



# D Y Patil Agriculture & Technical University, Talsande

## Structure & Contents for B. Tech Agricultural Engineering Program (AY 2021-22) R0

First Year B. Tech- Agricultural Engineering (Semester I)										
Course Code	Course Title	L	T	P	C	Component	Evaluation Scheme			
							Exam	WT	Min. Pass %	Total Min. Pass %
		Hr/Week								
AE001101 Version: 1.0	Engineering Mathematics-I	2		2	3	Theory 100 Marks	MT	20	40	50
						FTE	80			
						Practical 50 Marks	PE	40	40	
						MA	10			
AE001102 Version: 1.0	Engineering Physics	2		2	3	Theory 100 Marks	MT	20	40	50
						FTE	80			
						Practical 50 Marks	PE	40	40	
						MA	10			
AE001103 Version: 1.0	Engineering Chemistry	2		2	3	Theory 100 Marks	MT	20	40	50
						FTE	80			
						Practical 50 Marks	PE	40	40	
						MA	10			
AE001104 Version: 1.0	Principles of Soil Science	2		2	3	Theory 100 Marks	MT	20	40	50
						FTE	80			
						Practical 50 Marks	PE	40	40	
						MA	10			
AE001105 Version: 1.0	Surveying and Levelling	1		4	3	Theory 50 Marks	MT	10	40	50
						FTE	40			
						Practical 100 Marks	PE	80	40	
						MA	20			
AE001106 Version: 1.0	Mechatronics	2		2	3	Theory 100 Marks	MT	20	40	50
						FTE	80			
						Practical 50 Marks	PE	40	40	
						MA	10			
AE001107 Version: 1.0	Engineering Drawing	0		4	2	Practical 100 Marks	PE	80	50	50
						MA	20			
AE001108 Version: 1.0	Heat and Mass Transfer	2		0	2	Theory 100 Marks	MT	20	50	50
						FTE	80			
<b>Total</b>		<b>13</b>		<b>18</b>	<b>22</b>	<b>1100 Marks</b>	<b>Total Contact Hours: 31 Total Credits: 22</b>			
MT – Mid Term; FTE – Final Theory Exam; PE- Practical Exam; MA-Manual										



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## Structure & Contents for B. Tech Agricultural Engineering Program (AY 2021-22) R0

First Year B. Tech- Agricultural Engineering (Semester II)										
Course Code	Course Title	L	T	P	C	Component	Evaluation Scheme			
							Exam	WT	Min. Pass %	Total Min. Pass %
		Hr/Week								
AE001201 Version: 1.0	Engineering Mathematics-II	2		2	3	Theory 100 Marks	MT	20	40	50
						FTE	80			
						Practical 50 Marks	PE	40	40	
							MA	10		
AE001202 Version: 1.0	Environmental Science and Disaster Management	2		2	3	Theory 100 Marks	MT	20	40	50
						FTE	80			
						Practical 50 Marks	PE	40	40	
							MA	10		
AE001203 Version: 1.0	Entrepreneurship Development and Business Management	2		2	3	Theory 100 Marks	MT	20	40	50
						FTE	80			
						Practical 50 Marks	PE	40	40	
							MA	10		
AE001204 Version: 1.0	Fluid Mechanics and Open Channel Hydraulics	2		2	3	Theory 100 Marks	MT	20	40	50
						FTE	80			
						Practical 50 Marks	PE	40	40	
							MA	10		
AE001205 Version: 1.0	Building Construction and Cost Estimation	2		0	2	Theory 100 Marks	MT	20	50	50
						FTE	80			
AE001206 Version: 1.0	Workshop Technology and Practices	1		4	3	Theory 50 Marks	MT	10	40	50
						FTE	40			
						Practical 100 Marks	PE	80	40	
							MA	20		
AE001207 Version: 1.0	Theory of Machines	2		0	2	Theory 100 Marks	MT	20	50	50
						FTE	80			
AE001208 Version: 1.0	Web Designing and Internet Applications	1		2	2	Theory 100 Marks	MT	20	40	50
						FTE	80			
						Practical 50 Marks	PE	40	40	
							MA	10		
<b>Total</b>		<b>14</b>		<b>14</b>	<b>21</b>	<b>1100 Marks</b>	<b>Total Contact Hours: 28 Total Credits: 21</b>			
MT – Mid Term; FTE – Final Theory Exam; PE- Practical Exam; MA-Manual										



