



BIKANER TECHNICAL UNIVERSITY, BIKANER

बीकानेर तकनीकी विश्वविद्यालय, बीकानेर

BIKANER TECHNICAL UNIVERSITY, BIKANER

बीकानेर तकनीकी विश्वविद्यालय, बीकानेर



PROGRAMME SCHEME

Agriculture Engineering- 2022



THEORY											
SN	Category	Course		Contact hrs/week			Marks			Cr	
		Code	Title	L	T	P	IA	ETE	Total		
1	UC	UC-301	Advanced Engineering Mathematics – I	3	0	0	30	70	100	3	
2	DC	AE-301	Heat Transfer, Refrigeration and Air Conditioning	2	0	0	30	70	100	2	
3		AE-302	Strength of Materials	2	0	0	30	70	100	2	
4		AE-303	Fluid Mechanics	2	0	0	30	70	100	2	
5		AE-304	Fundamentals of Agriculture	3	0	0	30	70	100	3	
6		AE-305	Fundamental of Renewable Energy Sources/	2	0	0	30	70	100	2	
7		AE-306	Watershed Hydrology	1	0	0	30	70	100	1	
Sub Total				15	0	0	210	490	700	15	
PRACTICAL & SESSIONAL											
8	DC	AE-307	Heat Transfer, Refrigeration and Air Conditioning Lab	0	0	2	60	40	100	1.5	
9		AE-308	Strength of Materials Lab	0	0	2	60	40	100	1.5	
10		AE-309	Fluid Mechanics Lab	0	0	2	60	40	100	1.5	
11		AE-310	Fundamentals of Agriculture Lab	0	0	2	60	40	100	1.5	
12		AE-311	Fundamental of Renewable Energy Sources Lab	0	0	2	60	40	100	1	
13		AE-312	Watershed Hydrology Lab	0	0	2	60	40	100	1	
14	UI	UI-301	Industrial Training	0	0	2*	60	40	100	1	
15	CCA	UI-302	SODECA/NCC/NSS/ANANDAM/IPR	-	-	-	-	100	100	1	
Sub Total				0	0	14	420	380	800	10	
TOTAL OF III SEMESTER				15	0	14	630	870	1500	25	

L: Lecture, **T:** Tutorial, **P:** Practical, **Cr:** Credits, **ETE:** End Term Exam, **IA:** Internal Assessment

*for calculation of contact hours



THEORY										
SN	Category	Course		Contact hrs/week			Marks			Cr
		Code	Title	L	T	P	IA	ETE	Total	
1	UC	UC-401	Advanced Engineering Mathematics– II	3	0	0	30	70	100	3
2	DC	AE-401	Surveying and Leveling	2	0	0	30	70	100	1
3		AE-402	Irrigation Engineering and Sprinkler & Micro Irrigation Systems	3	0	0	30	70	100	3
4		AE-403	Soil Mechanics	2	0	0	30	70	100	2
5		AE-404	Theory and Design of Machines	3	0	0	30	70	100	3
6		AE-405	Tractor and Automotive Engines	2	0	0	30	70	100	2
7		AE-406	Web Designing and Internet Applications	1	0	0	30	70	100	1
Sub Total				16	0	0	210	490	700	15
PRACTICAL & SESSIONAL										
8	DC	AE-406	Auto CAD application Lab	0	0	3	60	40	100	1.5
9		AE-407	Surveying and Leveling Lab	0	0	3	60	40	100	1.5
10		AE-408	Irrigation Engineering and Sprinkler and Micro Irrigation Systems Lab	0	0	2	60	40	100	1.5
11		AE-409	Soil Mechanics Lab	0	0	2	60	40	100	1.5
12		AE-410	Tractor and Automotive Engines Lab	0	0	2	60	40	100	1.5
13	UI	AE-411	Web Designing and Internet Applications Lab	0	0	2	60	40	100	1.5
14	CCA	UI-401	SODECA/NCC/NSS/ANANDAM/IPR	-	-	-	-	100	100	1
Sub Total				0	0	14	360	340	700	10
TOTAL OF III SEMESTER				16	0	14	570	830	1400	25

