3.1 Curriculum				
3.1.1 Total credits throughout the program		not le	ess than 14	0 credits
3.1.2 Curriculum structure				
1. General education category		not le	ess than 3	0 credits
1.1 Well-being Group	not less	than	3 credit	5
1.2 Entrepreneurship Group	not less	than	6 credit	5
1.3 Language and Communication Group	not less	than	13 credits	5
1.4 Thai and Global Citizenship Group	not less	than	5 credit	5
1.5 Aesthetics Group	not less	than	3 credit	5
2. Specific subject category		not le	ess than 10	4 credits
2.1 Core subjects			31 credi	ts
- Science subject group 10 cre	dits			
- Agriculture subject group 21 cre	edits			
2.2 Required specific subjects			67 credi	ts
2.3 Selected Subjects	not less	than	6 credits	
3. Elective subjects		not le	ess than 6	credits
3.1.3 Courses				
1. General education category		not le	ess than 3	0 credits
1.1 Well-being Group	not less t	than	3 credit	S
01175xxx Physical Education Activities			1(0-2-1)	
Addition to choose courses in Well-Being group more	not less	than 2	2 credits	
1.2 Entrepreneurship Group	ot less t	han	6 credits	
Choose to study from courses in Entrepreneurship Group n	ot less t	han 6 d	credits	
1.3 Language and Communication Group	o not l	ess tha	ın 13 cre	dits
01355xxx English	•		9( )	
Thai language			3(3-0-6)	
Information Technology/Computer So	eience		1(1-0-2)	
1.4 Thai and Global Citizenship Group	not le	ss tha	n 5 credit	7
01999111 Knowledge of the Land			2(2-0-4)	
02999144 Life Skills for Undergraduate	e Studen	ıt	1(1-0-2)	
Addition to choose courses in Thai and Global Citizenship			( - /	
•	-		2 credits	
1.5 Aesthetics Group	not les	ss than	3 credits	
Choose to study from courses in Aesthetics Group no	t less the	an 3 ci	redits	

3. Curriculum and lectures

#### 2. Specific subject category not less than 104 credits 31 credits 2.1 Core subjects - Science subject group 10 credits 01403111 General Chemistry 3(3-0-6)01403112 Laboratory in General Chemistry 1(0-3-2)01422111 Principles of Statistics 3(3-0-6)01424111 Principles of Biology 3(3-0-6)- Agriculture subject group 21 credits 02028321 Fertilizers and Manures 3(3-0-6)02036211 Agricultural Extension and Technology 3(3-0-6)Transfer 02036221 Animal Science and Technology 3(3-0-6)02036231 Crop Science and Technology 2(2-0-4)Soil Science 02036261 3(2-3-6)02036271 Horticultural Science and Technology 2(2-0-4)02036299 General Practicum 2(0-10-5) 02036371 **Fundamental** Agricultural Pest 3(2-2-5) Management 2.2 Required specific subjects 67 credits 01417111 Calculus I 3(3-0-6) 01420115 Laboratory in Abridged Physics 1(0-3-2) **Abridged Physics** 01420119 3(3-0-6)Basic Farm Workshop 02027111 1(0-3-2)02027112 Laboratory of Basic Drawing 1(0-3-2)02027211 Agricultural Surveying 2(1-3-4)Agricultural Machinery Drawing 2(1-3-4)02027212 Materials and Elementary Mechanics of 02027213 3(3-0-6)Materials 02027221 Farm Engines 3(2-3-6)02027231 Principles of Farmstead Irrigation 3(2-3-6)02027261 Electric and Electronics for Agriculture 3(2-3-6)02027262\*\* Fundamental Agricultural Control System 3(2-3-6)Principles of Farm Machinery I 02027321 3(2-3-6)Principles of Farm Machinery II 02027322 3(2-3-6)Principles of Farm Machinery III 02027323 3(2-3-6)02027324\*\* Agricultural Power Transmission 3(2-3-6)02027361 Computer Programming for Agriculture I 3(2-3-6)

Computer Programming for Agriculture II

2(1-3-4)