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## Structure & Contents for B. Tech Agricultural Engineering Program (AY 2021-22) R0

First Year B. Tech- Agricultural Engineering (Semester III)												
Course Code	Course Title	L	T	P	C	Component	Evaluation Scheme					
		Hr/Week					Exam	WT	Min. Pass %	Total Min. Pass %		
AE002101 Version: 1.0	Principles of Horticultural Crops and Plant Protection	1		2	2	Theory 50 Marks	MT	10	40	50		
						FTE	40					
						Practical 50 Marks	PE	40	40		MA	10
AE002102 Version: 1.0	Principles of Agronomy	2		2	3	Theory 100 Marks	MT	20		40	50	
						FTE	80					
						Practical 50 Marks	PE	40	40	MA		10
						MA	10					
AE002103 Version: 1.0	Communication Skills and Personality Development	1		2	2	Theory 50 Marks	MT	10	40	50		
						FTE	40					
						Practical 50 Marks	PE	40	40		MA	10
						MA	10					
AE002104 Version: 1.0	Engineering Mathematics-III	2		2	3	Theory 100 Marks	MT	20	40	50		
						FTE	80					
						Practical 50 Marks	PE	40	40		MA	10
						MA	10					
AE002105 Version: 1.0	Soil Mechanics	1		2	2	Theory 50 Marks	MT	10	40	50		
						FTE	40					
						Practical 50 Marks	PE	40	40		MA	10
						MA	10					
AE002106 Version: 1.0	Design of Structures	1		2	2	Theory 50 Marks	MT	10	40	50		
						FTE	40					
						Practical 50 Marks	PE	40	40		MA	10
						MA	10					
AE002107 Version: 1.0	Machine Design	2		0	2	Theory 100 Marks	MT	20	50	50		
						FTE	80					
AE002108 Version: 1.0	Thermodynamics, Refrigeration and Air Conditioning	2		2	3	Theory 100 Marks	MT	20	40	50		
						FTE	80					
						Practical 50 Marks	PE	40	40		MA	10
						MA	10					
AE002109 Version: 1.0	Electrical Machines and Power Utilization	2		2	3	Theory 100 Marks	MT	20	40	50		
						FTE	80					
						Practical 50 Marks	PE	40	40		MA	10
						MA	10					
<b>Total</b>		<b>14</b>		<b>16</b>	<b>22</b>	<b>1100 Marks</b>	<b>Total Contact Hours: 30 Total Credits: 22</b>					
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## Structure & Contents for B. Tech Agricultural Engineering Program (AY 2021-22) R0

First Year B. Tech- Agricultural Engineering (Semester IV)										
Course Code	Course Title	L	T	P	C	Component	Evaluation Scheme			
							Exam	WT	Min. Pass %	Total Min. Pass %
		Hr/Week								
AE002201 Version: 1.0	Remote Sensing and GIS Applications	1		2	2	Theory 50 Marks	MT	10	40	50
							FTE	40		
						Practical 50 Marks	PE	40	40	
							MA	10		
AE002202 Version: 1.0	Auto CAD Applications	0		4	2	Practical 100 Marks	PE	80	50	50
								MA		
AE002203 Version: 1.0	Applied Electronics and Instrumentation	2		2	3	Theory 100 Marks	MT	20	40	50
							FTE	80		
						Practical 50 Marks	PE	40	40	
							MA	10		
AE002204 Version: 1.0	Tractor and Automotive Engines	2		2	3	Theory 100 Marks	MT	20	40	50
							FTE	80		
						Practical 50 Marks	PE	40	40	
							MA	10		
AE002205 Version: 1.0	Engineering Properties of Agricultural Produce	1		2	2	Theory 50 Marks	MT	10	40	50
							FTE	40		
						Practical 50 Marks	PE	40	40	
							MA	10		
AE002206 Version: 1.0	Watershed Hydrology	1		2	2	Theory 50 Marks	MT	10	40	50
							FTE	40		
						Practical 50 Marks	PE	40	40	
							MA	10		
AE002207 Version: 1.0	Irrigation Engineering	2		2	3	Theory 100 Marks	MT	20	40	50
							FTE	80		
						Practical 50 Marks	PE	40	40	
							MA	10		
AE002208 Version: 1.0	Sprinkler and Micro Irrigation Systems	1		2	2	Theory 50 Marks	MT	10	40	50
							FTE	40		
						Practical 50 Marks	PE	40	40	
							MA	10		
AE002209 Version: 1.0	Fundamentals of Renewable Energy Sources	2		2	3	Theory 100 Marks	MT	20	40	50
							FTE	80		
						Practical 50 Marks	PE	40	40	
							MA	10		
<b>Total</b>		<b>12</b>		<b>20</b>	<b>22</b>	<b>1100 Marks</b>	<b>Total Contact Hours: 32 Total Credits: 22</b>			
MT – Mid Term; FTE – Final Theory Exam; PE- Practical Exam; MA-Manual										
Skill Development Training-I Summer break June-July after 4 <sup>th</sup> Semester (Student READY)										