L: Lecture, T: Tutorial, P: Practical, Cr: Credits, ETE: End Term Exam, IA: Internal Assessment



THEORY										
SN	Category	Course		Contact hrs/week			Marks			Cr
		Code	Title	L	T	P	IA	ETE	Total	
1	DC	AE-501	Farm Machinery and Equipment-I	2	0	0	30	70	100	2
2		AE-502	Building Construction and Cost Estimation	2	0	0	30	70	100	2
3		AE-503	Tractor Systems and Controls	2	0	0	30	70	100	2
4		AE-504	Engineering Properties of Agricultural Produce	1	0	0	30	70	100	1
5		AE-505	Renewable Power Sources	2	0	0	30	70	100	2
6		AE-506	Drainage Engineering	1	0	0	30	70	100	1
PROFESSIONAL ELECTIVE COURSE (PEC) – I (Department Elective I)										
7	DE	DE-501	<i>Food Quality and Control</i>	2	0	0	30	70	100	2
		DE-502	<i>Minor Irrigation and Command Area Development</i>							
		DE-503	<i>Wasteland Development</i>							
PROFESSIONAL ELECTIVE COURSE (PEC) – II (Department Elective II)										
8		DE-504	<i>Food Packaging Technology</i>	2	0	0	30	70	100	2
		DE-505	<i>Mechanics of Tillage & Traction</i>							
		DE-506	<i>Agricultural Structures and Environmental Control</i>							
Sub Total				14	0	0	240	560	800	14
PRACTICAL & SESSIONAL										
9	DC	DE-507	Farm Machinery and Equipment-I	0	0	2	60	40	100	1.5
10		DE-508	Tractor Systems and Controls	0	0	2	60	40	100	1.5
11		DE-509	Engineering Properties of Agricultural Produce	0	0	2	60	40	100	1
12		DE-510	Renewable Power Sources	0	0	2	60	40	100	1
13		DE-511	Drainage Engineering	0	0	2	60	40	100	1
14		DE-512	Elective-I	0	0	2	60	40	100	1
15		DE-513	Elective-2	0	0	2	60	40	100	1
16	UI	UI-501	Industrial Training	0	0	2*	60	40	100	3
17	CCA	UI-502	SODECA/NCC/NSS/ANA NDAM/IPR	-	-	-	-	100	100	1
Sub Total				0	0	16	480	420	900	12
TOTAL OF III SEMESTER				14	0	16	720	980	1700	26

L: Lecture, T: Tutorial, P: Practical, Cr: Credits, ETE: End Term Exam, IA: Internal Assessment

*for calculation of contact hours



3rdYear – VI Semester

THEORY										
SN	Category	Course		Contact hrs/week			Marks			Cr
		Code	Title	L	T	P	IA	ETE	Total	
1	DC	AE-601	Design of Structures	2	0	0	30	70	100	2
2		AE-602	Farm Machinery and Equipment-II	2	0	0	30	70	100	2
3		AE-603	Soil and Water Conservation Engineering	2	0	0	30	70	100	2
4		AE-604	Watershed Planning and Management	1	0	0	30	70	100	1
5		AE-605	Bio-energy Systems: Design and Applications	2	0	0	30	70	100	2
6		AE-606	Groundwater, Wells and Pumps	2	0	0	30	70	100	2
7	DE		PROFESSIONAL ELECTIVE COURSE (PEC) – III (Department Elective III)							
		DE-601	Process Equipment Design	2	0	0	30	70	100	2
		DE-602	Tractor Design and Testing							
		DE-603	Landscape Irrigation Design and Management							
Sub Total				13	0	0	210	490	700	13
PRACTICAL & SESSIONAL										
8	DC	AE-605	Farm Machinery and Equipment-II	0	0	2	60	40	100	1
9		AE-606	Tractor and Farm Machinery Operation and Maintenance	0	0	2	60	40	100	1
10		AE-607	Soil and Water Conservation Engineering	0	0	2	60	40	100	1
11		AE-608	Watershed Planning and Management	0	0	2	60	40	100	1
12		AE-609	Bio-energy Systems: Design and Applications	0	0	2	60	40	100	1
13		AE-610	Groundwater, Wells and Pumps	0	0	2	60	40	100	1
14		AE-611	Elective-III	0	0	2	60	40	100	1
15	UI	UI-601	Mini Project	0	0	4*	0	100	100	2
16	CCA	UI-602	SODECA/NCC/NSS/ANA NDAM/IPR	-	-	-	-	100	100	2
Sub Total				0	0	18	420	480	900	11
TOTAL OF III SEMESTER				13	0	18	340	860	1200	24