02027362

02027399	Basic Specific Practicum in Agricultural Machinery and Mechatronics	1(0-10-5)
02027423	Testing and Evaluation of Agricultural Machinery and Equipment	3(2-3-6)
02027425	Agricultural Machinery and Resources Management	3(3-0-6)
02027441**	Agricultural Production Technology in Environmental Control System	3(2-3-6)
02027451**	Post-harvest Mechanization and Agricultural Production Storage	3(2-3-6)
02027461	Agricultural Mechatronics I	3(2-3-6)
02027491	Research Techniques in Agricultural Machinery and Mechatronics	1(0-3-2)
02027497	Seminar	1
02027498	Special Problems	3
02027499	Specific Practicum in Agricultural Machinery and Mechatronics	1(0-10-5)

### 2.3 Selected Subjects

### not less than 6 credits

Select courses in the field of agricultural machinery and mechatronics or related subjects, not less than 6 credits, from the following sample courses.

02027333	Sprinkler and Drip Irrigation System	3(2-3-6)
02027442**	Planning and Layout for Modern Farm	3(3-0-6)
02027462	Agricultural Mechatronics II	3(2-3-6)
02027463	Automatic Control System for Agricultural	3(3-0-6)
	Mechatronics	
02027496	Selected Topics in Agricultural Machinery	1-3
	and Mechatronics	
02036390	Cooperative Education preparation	1(1-0-2)
02036490	Cooperative Education	6

# 3. Elective subjects

not less than 6 credits

.....

<sup>\*</sup> New courses

<sup>\*\*</sup> Updated courses

# Meaning of courses code

The meaning of course code in the Bachelor of Science program in Agricultural Machinery and Mechatronics consists of 8 digits with the following meanings:

Serial number 1-2 (02) means Kamphaeng Saen Campus		Kamphaeng Saen Campus	
Serial number 3-5	5 (027)	means	B.S. (Agricultural Machinery and Mechatronics)
Serial number 6		means	Year level
Serial number 7		means	Subject groups as follows:
0 1 2 3 4 5 6 9	mean mean mean mean mean mean mean	Agric Agric Agric Agric Post- Agric	major subjects cultural Machinery and Mechatronics Basics cultural Powertrain and Machinery cultural Soil and Water Resources Development cultural Building and Environment Group Harvest Technology Group cultural Computer and Mechatronics Group arch Group Special Topics, Seminars, Special Problems
Serial number 8		an <b>mean</b>	the subject sequence in each group.

# 3.1.4 Example of study plan

# 3.1.4.1 Example of a study plan for students who do not choose to study in cooperative education

Year 1, Semes	ster 1	Number o (lecture hours - laboratory hours - self-st	
01/02111	General Chemistry	(tecture nours - taboratory nours - seij-st	- ·
01403111	•	Law -	3(3-0-6) 1(0-3-2)
	Laboratory in General Chemist	.ry	
01417111	Calculus I		3(3-0-6)
01420115	Laboratory in Abridged Physic	S	1(0-2-1)
01420119	Abridged Physics		3(3-0-6)
01999111	Knowledge of the Land		2(2-0-4)
02027112	Laboratory of Basic Drawing		1(0-3-2)
02999144	Life Skills for Undergraduate S		<u>1(1-0-2)</u>
	,	Total	<u>16(13-8-31)</u>
Year 1, Semo	ester 2		umber of credits
01424111	Delegials of Distance	(lecture hours - laboratory hours	
01424111	Principles of Biology		3(3-0-6)
02027111	Basic Farm Workshop		1(0-3-2)
02027212	Agricultural Machinery Drawin	ng	2(1-3-4)
02036299			2(0-10-5)
01175xxx	Physical Education Activities		1(0-2-1)
01355xxx	English		3( )
	GE: Language and Communication	ation Group	1( )
	GE: Well-being Group		2( )
	GE: Thai and Global Citizensh		<u>2( )</u>
	Т	otal	<u>17( )</u>
Year 2, Semo	ester 1	Num	ber of credits
1 car 2, 5 cm		(lecture hours - laboratory hours - s	elf-study hours)
02027211	Agricultural Surveying		2(1-3-4)
02027221	Farm Engines		3(2-3-6)
02027261	Electric and Electronics for Ag	griculture	3(2-3-6)
02036221	Animal Science and Technolog	gy	3(3-0-6)
02036261	Soil Science		3(2-3-6)
02036271	Horticultural Science and Tecl	hnology	2(2-0-4)
	GE: Entrepreneurship Group		3( )
	1 1	otal	19( )
V 2 C	42	Numl	per of credits
Year 2, Semo	ester 4	(lecture hours - laboratory hours - se	
02027213	Materials and Elementary Mec	,	3(3-0-6)
02027262	Fundamental Agricultural Con		3(2-3-6)
		•	, ,
()2()2.737.1	Principles of Farm Machinery		3(Z-3-D)
02027321 02036231	Principles of Farm Machinery Crop Science and Technology	I	3(2-3-6) 2(2-0-4)
02036231	Crop Science and Technology	I	2(2-0-4)
	Crop Science and Technology English	I	2(2-0-4) 3( )
02036231	Crop Science and Technology	Total	2(2-0-4)