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## Structure & Contents for B. Tech Agricultural Engineering Program (AY 2021-22) R0

First Year B. Tech- Agricultural Engineering (Semester V)										
Course Code	Course Title	L	T	P	C	Component	Evaluation Scheme			
							Exam	WT	Min. Pass %	Total Min. Pass %
		Hr/Week								
AE003101 Version: 1.0	Tractor Systems and Controls	2		2	3	Theory 100 Marks	MT	20	40	50
						FTE	80			
						Practical 50 Marks	PE	40	40	
AE003102 Version: 1.0	Farm Machinery and Equipment-I	2		2	3	Theory 100 Marks	MT	20		40
						FTE	80			
						Practical 50 Marks	PE	40	40	MA
AE003103 Version: 1.0	Artificial Intelligence in Agriculture	2		2	3	Theory 100 Marks	MT	20		40
						FTE	80			
						Practical 50 Marks	PE	40	40	MA
AE003104 Version: 1.0	Post Harvest Engineering of Cereals, Pulses and Oil Seeds	2		2	3	Theory 100 Marks	MT	20		40
						FTE	80			
						Practical 50 Marks	PE	40	40	MA
AE003105 Version: 1.0	Soil and Water Conservation Engineering	2		2	3	Theory 100 Marks	MT	20		40
						FTE	80			
						Practical 50 Marks	PE	40	40	MA
AE003106 Version: 1.0	Watershed Planning and Management	1		2	2	Theory 50 Marks	MT	10		40
						FTE	40			
						Practical 50 Marks	PE	40	40	MA
AE003107 Version: 1.0	Drainage Engineering	1		2	2	Theory 50 Marks	MT	10		40
						FTE	40			
						Practical 50 Marks	PE	40	40	MA
AE003108 Version: 1.0	Renewable Power Sources	2		2	3	Theory 100 Marks	MT	20		40
						FTE	80			
						Practical 50 Marks	PE	40	40	MA
AE003109 Version: 1.0	Skill Development Training-I (Student READY) Registration only	0		10	5	Practical 250 Marks	TP	200		50
							Report	50		
<b>Total</b>		<b>14</b>		<b>26</b>	<b>27</b>	<b>1350 Marks</b>	<b>Total Contact Hours: 40 Total Credits: 27</b>			

MT - Mid Term; FTE - Final Theory Exam; PE- Practical Exam; MA-Manual , TP-Training Performance



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## Structure & Contents for B. Tech Agricultural Engineering Program (AY 2021-22) R0