L: Lecture, T: Tutorial, P: Practical, Cr: Credits, ETE: End Term Exam, IA: Internal Assessment



*for calculation of contact hours

4thYear – VII Semester

THEORY										
S N o	Catego ry	Course		Contact hrs/week			Marks			Cr
		Code	Title	L	T	P	IA	ETE	Total	
1	DC	AE-701	Solar Photovoltaic Technology and Systems	3	0	0	30	70	100	2
PROFESSIONAL ELECTIVE COURSE (PEC) – IV (Department Elective IV)										
2	UE	DE-701	Remote Sensing and GIS Applications	2	0	0	30	70	100	2
		DE-702	Precision Farming Techniques for Protected Cultivation							
		DE-703	Food Plant Design and Management							
OPEN ELECTIVE – I (University Elective -I)										
3	DE	UE-701	Management Information System	3	0	0	30	70	100	3
		UE-702	Project Planning and Control							
		UE-703	Waste and By-products Utilization							
Sub Total				8	0	0	90	210	300	7
PRACTICAL & SESSIONAL										
4	DC	AE-704	Solar Photovoltaic Technology and Systems	0	0	2	60	40	100	2
5	UI	UI-701	Industrial Training	0	0	2*	60	40	100	3
6		UI-702	Project – I	0	0	4*	60	40	100	2
7	CCA	UI-703	SODECA/NCC/NSS/ANA NDAM/IPR	-	-	-	-	100	100	1
Sub Total				0	0	8	180	220	400	8
TOTAL OF III SEMESTER				8	0	8	270	430	700	15

L: Lecture, T: Tutorial, P: Practical, Cr: Credits, ETE: End Term Exam, IA: Internal Assessment

*for calculation of contact hours



4thYear – VIII Semester

THEORY											
S N o	Catego ry	Course		Contact hrs/week			Marks			Cr	
		Code	Title	L	T	P	Exam Hrs	IA	ETE	Total	
	UE	OPEN ELECTIVE – II (University Elective -II)									
1		UE-801	Entrepreneurship Development and Business Management	3	0	0	30	70	100	3	
		UE-802	Human Engineering & Safety								
		UE-803	Bioenergy Engineering								
		Sub Total			3	0	0	30	70	100	3
PRACTICAL & SESSIONAL											
2.	UI	UI-801	Seminar	0	0	2*	60	40	100	2	
3.		UI-802	Project – II	0	0	4*	60	40	100	4	
4.	CCA	UI-803	SODECA/NCC/NSS/ANA NDAM/IPR	-	-	-	-	100	100	2	
		Sub Total			0	0	6	180	220	400	8
TOTAL OF III SEMESTER				3	0	6	210	290	500	11	

L: Lecture, T: Tutorial, P: Practical, Cr: Credits, ETE: End Term Exam, IA: Internal Assessment

*for calculation of contact hours

I Year		II Year		III Year		IV Year		
Sem I	Sem II	Sem III	Sem IV	Sem V	Sem VI	Sem VII	Sem VIII	Total
21	21	25	25	26	24	15	11	168