



University of Southeastern Philippines
College of Engineering

BACHELOR OF SCIENCE IN AGRICULTURAL AND BIOSYSTEMS ENGINEERING (BSABE)
Major in AB Machinery and Power Engineering
CMO No.94, series of 2017
Approved per BOR Resolution No.58, series of 2018
Revised per BOR Resolution No.51B, series of 2020
Effective S.Y. 2020-2021

1st Semester					2nd Semester						
Course No.	Course Title	Credit			Pre/Co-Requisite	Course No.	Course Title	Credit			Pre/Co-Requisite
		Lec	Lab	Total Units Credit				Lec	Lab	Total Units Credit	
GE 111	Purposive Communication	3	0	3	None	GE 113	Understanding the Self	3	0	3	None
GE 112	Mathematics in the Modern World	3	0	3	None	GE 114	Ethics	3	0	3	None
ABE 111	Introduction to AB Engineering	0	1	1	None	Math 121	Engineering Calculus 2	3	0	3	Math 111
AC 111	Principles of Crop Science	2	1	3	None	AC 122	Principles of Soil Science	2	1	3	None
BES 101	Engineering Drawing and Plans	0	1	1	None	AC 123	Principles of Animal Science	2	1	3	None
Nat Sci 1	Chemistry for Engineers	3	1	4	None	BES 102	Computer Aided Drafting	0	1	1	BES 101
Math 111	Engineering Calculus 1	3	0	3	None	Nat Sci 2	Physics for Engineers	3	1	4	Math 111
PE 111	Movement Enhancement	2	0	2	None	PE 122	Fitness Exercise	2	0	2	None
NSTP 111	National Service Training Program 1	3	0	3	None	NSTP 122	National Service Training Program 2	3	0	3	None
Total				23		Total				25	

1st Semester					2nd Semester						
Course No.	Course Title	Credit			Pre/Co-Requisite	Course No.	Course Title	Credit			Pre/Co-Requisite
		Lec	Lab	Total Units Credit				Lec	Lab	Total Units Credit	
GE 215	The Life and Works of Rizal	3	0	3	None	GE 217	Science, Technology, and Society	3	0	3	None
GE 216	Readings in Philippine History	3	0	3	None	ABE 224	Thermodynamics & Heat Transfer	4	1	5	BES 116
Math 211	Differential Equations	3	0	3	Math 121	ABM 221	AB Power Engineering	2	1	3	Math 121, Co-requisite ABE 224
BES 116	Fluid Mechanics	2	1	3	Co-requisite BES 104	BES 117	Engineering Mechanics 2	2	1	3	BES 104
ABE 213	Materials and Processes for ABE	2	1	3	BES 104, BES 102, Nat Sci 1	ABE 222	Surveying	1	2	3	Math 111
BES 104	Engineering Mechanics	3	0	3	Nat Sci 2, Math 121	ABE 225	Computer Applications in AB Engineering	1	2	3	Math 121
Math 212	Engineering Data Analysis	3	0	3	Math 121	ABP 221	Properties of AB Materials	2	1	3	ABE 213, Co-requisite ABE 224
BES 106	Engineering Economics	3	0	3	Math 121	Nat Sci 9	Biochemistry	1	1	2	Nat Sci 1
PE 213	Physical Activities Towards Health & Fitness 1	2	0	2	None	PE 224	Physical Activities Towards Health and Fitness 2	2	0	2	None
Total				26		Total				27	

