



**JH CERILLES STATE COLLEGE**  
**Mati, San Miguel, Zamboanga del Sur**  
 School of Engineering and Technology  
 Bachelor of Science in Agricultural and Biosystem Engineering  
**New Curriculum 2022**



**FIRST YEAR**

**FIRST SEMESTER**

Grades	Course #	DESCRIPTION	Lec	Lab	Units	Pre-req
	GEC 101	Understanding the Self	3	0	3	None
	GEC 104	Mathematics in the Modern World	3	0	3	None
	GEC 203	Ethics	3	0	3	None
	BEM 111	Calculus 1 Differential Calculus	3	0	3	STEM TRACK
	NS 111	Chemistry for Engineers	3	1	4	STEM TRACK
	ABE 111	Intro to Agricultural & Biosystems Engineering	0	1	1	None
	GEE 111	Environmental Science	3	0	3	None
	PATH FIT 1	Movement Competency Training	2	0	2	None
	NSTP 1	National Training Service Program	3	0	3	None
	IC	JHCSC Civic Course	1	0	1	None
	<b>TOTAL</b>		<b>24</b>	<b>2</b>	<b>26</b>	

**SECOND SEMESTER**

Grades	Course #	DESCRIPTION	Lec	Lab	Units	Pre-req/ Co-req
	GEC 105	Purposive Communication	3	0	3	None
	GEE 103	Science Technology and Society	3	0	3	None
	GEE 101	Living in the IT Era	3	0	3	None
	GEE 102	The Entrepreneurial Mind	3	0	3	None
	BEM 121	Calculus 2 Integral Calculus	3	0	3	GEC 104 BEM100, BEM111
	PS121	Physics for Engineers (Calculus Based)	3	1	4	None
	BES 121	Engineering Drawing and Plans	0	1	1	None
	PATH FIT 2	Exercises Physical Activity	2	0	2	PATH FIT 2
	NSTP 1	National Training Service Program	3	0	3	NSTP 1
	<b>TOTAL</b>		<b>23</b>	<b>2</b>	<b>25</b>	

**SECOND YEAR**

**FIRST SEMESTER**

Grades	Course #	DESCRIPTION	Lec	Lab	Units	Pre-req
	GEC 201	The Contemporary World	3	0	3	None
	GEC 202	Art Appreciation	3	0	3	None
	BEM 211	Differential Equations	3	0	3	BEM121
	BES 211	Computed Aided Drafting	1	1	2	None
	BES 212	Engineering Mechanics 1 (Statics of Rigid Bodies)	3	0	3	None
	BES 214	Fundamentals of Surveying	2	1	3	BES121
	BES 213	Engineering Economics	3	0	3	2 <sup>nd</sup> Year Standing
	AC 211	Principle of Soil Science	2	1	2	None
	AC 210	Principle of Soil Science	2	1	3	None
	Path-Fit 3	Dance/Sports/Rhythmic Activities	2	0	2	Path-Fit 3
	<b>TOTAL</b>		<b>23</b>	<b>4</b>	<b>27</b>	

**SECOND SEMESTER**

Grades	Course #	DESCRIPTION	Lec	Lab	Units	Pre-req/ Co-req
	GE Man 210	Life and Works of Rizal	3	0	3	None
	BEM 221	Engineering Data Analysis	2	1	3	GEC104, BEM100
	BES 222	Engineering Mechanics II Dynamics of Rigid Bodies	3	0	3	BES212
	BES 223	Strength of Materials	2	1	3	BES212
	BES 222	Thermodynamics And heat Transfer	4	1	5	PS 121 BEM 111
	BES 221	Fluid Mechanics	2	1	3	BES 212
	ABE 220	Materials and Processes for Agricultural and Biosystem Engineering	2	1	3	BES 212 NS 111 BES 121
	GEC 102	Reading the Phil. History	3	0	3	None
	Path-Fit 3	Outdoor Activities	2	0	2	Path-Fit 3
	<b>TOTAL</b>		<b>23</b>	<b>5</b>	<b>28</b>	

