




## 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%		
15LR00	B.Pharmacy	63	65	37	0	27	64	98

  
 Coordinator

  
**REGISTRAR**  
 J.N.T. University Kakinada  
 Kakinada-533003

  
**Special Officer**  
 Dr. G.V.S.P. Dasakshamma  
 Special Officer  
 School of Distance Education  
 Jawaharlal Nehru Technological University  
 Kakinada - 533003  
 PIN - 533003



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Kakinada-533003, Andhra Pradesh (India)

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### 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%		
IS1R00	B.Pharmacy	63	65	37	0	27	64	98

Coordinator

Director



# JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA

Kakinada-533003, Andhra Pradesh (India)

## Comparison of Course Structure R16 with R19

Program Code: IS1R00

Program Name: B.Pharmacy

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 %	
PHR16111	English	4	1		3	BP101T	Human Anatomy and Physiology I – Theory	3	1		4			30	
PHR16112	Remedial Mathematics / Remedial Biology	4			0	BP102T	Pharmaceutical Analysis I – Theory	3	1		4			20	
PHR16113	Human Anatomy & Physiology – I	4	1		3	BP103T	Pharmaceutics I – Theory	3	1		4			20	
PHR16114	General & Dispensing Pharmacy	4	1		3	BP104T	Pharmaceutical Inorganic Chemistry – Theory	3	1		4			30	
PHR16115	Pharmaceutical Organic Chemistry-I	4	1		3	BP105T	Communication skills – Theory	2	1		2	Yes			
PHR16116	English Communications Skills Lab			3	2	MPL105PB P BP106RBT BP106RMT	Remedial Biology/ Remedial Mathematics – Theory	2	1		2			30	
PHR16117	Remedial Biology Lab			2	0	BP107P	Human Anatomy and Physiology – Practical			4	2			30	
PHR16118	General & Dispensing Pharmacy Lab			3	2	BP108P	Pharmaceutical Analysis I – Practical			4	2	Yes			
PHR16119	Pharmaceutical Organic Chemistry-I Lab			3	2	BP109P	Pharmaceutics I – Practical			4	2			20	
						BP110P	Pharmaceutical Inorganic Chemistry – Practical			4	2	Yes			
						BP111P	Communication skills – Practical			2	1			40	
						BP112RBP	Remedial Biology – Practical			2	1			40	
<b>TOTAL</b>															
					<b>18</b>	<b>TOTAL</b>					<b>16</b>	<b>6</b>	<b>20</b>	<b>30</b>	<b>03</b>

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Kakinada-533003, Andhra Pradesh (India)

## Comparison of Course Structure R16 with R19

Program Code: IS1R00

Program Name: B.Pharmacy

Year : 1

Semester: II

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 %	
PHR16121	Human Anatomy & Physiology – II	4	1		3	BP201T	Human Anatomy and Physiology II – Theory	3	1		4			10	
PHR16122	Pharm. Inorganic Chemistry	4	1		3	BP202T	Pharmaceutical Organic Chemistry I – Theory	3	1		4			10	
PHR16123	Pharm. Organic Chemistry – II	4	1		3	BP203T	Biochemistry – Theory	3	1		4			30	
PHR16124	Physical Pharmacy – I	4	1		3	BP204T	Pathophysiology – Theory	3	1		4	Yes			
PHR16125	Computer Applications & Biostatistics	4	1		3	BP205T	Computer Applications in Pharmacy – Theory	3			3			40	
PHR16126	Human Anatomy & Physiology Lab				3	2	BP206T	Environmental sciences – Theory	3			3	Yes		
PHR16127	Physical Pharmacy – I Lab				3	2	BP207T	Human Anatomy and Physiology II – Practical			4	2	Yes		
PHR16128	Computer Applications Lab				3	2	BP208T	Pharmaceutical Organic Chemistry I – Practical			4	2	Yes		
							BP209T	Biochemistry – Practical			4	2	Yes		
							BP210T	Computer Applications in Pharmacy – Practical			2	1			40
<b>TOTAL</b>															
					18	<b>TOTAL</b>									
											18	05			1

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## Comparison of Course Structure R16 with R19