1st Semester					2nd Semester						
Course No.	Course Title	Credit			Pre/Co-Requisite	Course No.	Course Title	Credit			Pre/Co-Requisite
		Lec	Lab	Total Units Credit				Lec	Lab	Total Units Credit	
EGE 311	General Education Elective 1	3	0	3	None	EGE 313	General Education Elective 3	3	0	3	None
EGE 312	General Education Elective 2	3	0	3	None	GE 319	Contemporary World	3	0	3	None
GE 218	Arts Appreciation	3	0	3	None	BES 110	Technopreneurship	3	0	3	BES 106
BES 107	Methods of Research	3	0	3	Math 212, GE 111	ABM 323	Machine Design for AB Production	2	1	3	ABM 312, BES 118, ABP 221
ABM 312	AB Machinery and Mechanization	2	1	3	ABM 221, AC 111, AC 122, AC 123	ABP 322	AB Products Processing and Storage	2	1	3	ABP 221, AC 123, AC 111
LWE 311	Hydrometeorology	2	1	3	BES 116, Math 121	ABS 322	AB Structures Engineering	1	2	3	Co-requisite ABE 327
ABS 311	AB Electrification and Control Systems	1	2	3	Nat Sci 2, Math 211	LWE 322	Irrigation and Drainage Engineering	2	1	3	ABE 222, LWE 311, Math 211, AC 111, AC 122
BES 118	Strength of Materials	2	1	3	BES 117	ABE 327	Structural Design (Timber, Steel & Reinforced Concrete Designs)	1	2	3	BES 118
ABE 316	ABE and Related Laws, Specifications, Contracts, and Professional Ethics	0	1	1	GE 114	ABE 400	Thesis* (Thesis Outlining and Outline Defense/Preliminary Conduct)	0	2	2	BES 107, All prior professional courses
Total				25		Total				26	

SUMMER					
Course No.	Course Title	Credit			Pre/Co-Requisite
		Lec	Lab	Total Units Credit	
ABE 330	Industry Immersion Program (240 hours)	0	3	3	All prior professional courses
Total				3	

1st Semester					2nd Semester						
Course No.	Course Title	Credit			Pre/Co-Requisite	Course No.	Course Title	Credit			Pre/Co-Requisite
		Lec	Lab	Total Units Credit				Lec	Lab	Total Units Credit	
ABM 414	Renewable Energy for AB Applications	2	1	3	ABM 221	ABS 424	AB Waste Management Engineering	2	1	3	Nat Sci 9, ABS 413
ABP 413	Food Process Engineering	2	1	3	ABP 322	LWE 424	Aquaculture Engineering	2	1	3	LWE 413
ABS 413	Plant and Livestock Systems and Environmental Control Engineering	2	1	3	ABS 322, AC 111, AC 122, AC 123	ABM SP 3	Specialized Professional Course 3	2	1	3	All prior professional courses
LWE 413	Land & Water Conservation Engineering	2	1	3	LWE 322	ABE 402	Correlation Course	0	2	2	
ABP 414	Design and Management of AB Processing Systems	2	1	3	ABP 322	ABE 400	Thesis (Thesis Writing & Final Defense)	0	2	2	Continuing
ABM SP 1	Specialized Professional Course 1	2	1	3		Total				13	
ABM SP 2	Specialized Professional Course 2	2	1	3							
ABE 401	Undergraduate Seminar	1	0	1	All prior professional courses						
ABE 400	Thesis* (Conduct of Thesis)	0	2	2	Continuing						
Total				24							

SUGGESTED SPECIALIZED PROFESSIONAL COURSES - Machinery and Power Engineering	
Instrumentation in Farm Machinery	Testing and Evaluation of Tractors and Farm Equipment
Ergonomics and Safety in Farm Operation	Energy Conservation and Management in Farm Power and Machinery

SUGGESTED GENERAL EDUCATION ELECTIVES	
Environmental Science	Reading Visual Art
Gender and Society	Living in the IT Era
People and the Earth's Ecosystem	Foreign Language
Philippine Indigenous Communities	

*-A subject to be enrolled continuously until the last prescribed semester where student's grade will appear

Summary	
TECHNICAL COURSES	
Mathematics	12
Natural/Physical Sciences	10
Basic Engineering Sciences	42
Allied Courses	9
Professional Courses	48
Specialization	9
Seminar/Industry Immersion/Thesis	12
NON-TECHNICAL COURSES	
General Education Courses	24
General Education Elective Courses	9
General Education Mandated Courses	3
PE	8
NSTP	6
Total number of units	192 units