Year 3, Sem	CDUCT I	nber of credits	
01422111	(lecture hours - laboratory hours - Principles of Statistics	3(3-0-6)	
02027231	Principles of Farmstead Irrigation	3(2-3-6)	
02027231		3(2-3-6)	
	Principles of Farm Machinery II		
02027361	Computer Programming for Agriculture I 3(2-3-		
02036211	Agricultural Extension and Technology Transfer	3(3-0-6)	
02036371	Fundamental Agricultural Pest Management	3(2-2-5)	
01355xxx	English	3( )	
	Total	<u>21( )</u>	
Year 3, Sem	CDUCT =	nber of credits	
02027222	(lecture hours - laboratory hours -		
02027323	Principles of Farm Machinery III	3(2-3-6)	
02027324	Agricultural Power Transmission	3(2-3-6)	
02027362	Computer Programming for Agriculture II	2(1-3-4)	
02027399	Basic Specific Practicum in Agricultural Machinery and Mechatronics	1(0-10-5)	
02027441	Agricultural Production Technology in Environmental Control System	3(2-3-6)	
	GE: Entrepreneurship Group	3( )	
	Elective subjects	3( )	
	Total	$\frac{3()}{18()}$	
	Total	<u> 10( )</u>	
Year 4, Sem	45 C 2	nber of credits	
,	(lecture hours - laboratory hours -	self-study hours)	
02027423	(lecture hours - laboratory hours - Testing and Evaluation of Agricultural Machinery and Equipment	self-study hours) 3(2-3-6)	
,	(lecture hours - laboratory hours - Testing and Evaluation of Agricultural Machinery and	self-study hours)	
02027423	(lecture hours - laboratory hours - Testing and Evaluation of Agricultural Machinery and Equipment Post-harvest Mechanization and Agricultural Production	self-study hours) 3(2-3-6)	
02027423 02027451	(lecture hours - laboratory hours - Testing and Evaluation of Agricultural Machinery and Equipment Post-harvest Mechanization and Agricultural Production Storage Agricultural Mechatronics I Research Techniques in Agricultural Machinery and	self-study hours) 3(2-3-6) 3(2-3-6)	
02027423 02027451 02027461 02027491	(lecture hours - laboratory hours - Testing and Evaluation of Agricultural Machinery and Equipment Post-harvest Mechanization and Agricultural Production Storage Agricultural Mechatronics I Research Techniques in Agricultural Machinery and Mechatronics	3(2-3-6) 3(2-3-6) 3(2-3-6) 1(0-3-2)	
02027423 02027451 02027461 02027491 02027499	(lecture hours - laboratory hours - Testing and Evaluation of Agricultural Machinery and Equipment Post-harvest Mechanization and Agricultural Production Storage Agricultural Mechatronics I Research Techniques in Agricultural Machinery and Mechatronics Specific Practicum in Agricultural Machinery and Mechatronic	3(2-3-6) 3(2-3-6) 3(2-3-6) 1(0-3-2) 1(0-10-5)	
02027423 02027451 02027461 02027491	(lecture hours - laboratory hours - Testing and Evaluation of Agricultural Machinery and Equipment Post-harvest Mechanization and Agricultural Production Storage Agricultural Mechatronics I Research Techniques in Agricultural Machinery and Mechatronics Specific Practicum in Agricultural Machinery and Mechatronic Fertilizers and Manures	3(2-3-6) 3(2-3-6) 3(2-3-6) 1(0-3-2) 1(0-10-5) 3(3-0-6)	
02027423 02027451 02027461 02027491 02027499	(lecture hours - laboratory hours - Testing and Evaluation of Agricultural Machinery and Equipment Post-harvest Mechanization and Agricultural Production Storage Agricultural Mechatronics I Research Techniques in Agricultural Machinery and Mechatronics Specific Practicum in Agricultural Machinery and Mechatronic Fertilizers and Manures Specific subject: Selected Subjects	3(2-3-6) 3(2-3-6) 3(2-3-6) 1(0-3-2) 1(0-10-5)	
