



JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA
 Kakinada-533003, Andhra Pradesh (India)

Comparison of Program Structure R16 with R19

Program Code	Program Name	Total No. of Courses			No of Subjects			Total Courses	Percentage %
		R16	R19	Added in (R19)	Deleted (R16)	Content revised more than 20%			
96	M.Tech – Nanotechnology	19	20	8	1	3	12	60%	

Coordinator

N. K. S.

B. S. S.
REGISTRAR

J.N.T. University Kakinada
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Chairman, BOS



JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA

Kakinada-533003, Andhra Pradesh (India)

Comparison of Course Structure R19 with R16

Program Code:96

Program Name:M.Tech -Nanotechnology

Year: 1

Semester: 1

R16					R19					Remarks				
Course code	Course name	L	T	P	C	Course code	Course name	L	T	P	C	New Course? (R19)	Deleted Course? (R16)	Content Revision %
1	Introduction to Nanomaterials	4			3	Core-1	Introduction to Nano materials and Applications	3			3			20
2	Synthesis of Nanomaterials & Properties	4			3	Core-2	Synthesis of Nano materials	3			3			20
3	Nanomaterials Characterization	4			3	Elective-1	a) Thin film Science and Technology b) Nanomaterials for Energy Systems c) Nano Photonics & Plasmonics	3			3			10
4	Thin film Science and Technology	4			3	Elective-2	a) Nano Fluidics b) Nanoscopic Dielectric and Ferroelectric materials c) Carbon Nanostructures and Applications	3			3			10
5	Elective-1 1. Surface Engineering of Nanomaterials 2. Computational Nanotechnology 3. Colloid and Interface Science	4			3	Core	Research Methodology and IPR	2			2	Yes		
6	Elective-2 1. Nano Fluidics 2. Piezo & Pyroelectric Nanomaterials 3. Carbon Nanostructures and Applications 3. Carbon Nanostructures and Applications	4			3	Lab-1	Nanomaterials synthesis Lab			4	2			25
7	Synthesis and Characterization Lab Interpretation Lab			2	2	Lab-2	Nanomaterials Simulation Lab			4	2			25
						Audit –1	Writing skills for Scientific Communication	2			0	Yes		
TOTAL											18	2		2

Program Code: 96

Program Name: M.Tech - Nanotechnology

Year : 1

Semester: 2

R16					R19					Remarks				
Course code	Course name	L	T	P	C	Course code	Course name	L	T	P	C	New Course? (R19)	Deleted Course? (R16)	Content Revision %
1	Green Nanotechnology	4			3	Core-3	Nano Material Characterization Techniques	3			3			15
2	Nanoelectronics	4			3	Core-4	Nano Sensors and its Applications	3			3	Yes		
3	Nanotechnology for Energy Systems	4			3	Elective-3	a) Biomedical Nanotechnology b) Nano Composites and Applications c) Computational Nanotechnology	3			3			15
4	Multifunctional Nanomaterials	4			3	Elective-4	a) Nanoscale Magnetic Materials and Devices b) MEMS and NEMS c) Multifunctional Nanomaterials	3			3			10
5	Elective-3 1. Biomedical Nanotechnology 2. Nano Composites and Applications 3. Nano Photonics and Plasmonics	4			3	Lab-3	Nanomaterials Characterization Lab	2			2			32
6	Elective-4 1. Nanoscale Magnetic Materials and Devices 2. MEMS and NEMS 3. Micro and Nano Mechanics	4			3	Lab-4	Advanced Nanotechnology Laboratory			4	2	Yes		
7	Mathematical Modeling and Simulation of Nano Materials Lab			2	2	Core	Mini Project with Seminar			4	2	Yes		
						Audit -2	Personality development through life-enlightenment skills	2			0	Yes		
TOTAL											18	4		1

Program Code: 96

Program Name: M.Tech - Nanotechnology

Year : 2

Semester: 3

R16					R19					Remarks				
Course code	Course name	L	T	P	C	Course code	Course name	L	T	P	C	New Course? (R19)	Deleted Course? (R16)	Content Revision %
1	Comprehensive Viva-Voce				2	Elective-V	a) MOOCS b) Societal impact of Nanotechnology c) Nano Electronics				3	Yes		
2	Seminar – I				2	Open Elective	a) Nanotechnology and its Engineering Applications b) Nano sensors and Applications c) NEMS and MEMS c) Nanotechnology for energy systems				3	Yes		
3	Project Work Part – I				16	Dissertation	Dissertation Phase-I /Industrial Project (To be continued and Evaluated next Semester)*				10			
TOTAL											16	2		

Program Code: 96

Program Name: M.Tech - Nanotechnology

Year : 2

Semester: 4

R16					R19					Remarks				
Course code	Course name	L	T	P	C	Course code	Course name	L	T	P	C	New Course? (R19)	Deleted Course? (R16)	Content Revision %
1	Seminar – II				2	Dissertation	Dissertation Phase II (Continued from III semester)				16		Yes	
3	Project Work Part – II				18									
TOTAL											16		1	

Coordinator

Chairman, Board of Studies