Entrepreneurial Skill Development Environmental Science Total Learning Credit	1	0		0 22		Business Basics for Entrepreneurs  Total Learning Credits	ŭ			24
18PDM203L	Environmental Science	1	0	0	0 22			3			24
18PDM203L	Environmental Science Total Learning Credii	1	0		0 22		Total Learning Credits	3	rs/ W	Veek	
18PDM203L 18CYM101T Code	Environmental Science Total Learning Credit	1	0 urs/	0 Week	0 22	18PDM204L  Code	Total Learning Credits Semester - VI	3	rs/ W		С
18PDM203L 18CYM101T Code 18MAB301T	Total Learning Credi  Semester - V  Course Title	Hou L	urs/\	Week	0 22 C	18PDM204L  Code  18NTC203T	Total Learning Credits  Semester - VI  Course Title	Hou	rs/ W	Р	C 3
18PDM203L 18CYM101T Code 18MAB301T 18NTC201T	Total Learning Credi  Semester - V  Course Title  Probability and Statistics	1   Horizontal   Horizontal   1	0 urs/\ T 1	Week P 0 0	0 22 C 4 3	Code 18NTC203T 18NTC204J	Total Learning Credits  Semester - VI  Course Title  Nanotoxicology	Hou L 3 3	rs/ W	P 0	C 3
18PDM203L 18CYM101T Code 18MAB301T 18NTC201T	Semester - V  Course Title  Probability and Statistics Nanophotonics Nanobiotechnology Professional Elective – 1	Hon L 3 3 3 3 3 3	0 Uurs/\\T\\1\\0\\0\\0\\0\\0\\0\\0\\0\\0\\0\\0\\0\	0 Week P 0 0	0 22 C 4 3 4	Code 18NTC203T 18NTC204J 18NTC205J	Semester - VI  Course Title  Nanotoxicology Nanoelectronics Micro and Nanofabrication Comprehension	Hou L 3 3 3	rs/ W T 0 0 0	P 0 2 2 0	C 3 4 4 1
18PDM203L 18CYM101T Code 18MAB301T 18NTC201T	Semester - V Course Title Probability and Statistics Nanophotonics Nanobiotechnology Professional Elective - 1 Professional Elective - 2	Hon L 3 3 3 3 3 3 3 3	0 urs/\\T 1 1 0 0	Week P 0 0 2 0 0 0	0 22 C 4 3 4 3 3	Code 18NTC203T 18NTC204J 18NTC205J	Semester - VI  Course Title  Nanotoxicology Nanoelectronics Micro and Nanofabrication Comprehension Professional Elective – 3	Hou L 3 3 0 0	rs/ W T 0 0 0	P 0 2 2 0 0 0	C 3 4 4 1 1 3
18PDM203L 18CYM101T Code 18MAB301T 18NTC201T	Semester - V  Course Title  Probability and Statistics Nanophotonics Nanobiotechnology Professional Elective – 1 Professional Elective – 2 Open Elective – 1	Hon L 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	0 urs/\tag{1} 1 1 0 0 0 0	0 Week! P 0 0 0 0 0	0 22 C 4 3 4 3 3 3	Code 18NTC203T 18NTC204J 18NTC205J	Semester - VI  Course Title  Nanotoxicology Nanoelectronics Micro and Nanofabrication Comprehension Professional Elective – 3 Professional Elective – 4	Hou L 3 3 3 0 0 3 3 3 3	T 0 0 0 1 0 0 0 0	P 0 2 2 0 0 0 0	C 33 44 44 11 33 3
18PDM203L 18CYM101T Code 18MAB301T 18NTC201T 18NTC202J	Semester - V Course Title Probability and Statistics Nanophotonics Nanobiotechnology Professional Elective - 1 Professional Elective - 2 Open Elective - 1 Open Elective - 2	Hon L 3 3 3 3 3 3 3 3	0 urs/\tag{1} 1 1 0 0 0 0	0 Week! P 0 0 0 0 0	0 22 C 4 3 4 3 3	Code 18NTC203T 18NTC204J 18NTC205J 18NTC350T	Semester - VI  Course Title  Nanotoxicology Nanoelectronics Micro and Nanofabrication Comprehension Professional Elective – 3 Professional Elective – 4 Open Elective – 3	Hou L 3 3 0 0	rs/ W T 0 0 0	P 0 2 2 0 0 0	C 33 44 44 11 33 3
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18PDM203L 18CYM101T Code 18MAB301T 18NTC201T 18NTC202J	Environmental Science  Total Learning Credit  Semester - V  Course Title  Probability and Statistics  Nanophotonics  Nanobiotechnology  Professional Elective – 1  Professional Elective – 2  Open Elective – 1  Open Elective – 2  Massive Open Online Course - I  Industrial Training-I	Hon L 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	0 urs/\tag{1} 1 1 0 0 0 0	0 Week P 0 0 0 2 2 0 0	0 22 C 4 3 4 3 3 3	Code 18NTC203T 18NTC204J 18NTC350T 18NTP104L 18NTP105L	Semester - VI Course Title Nanotoxicology Nanoelectronics Micro and Nanofabrication Comprehension Professional Elective – 3 Professional Elective – 4 Open Elective – 3 Massive Open Online Course - II Industrial Training-II	Hou L 3 3 3 0 0 3 3 3 3	T 0 0 0 1 0 0 0 0	P 0 2 2 0 0 0 0	C 3 4 4 4 1 3 3 3 3 3 3
18PDM203L 18CYM101T Code 18MAB301T 18NTC201T 18NTC202J	Environmental Science  Total Learning Credit  Semester - V  Course Title  Probability and Statistics  Nanophotonics  Nanobiotechnology  Professional Elective – 1  Professional Elective – 2  Open Elective – 2  Massive Open Online Course - I  Industrial Training-I  Seminar - I	Horizon 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	0 urs/\\ T 1 0 0 0 0 0 0	0 Week P 0 0 0 2 2 0 0	0 22 C 4 3 4 3 3 3 3	Code 18NTC203T 18NTC205J 18NTC350T 18NTP104L 18NTP105L 18NTP106L	Semester - VI  Course Title  Nanotoxicology Nanoelectronics Micro and Nanofabrication Comprehension Professional Elective – 3 Professional Elective – 4 Open Elective – 3 Massive Open Online Course - II Industrial Training-II Seminar - II	Hou L 3 3 3 0 3 3 3	T 0 0 0 1 0 0 0 0 0 0	P 0 2 2 0 0 0 0	C 3 4 4 4 1 1 3 3 3 3 3 1 1
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