First Year B. Tech- Agricultural Engineering (Semester VI)										
Course Code	Course Title	L	T	P	C	Component	Evaluation Scheme			
							Exam	WT	Min. Pass %	Total Min. Pass %
		Hr/Week								
AE003201 Version: 1.0	Precision Farming Techniques for Protected Cultivation	1		4	3	Theory 50 Marks	MT	10	40	50
						FTE	40			
						Practical 100 Marks	PE	80	40	
AE003202 Version: 1.0	Farm Machinery and Equipment-II	2		2	3	Theory 100 Marks	MT	20	40	50
						FTE	80			
						Practical 50 Marks	PE	40	40	
AE003203 Version: 1.0	Post Harvest Engineering of Horticultural Crops	1		2	2	Theory 50 Marks	MT	10	40	50
						FTE	40			
						Practical 50 Marks	PE	40	40	
AE003204 Version: 1.0	Water Harvesting and Soil Conservation Structures	2		2	3	Theory 100 Marks	MT	20	40	50
						FTE	80			
						Practical 50 Marks	PE	40	40	
AE003205 Version: 1.0	Groundwater, Wells and Pumps	2		2	3	Theory 100 Marks	MT	20	40	50
						FTE	80			
						Practical 50 Marks	PE	40	40	
AE003206 Version: 1.0	Tractor and Farm Machinery Operation and Maintenance	0		4	2	Practical 100 Marks	PE	80	50	50
							MA	20		
AE003207 Version: 1.0	Food Quality, Safety Standards & Certification	2		2	3	Theory 100 Marks	MT	20	40	50
						FTE	80			
						Practical 50 Marks	PE	40	40	
AE003208 Version: 1.0	Bio-energy Systems: Design and Applications	2		2	3	Theory 100 Marks	MT	20	40	50
						FTE	80			
						Practical 50 Marks	PE	40	40	
<b>Total</b>		<b>12</b>		<b>20</b>	<b>22</b>	<b>1100 Marks</b>	<b>Total Contact Hours: 32 Total Credits: 22</b>			
MT – Mid Term; FTE – Final Theory Exam; PE- Practical Exam; MA-Manual										
Skill Development Training-II in Summer break June-July after 6 <sup>th</sup> Semester (Student READY)										



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## Structure & Contents for B. Tech Agricultural Engineering Program (AY 2021-22) R0

First Year B. Tech- Agricultural Engineering (Semester VII)										
Course Code	Course Title	L	T	P	C	Component	Evaluation Scheme			
		Hr/Week					Exam	WT	Min. Pass %	Total Min. Pass %
AE004101 Version: 1.0	10- weeks Industrial Attachment /Internship (Student READY)	0		20	10	Practical 500 Marks	TP	400	50	50
							Report	100		
AE004102 Version: 1.0	10- weeks Experiential Learning On campus (Student READY)	0		20	10	Practical 500 Marks	TP	400	50	50
							Report	100		
AE004103 Version: 1.0	Skill Development Training-I (Student READY) Registration only	0		10	5	Practical 250 Marks	TP	200	50	50
							Report	50		
AE004104 Version: 1.0	Educational Tour (Registration only)	0		4	2	Practical 100 Marks	Viva	50	50	50
							Report	50		
<b>Total</b>		<b>0</b>		<b>54</b>	<b>27</b>	<b>1350 Marks</b>	<b>Total Contact Hours: 54 Total Credits: 27</b>			

MT – Mid Term; FTE – Final Theory Exam; PE- Practical Exam; TP-Training Performance



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## Structure & Contents for B. Tech Agricultural Engineering Program (AY 2021-22) R0

First Year B. Tech- Agricultural Engineering (Semester VIII)										
Course Code	Course Title	L	T	P	C	Component	Evaluation Scheme			
							Exam	WT	Min. Pass %	Total Min. Pass %
		Hr/Week								
AE004201 Version: 1.0	Elective course	2		2	3	Theory 100 Marks	MT	20	40	50
						FTE	80			
						Practical 50 Marks	PE	40	40	
						MA	10			
AE004202 Version: 1.0	Elective course	2		2	3	Theory 100 Marks	MT	20	40	50
						FTE	80			
						Practical 50 Marks	PE	40	40	
						MA	10			
AE004203 Version: 1.0	Elective course	2		2	3	Theory 100 Marks	MT	20	40	50
						FTE	80			
						Practical 50 Marks	PE	40	40	
						MA	10			
AE004204 Version: 1.0	Project Planning and Report Writing (Student READY)	0		20	10	Practical 500 Marks	RW	350	50	50
							Thesis	150		
<b>Total</b>		<b>6</b>		<b>26</b>	<b>19</b>	<b>950 Marks</b>	<b>Total Contact Hours: 32 Total Credits: 19</b>			

MT – Mid Term; FTE – Final Theory Exam; PE- Practical Exam; MA-Manual, RW- Research Work