02027423 02027451 02027461 02027491 02027499	(lecture hours - laboratory hours - Testing and Evaluation of Agricultural Machinery and Equipment Post-harvest Mechanization and Agricultural Production Storage Agricultural Mechatronics I Research Techniques in Agricultural Machinery and Mechatronics Specific Practicum in Agricultural Machinery and Mechatronic Fertilizers and Manures	3(2-3-6) 3(2-3-6) 3(2-3-6) 1(0-3-2) 1(0-10-5) 3(3-0-6)	
02027423 02027451 02027461 02027491 02027499 02028321	(lecture hours - laboratory hours - Testing and Evaluation of Agricultural Machinery and Equipment Post-harvest Mechanization and Agricultural Production Storage Agricultural Mechatronics I Research Techniques in Agricultural Machinery and Mechatronics Specific Practicum in Agricultural Machinery and Mechatronic Fertilizers and Manures Specific subject: Selected Subjects  Total	self-study hours) 3(2-3-6) 3(2-3-6) 1(0-3-2) 1(0-10-5) 3(3-0-6) 3() 17()	
02027423 02027451 02027461 02027491 02027499	(lecture hours - laboratory hours - Testing and Evaluation of Agricultural Machinery and Equipment Post-harvest Mechanization and Agricultural Production Storage Agricultural Mechatronics I Research Techniques in Agricultural Machinery and Mechatronics Specific Practicum in Agricultural Machinery and Mechatronic Fertilizers and Manures Specific subject: Selected Subjects  Total	3(2-3-6) 3(2-3-6) 3(2-3-6) 1(0-3-2) 1(0-10-5) 3(3-0-6) 3() 17() mber of credits	
02027423 02027451 02027461 02027491 02027499 02028321 Year 4, Seme	(lecture hours - laboratory hours - Testing and Evaluation of Agricultural Machinery and Equipment Post-harvest Mechanization and Agricultural Production Storage Agricultural Mechatronics I Research Techniques in Agricultural Machinery and Mechatronics Specific Practicum in Agricultural Machinery and Mechatronic Fertilizers and Manures Specific subject: Selected Subjects  Total  Nur (lecture hours - laboratory hours -	3(2-3-6) 3(2-3-6) 3(2-3-6) 1(0-3-2) 1(0-10-5) 3(3-0-6) 3() 17()  mber of credits self-study hours)	
02027423 02027451 02027461 02027491 02027499 02028321  Year 4, Semon 02027425	Testing and Evaluation of Agricultural Machinery and Equipment Post-harvest Mechanization and Agricultural Production Storage Agricultural Mechatronics I Research Techniques in Agricultural Machinery and Mechatronics Specific Practicum in Agricultural Machinery and Mechatronic Fertilizers and Manures Specific subject: Selected Subjects Total  ester 2  Nur  (lecture hours - laboratory hours - Agricultural Machinery and Resources Management	3(2-3-6) 3(2-3-6) 3(2-3-6) 1(0-3-2) 1(0-10-5) 3(3-0-6) 3() 17() mber of credits	
02027423 02027451 02027461 02027491 02027499 02028321  Year 4, Semon 02027425 02027497	Testing and Evaluation of Agricultural Machinery and Equipment Post-harvest Mechanization and Agricultural Production Storage Agricultural Mechatronics I Research Techniques in Agricultural Machinery and Mechatronics Specific Practicum in Agricultural Machinery and Mechatronic Fertilizers and Manures Specific subject: Selected Subjects Total  ester 2  Nur  (lecture hours - laboratory hours - Agricultural Machinery and Resources Management Seminar	3(2-3-6) 3(2-3-6) 3(2-3-6) 1(0-3-2) 1(0-10-5) 3(3-0-6) 3() 17()  mber of credits self-study hours) 3(3-0-6) 1	