Program Code: IS1R00

Program Name: B.Pharmacy

Year : II

Semester: I

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 %
PHR16211	Pharmaceutical Unit Operations - I	4	1		3	BP301T	Pharmaceutical Organic Chemistry II – Theory	3	1		4			10
PHR16212	Pharmaceutical Biochemistry	4	1		3	BP302T	Physical Pharmaceutics I – Theory	3	1		4			30
PHR16213	Physical Pharmacy - II	4	1		3	BP303T	Pharmaceutical Microbiology – Theory	3	1		4			40
PHR16214	Pharmaceutical Microbiology	4	1		3	BP304T	Pharmaceutical Engineering – Theory	3	1		4	Yes		
PHR16215	Health Education & Pathophysiology	4	1		3	BP305T	Pharmaceutical Organic Chemistry II – Practical			4	2	Yes		
PHR16216	Pharmaceutical Biochemistry Lab			3	2	BP306T	Physical Pharmaceutics I – Practical			4	2			40
PHR16217	Physical Pharmacy – II Lab			3	2	BP307T	Pharmaceutical Microbiology – Practical			4	2	Yes		
PHR16218	Pharmaceutical Microbiology Lab			3	2	BP308T	Pharmaceutical Engineering –Practical			4	2	Yes		
<b>TOTAL</b>											24	04		

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Program Code: IS1R00

Program Name: B.Pharmacy

Year : II

Semester: II

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 %	
PHR16221	Pharmaceutical Unit Operations –II	4	1		3	BP401T	Pharmaceutical Organic Chemistry III– Theory	3	1		4	yes			
PHR16222	Pharmaceutical Analysis - I	4	1		3	BP402T	Medicinal Chemistry I – Theory	3	1		4			30	
PHR16223	Pharmacognosy -I	4	1		3	BP403T	Physical Pharmaceutics II – Theory	3	1		4	Yes		20	
PHR16224	Medicinal Chemistry - I	4	1		3	BP404T	Pharmacology I – Theory	3	1		4			20	
PHR16225	Pharmacology - I	4	1		3	BP405T	Pharmacognosy and Phytochemistry I– Theory	3			4			40	
PHR16226	Pharmaceutical Unit Operations Lab				3	2	BP406T	Medicinal Chemistry I – Practical			4	2	yes		
PHR16227	Pharmaceutical Analysis – I Lab				3	2	BP407T	Physical Pharmaceutics II – Practical			4	2	yes		
PHR16228	Pharmacognosy – I Lab				3	2	BP408T	Pharmacology I – Practical			4	2	yes		
							BP409T	Pharmacognosy and Phytochemistry I – Practical			4	2			40
<b>TOTAL</b>															18
					<b>TOTAL</b>										28
															05

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## Comparison of Course Structure R16 with R19

Program Code: IS1R00

Program Name: B.Pharmacy

Year : III

Semester:

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 %
PHR16311	Pharmacognosy -II	4	1		3	BP501T	Medicinal Chemistry II – Theory	3	1		4			40
PHR16312	Medicinal Chemistry - II	4	1		3	BP502T	Industrial PharmacyI– Theory	3	1		4	yes		
PHR16313	Pharmaceutical Technology - I	4	1		3	BP503T	Pharmacology II – Theory	3	1		4			30
PHR16314	Environmental Sciences	4	1		3	BP504T	Pharmacognosy and Phytochemistry II– Theory	3	1		4			30
PHR16315	Pharmaceutical Management	4	1		3	BP505T	Pharmaceutical Jurisprudence – Theory	3			4	Yes		
PHR16316	Pharmacognosy –II Lab			3	2	BP506T	Industrial PharmacyI – Practical			4	2	Yes		
PHR16317	Pharmaceutical Analysis – I Lab			3	2	BP507T	Pharmacology II – Practical			4	2	Yes		30
PHR16318	Pharmaceutical Technology-I Lab			3	2	BP508T	Pharmacognosy and Phytochemistry II – Practical			4	2			30
<b>TOTAL</b>														
					18	<b>TOTAL</b>								04

