



University of Southeastern Philippines
College of Engineering

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

FIRST YEAR					
1st Semester			2nd Semester		
Course No.	Course Title	Credit			Pre/Co-Requisite
		Lec	Lab	Total Units Credit	
GE 111	Purposive Communication	3	0	3	None
GE 112	Mathematics in the Modern World	3	0	3	None
ABE 111	Introduction to AB Engineering	0	1	1	None
AC 111	Principles of Crop Science	2	1	3	None
BES 101	Engineering Drawing and Plans	0	1	1	None
Nat Sci 1	Chemistry for Engineers	3	1	4	None
Math 111	Engineering Calculus 1	3	0	3	None
PE 111	Movement Enhancement	2	0	2	None
NSTP 111	National Service Training Program 1	3	0	3	None
Total				23	

Course No.	Course Title	Credit			Pre/Co-Requisite
		Lec	Lab	Total Units Credit	
GE 113	Understanding the Self	3	0	3	None
GE 114	Ethics	3	0	3	None
Math 121	Engineering Calculus 2	3	0	3	Math 111
AC 122	Principles of Soil Science	2	1	3	None
AC 123	Principles of Animal Science	2	1	3	None
BES 102	Computer Aided Drafting	0	1	1	BES 101
Nat Sci 2	Physics for Engineers	3	1	4	None
PE 122	Fitness Exercise	2	0	2	None
NSTP 122	National Service Training Program 2	3	0	3	None
Total				25	

SECOND YEAR					
1st Semester			2nd Semester		
Course No.	Course Title	Credit			Pre/Co-Requisite
		Lec	Lab	Total Units Credit	
GE 215	The Life and Works of Rizal	3	0	3	None
GE 216	Readings in Philippine History	3	0	3	None
Math 211	Differential Equations	3	0	3	Math 121
BES 116	Fluid Mechanics	2	1	3	Co-requisite BES 104
ABE 213	Materials and Processes for ABE	2	1	3	BES 104, BES 102, Nat Sci 1
BES 104	Engineering Mechanics	3	0	3	Nat Sci 2, Math 121
Math 212	Engineering Data Analysis	3	0	3	Math 121
BES 106	Engineering Economics	3	0	3	Math 121
PE 213	Physical Activities Towards Health & Fitness 1	2	0	2	None
Total				26	

Course No.	Course Title	Credit			Pre/Co-Requisite
		Lec	Lab	Total Units Credit	
GE 217	Science, Technology, and Society	3	0	3	None
ABE 224	Thermodynamics & Heat Transfer	4	1	5	BES 116
ABM 211	AB Power Engineering	2	1	3	Math 121, Co-requisite ABE 224
BES 117	Engineering Mechanics 2	2	1	3	BES 104
ABE 222	Surveying	1	2	3	Math 111
ABE 225	Computer Applications in AB Engineering	1	2	3	Math 121
ABP 221	Properties of AB Materials	2	1	3	ABE 213, Co-requisite ABE 224
Nat Sci 9	Biochemistry	1	1	2	Nat Sci 1
PE 224	Physical Activities Towards Health and Fitness 2	2	0	2	None
Total				27	

THIRD YEAR					
1st Semester			2nd Semester		
Course No.	Course Title	Credit			Pre/Co-Requisite
		Lec	Lab	Total Units Credit	
EGE 311	General Education Elective 1	3	0	3	None
EGE 312	General Education Elective 2	3	0	3	None
GE 218	Arts Appreciation	3	0	3	None
BES 107	Methods of Research	3	0	3	Math 212, GE 111
ABM 312	AB Machinery and Mechanization	2	1	3	ABM 221, AC 111, AC 122, AC 123
LWE 311	Hydrometeorology	2	1	3	BES 116, Math 121
ABS 311	AB Electrification and Control Systems	1	2	3	Nat Sci 2, Math 211
BES 118	Strength of Materials	2	1	3	BES 117
ABE 316	ABE and Related Laws, Specifications, Contracts, and Professional Ethics	0	1	1	GE 114
Total				25	

Course No.	Course Title	Credit			Pre/Co-Requisite
		Lec	Lab	Total Units Credit	
EGE 313	General Education Elective 3	3	0	3	None
GE 319	Contemporary World	3	0	3	None
BES 110	Technopreneurship	3	0	3	BES 106
ABM 323	Machine Design for AB Production	2	1	3	ABM 312, BES 118, ABP 221
ABP 322	AB Products Processing and Storage	2	1	3	ABP 221, AC 123, AC 111
ABS 322	AB Structures Engineering	1	2	3	Co-requisite ABE 327
LWE 322	Irrigation and Drainage Engineering	2	1	3	ABE 222, LWE 311, Math 211, AC 111, AC 122
ABE 327	Structural Design (Timber, Steel & Reinforced Concrete Designs)	1	2	3	BES 118
ABE 400	Thesis* (Thesis Outlining and Outline Defense/Preliminary Conduct)	0	2	2	BES 107, All prior professional courses
Total				26	

OFF SEMESTER					
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	

FOURTH YEAR					
1st Semester			2nd Semester		
Course No.	Course Title	Credit			Pre/Co-Requisite
		Lec	Lab	Total Units Credit	
ABM 414	Renewable Energy for AB Applications	2	1	3	ABM 221
ABP 413	Food Process Engineering	2	1	3	ABP 322
ABS 413	Plant and Livestock Systems and Environmental Control Engineering	2	1	3	ABS 322, AC 111, AC 122, AC 123
LWE 413	Land & Water Conservation Engineering	2	1	3	LWE 322
ABP 414	Design and Management of AB Processing Systems	2	1	3	ABP 322
LWE SP1	Specialized Professional Course 1	2	1	3	All prior professional courses
LWE SP2	Specialized Professional Course 2	2	1	3	
ABE 401	Undergraduate Seminar	1	0	1	
ABE 400	Thesis* (Conduct of Thesis)	0	2	2	
Total				24	

Course No.	Course Title	Credit			Pre/Co-Requisite
		Lec	Lab	Total Units Credit	
ABS 424	AB Waste Management Engineering	2	1	3	Nat Sci 9, ABS 413
LWE 424	Aquaculture Engineering	2	1	3	LWE 413
LWE SP3	Specialized Professional Course 3	2	1	3	All prior professional courses
ABE 402	Correlation Course	0	2	2	
ABE 400	Thesis (Thesis Writing & Final Defense)	0	2	2	Continuing
Total				13	

SUGGESTED SPECIALIZED PROFESSIONAL COURSES - Land and Water Resources Engineering	
Groundwater Hydrology Management	Water Quality Control Engineering
Water Resources Planning	Tropical Agrometeorology

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