02027423 02027451 02027461 02027491 02027499 02028321  Year 4, Semon 02027425	Testing and Evaluation of Agricultural Machinery and Equipment Post-harvest Mechanization and Agricultural Production Storage Agricultural Mechatronics I Research Techniques in Agricultural Machinery and Mechatronics Specific Practicum in Agricultural Machinery and Mechatronic Fertilizers and Manures Specific subject: Selected Subjects  Total  ester 2  Nur  (lecture hours - laboratory hours - Agricultural Machinery and Resources Management Seminar Special Problems	3(2-3-6) 3(2-3-6) 3(2-3-6) 1(0-3-2) 1(0-10-5) 3(3-0-6) 3() 17()  mber of credits self-study hours) 3(3-0-6) 1 3	
02027423 02027451 02027461 02027491 02027499 02028321  Year 4, Semon 02027425 02027497	Testing and Evaluation of Agricultural Machinery and Equipment Post-harvest Mechanization and Agricultural Production Storage Agricultural Mechatronics I Research Techniques in Agricultural Machinery and Mechatronics Specific Practicum in Agricultural Machinery and Mechatronic Fertilizers and Manures Specific subject: Selected Subjects  Total  ester 2  Nur  (lecture hours - laboratory hours - Agricultural Machinery and Resources Management Seminar Special Problems GE: Language and Communication Group (Thai language)	self-study hours) 3(2-3-6) 3(2-3-6) 3(2-3-6) 1(0-3-2) 1(0-10-5) 3(3-0-6) 3() 17()  mber of credits self-study hours) 3(3-0-6) 1 3 3()	
02027423 02027451 02027461 02027491 02027499 02028321  Year 4, Semon 02027425 02027497	Testing and Evaluation of Agricultural Machinery and Equipment Post-harvest Mechanization and Agricultural Production Storage Agricultural Mechatronics I Research Techniques in Agricultural Machinery and Mechatronics Specific Practicum in Agricultural Machinery and Mechatronic Fertilizers and Manures Specific subject: Selected Subjects  Total  ester 2  Nur (lecture hours - laboratory hours - Agricultural Machinery and Resources Management Seminar Special Problems GE: Language and Communication Group (Thai language) Specific subject: Selected Subjects	3(2-3-6) 3(2-3-6) 3(2-3-6) 1(0-3-2) 1(0-10-5) 3(3-0-6) 3() 17()  mber of credits self-study hours) 3(3-0-6) 1 3 3() 3()	
02027423 02027451 02027461 02027491 02027499 02028321  Year 4, Semon 02027425 02027497	Testing and Evaluation of Agricultural Machinery and Equipment Post-harvest Mechanization and Agricultural Production Storage Agricultural Mechatronics I Research Techniques in Agricultural Machinery and Mechatronics Specific Practicum in Agricultural Machinery and Mechatronic Fertilizers and Manures Specific subject: Selected Subjects  Total  ester 2  Nur  (lecture hours - laboratory hours - Agricultural Machinery and Resources Management Seminar Special Problems GE: Language and Communication Group (Thai language)	self-study hours) 3(2-3-6) 3(2-3-6) 3(2-3-6) 1(0-3-2) 1(0-10-5) 3(3-0-6) 3() 17()  mber of credits self-study hours) 3(3-0-6) 1 3 3()	