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Program Code: IS1R00

Program Name: B.Pharmacy

Year : III

Semester: II

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 %	
PHR16321	Pharmaceutical Technology -II	4	1		3	BP601T	Medicinal Chemistry III – Theory	3	1		4	YES			
PHR16322	Pharm. Biotechnology	4	1		3	BP602T	Pharmacology III – Theory	3	1		4	YES			
PHR16323	Pharmacology - II	4	1		3	BP603T	Herbal Drug Technology – Theory	3	1		4	Yes			
PHR16324	Medicinal Chemistry - III	4	1		3	BP604T	Biopharmaceutics and Pharmacokinetics –Theory	3	1		4			30	
PHR16325	Regulatory Affairs, IPR & Patents	4	1		3	BP605T	Pharmaceutical Biotechnology – Theory	3			4			40	
PHR16326	Pharmaceutical Technology –II Lab				3	2	BP606T	Quality Assurance –Theory	3			4	yes		
PHR16327	Pharm. Biotechnology Lab				3	2	BP607T	Medicinal chemistry III – Practical				4	2	yes	
PHR16328	Pharmacology Lab				3	2	BP608T	Pharmacology III – Practical				4	2	yes	
							BP609T	Herbal Drug Technology – Practical				4	2	yes	
<b>TOTAL</b>												30	07		



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Program Code: IS1R00

Program Name: B.Pharmacy

Year : IV

Semester:

I

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 %
PHR16411	Pharmaceutical Analysis -II	4	1		3	BP701T	Instrumental Methods of Analysis – Theory	3	1		4	Yes		
PHR16412	Biopharmaceutics& Pharmacokinetics	4	1		3	BP702T	Industrial Pharmacy II – Theory	3	1		4	Yes		
PHR16413	Chemistry of Natural Products	4	1		3	BP703T	Pharmacy Practice – Theory	3	1		4	Yes		
PHR16414	Hospital & Community Pharmacy	4	1		3	BP704T	Novel Drug Delivery System – Theory	3	1		4	Yes		
PHR16415	Pharmaceutical Jurisprudence	4	1		3	BP705T	Instrumental Methods of Analysis – Practical			4	2	Yes		
PHR16416	Pharmaceutical Analysis – II Lab			3	2	BP706PS	Practice School				6			
PHR16417	Biopharmaceutics& Pharmacokinetics Lab			3	2									
PHR16418	Chemistry of Natural Products Lab			3	2									
	Project Commencement													
<b>TOTAL</b>											18	05		
					<b>TOTAL</b>							18	05	

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## Comparison of Course Structure R16 with R19

Program Code: IS1R00

Program Name: B.Pharmacy

Year : IV

Semester: II

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 %
PHR16421	Bioassays & Toxicology	4	1		3	BP801T	Biostatistics and Research Methodology	3	1		4	Yes		
PHR16422	Clinical Pharmacy, Therapeutics &Pharmaco vigilance	4	1		3	BP802T	Social and Preventive Pharmacy	3	1		4	Yes		
PHR16423	Controlled release & Novel Drug Delivery Systems	4	1		3	BP803TElective	Pharma Marketing Management	3+3 = 06	1		4	Yes		
PHR16424	Quality Assurance, GMP, GLP	4	1		3	BP804T Elective	Pharmaceutical Regulatory Science		1		= 8	Yes		
PHR16425	Bioassays & Toxicology Lab	4	1		3	BP805T Elective	Pharmacovigilance					Yes		
PHR16426	Seminar on selected topic			3	2	BP806T Elective	Quality Control and Standardization of Herbals			4		Yes		
PHR16427	Project Work			3	2	BP807T Elective	Computer Aided Drug Design					Yes		
PHR16428	Comprehensive Viva voce			3	2	BP808T Elective	Cell and Molecular Biology					Yes		
						BP809T Elective	Cosmetic Science					Yes		
						BP810T Elective	Experimental Pharmacology					Yes		
						BP811T Elective	Advanced Instrumentation Techniques				Yes			

					BP812T Elective	Dietary Supplements and Nutraceuticals					Yes			
					BP813T Elective	Project Work	12			6	Yes			
<b>TOTAL</b>					18	<b>TOTAL</b>						22	04	