### THIRD YEAR

#### FIRST SEMESTER

Grades	Course #	DESCRIPTION	Lec	Lab	Units	Pre-req
	BES 300	Computer Programming	2	1	3	None
	AC 310	Principle of Animal Science	2	1	3	None
	ABE 310	Agricultural and Biosystem Power Engineering	2	1	3	BES 222 BEM112
	ABE 313	Hydrometeorology	2	1	3	BES 221 BEM222
	ABE 314	Properties of agricultural and Biosystem Materials	2	1	3	ABE 220 BES 222
	BES 311	Engineering Management	3	0	3	3 <sup>rd</sup> Year standing
	<b>TOTAL</b>		<b>13</b>	<b>5</b>	<b>18</b>	

#### SECOND SEMSTER

Grades	Course #	DESCRIPTION	Lec	Lab	Units	Pre-req/ Co-req
	ABE 320	Computer Application in agricultural and Biosystem Engineering	1	2	3	3 <sup>ed</sup> Year Standing (Completed BES 300)
	ABE 321	Technopreneur - ship 101	3	0	3	BES 213
	ABE 322	Agricultural and Biosystem Machinery and Mechanization	2	1	3	ABE 310 AC 210 AC 223 AC 224
	ABE 312	Agricultural and Biosystem Structures Engineering	2	1	3	ABE 311
	ABE 323	Agricultural and Biosystem Electrification and Control System	2	1	3	PS 121 BEM 211
	ABE 324	Irrigation and Drainage Engineering	2	1	3	BES214, ABE313 AC210, AC223
	ABE 325	Agricultural and Biosystem Products and Processing Storage	2	1	3	ABE 314 AC 223 AC 224
	<b>TOTAL</b>		<b>14</b>	<b>7</b>	<b>21</b>	

#### SUMMER

Grades	Course #	DESCRIPTION	Lec	Lab	Units	Pre-req
	IIP 300	Industry Immersion Program (240 hours)	2	1	3	3 <sup>rd</sup> Year Standing

### FOURTH YEAR

#### FIRST SEMESTER

Grades	Course #	DESCRIPTION	Lec	Lab	Units	Pre-req
	ABE 410	Machine Design for Agricultural and Biosystem Production	2	1	3	ABE 322 ABE 314
	ABE 412	Plan and Livestock System and Environmental Control Engineering	2	1	3	ABE 312 AC 210 AC 223 AC 224
	ABE 413	Aquaculture Engineering	2	1	3	ABE 324
	ABE 414	Food process Engineering	2	1	3	ABE 325
	ABE 415	Undergraduate Seminar and Field Tour	2	0	2	4 <sup>th</sup> Year Standing
	Thesis 1	Undergraduate Thesis in Agricultural and Biosystem Engineering I/Undergraduate Project in ABE 1	0	3	3	4 <sup>th</sup> Year Standing IIP 300
	<b>TOTAL</b>		<b>10</b>	<b>7</b>	<b>17</b>	

#### SECOND SEMESTER

Grades	Course #	DESCRIPTION	Lec	Lab	Units	Pre-req/ Co-req
	ABE 421	Renewable Energy for Agricultural and Biosystem Application	2	1	3	ABE 311
	ABE 422	Agricultural and Biosystem Waste Management Engineering	2	1	3	ABE 314
	ABE 423	Land and Water Conservation Engineering	2	1	3	ABE 324
	ABE 424	Design and management of Agricultural and Biosystem Processing	2	1	3	ABE 325
	ABE 416	ABE and Related laws, Specifications Contracts, and Ethics	1	0	1	ABE 111 GEC 203
	Thesis 2	Undergraduate Thesis in Agricultural and Biosystem Engineering II/Undergraduate Project in ABE 2	0	3	3	Thesis 1
	<b>TOTAL</b>		<b>9</b>	<b>7</b>	<b>16</b>	