# 3.1.4.2 Example of a study plan for students who choose to study in cooperative education

Year 1, Semes	ster 1		of credits	
01403111	Canaral Chamister	(lecture hours - laboratory hours - self-	•	
	General Chemistry		3(3-0-6)	
01403112	Laboratory in General Chemist	ry	1(0-3-2)	
01417111	Calculus I		3(3-0-6)	
01420115	Laboratory in Abridged Physics	S	1(0-2-1)	
01420119	Abridged Physics		3(3-0-6)	
01999111	Knowledge of the Land		2(2-0-4)	
02027112	,		1(0-3-2)	
02999144	Life Skills for Undergraduate S		<u>1(1-0-2)</u>	
		<b>Fotal</b>	<u>16( )</u>	
Year 1, Sem	ester 2		<b>Number of credits</b>	
01404111	D' '1 (D' 1	(lecture hours - laboratory hou		
01424111	Principles of Biology		3(3-0-6)	
02027111	Basic Farm Workshop		1(0-3-2)	
02027212	Agricultural Machinery Drawin	ng	2(1-3-4)	
02036299	General Practicum		2(0-10-5)	
01175xxx	Physical Education Activities		1(0-2-1)	
01355xxx	English		3( )	
	GE: Language and Communication	ition Group	1( )	
	GE: Well-being Group		2( )	
	GE: Thai and Global Citizenshi		<u>2( )</u>	
	T	otal	<u>17( )</u>	
Year 2, Sem	ester 1	Nun	nber of credits	
1 cai 2, 5 cm		(lecture hours - laboratory hours -		
02027211	Agricultural Surveying		2(1-3-4)	
02027221	Farm Engines		3(2-3-6)	
02027261	Electric and Electronics for Ag	riculture	3(2-3-6)	
02036221	Animal Science and Technolog		3(3-0-6)	
02036261	Soil Science		3(2-3-6)	
02036271	Horticultural Science and Tech	nnology	2(2-0-4)	
	GE: Entrepreneurship Group		3( )	
		otal	<u>19( )</u>	
Year 2, Sem	ester 2	(lecture hours - laboratory hours - s	ber of credits	
02027213	Materials and Elementary Mecl		3(3-0-6)	
02027213	Fundamental Agricultural Cont		3(2-3-6)	
02027202	Principles of Farm Machinery 1		3(2-3-6)	
02036211	Agricultural Extension and Tec		3(3-0-6)	
02036231	Crop Science and Technology	iniology Hansiel	2(2-0-4)	
02036231 01355xxx			3( )	
UISSSXXX	English GE: Aesthetics Group		3( )	
	•	Total	<u>3( )</u> <u>20( )</u>	

Year 3, Semo	ester 1		Number of credits
02027231	Principles of Farmstead Irrigation	(lecture hours - laboratory hou	3(2-3-6)
02027231		3(2-3-6)	
02027322	1	3(2-3-6)	
02027361	Post-harvest Mechanization and A		3(2-3-6)
02027 131	Storage	igneutatur i roduction	3(2 3 0)
02027461	Agricultural Mechatronics I	3(2-3-6)	
02027491	Research Techniques in Agricultu	ıral Machinery and	1(0-3-2)
0_0_0	Mechatronics		-(* -)
02036371	Fundamental Agricultural Pest M	anagement	3(2-2-5)
01355xxx	_		3( )
	Tota	al	22()
Year 3, Semo	ester 2	Ŋ	Number of credits
10010,50111		(lecture hours - laboratory hour	rs - self-study hours)
02027323	Principles of Farm Machinery III		3(2-3-6)
02027324	Agricultural Power Transmission		3(2-3-6)
02027362	Computer Programming for Agric		2(1-3-4)
02027399	Basic Specific Practicum in Agric	cultural Machinery and	1(0-10-5)
	Mechatronics		
02027423	Testing and Evaluation of Agricu	ltural Machinery and	3(2-3-6)
	Equipment		
02027441	Agricultural Production Technolo	ogy in Environmental Contro	ol 3(2-3-6)
	System		
	GE: Entrepreneurship Group		3( )
	Specific subject: Selected Subject		3( )
	1	otal	<u>21( )</u>
Year 4, Semo	ester 1		Number of credits
01/22111	Duinainles of Statistics	(lecture hours - laboratory hou	
01422111 02027425	Principles of Statistics	ourage Managamant	3(3-0-6)
02027423	Agricultural Machinery and Res Seminar	ources Management	3(3-0-6)
02027498	Special Problems		3
02027498	Specific Practicum in Agricultural	Machinery and Machatronic	1(0-10-5)
02028321	Fertilizers and Manures	Machinery and Mechanomic	3(3-0-6)
02020321	GE: Language and Communicat	ion Group (Thai language)	3( )
	Specific subject: Selected Subject		3( )
		Total	17( )
		L V 664	<u> </u>
Year 4, Semo	ester 2		Number of credits
1001 4, 501110		(lecture hours - laboratory hou	
02036490	Cooperative Education		6
	ŗ	Potol	•
		Гotal	<u>6</u>