Bachelor of Technology Program in
INNOVATIVE AGRIPRENEUR

International Undergraduate Program

Institute of Agricultural Technology
Suranaree University of Technology

Open for Applications
15 December 2024 – 31 March 2025
(Available for both the Royal Scholarship and Regular Student Selection)

Scan the QR code to apply online

KEY OF POSIBILITIES: GRAB YOUR KEY AND REACH US TODAY

We incubate entrepreneurs and new generation of innovative food and agribusiness owners to promote innovative-based economy within the domestic and international.

PROGRAM CREDITS

Total 175 credits

1. **General Education Courses** — **38 credits**
   - 1.1 General Education — 10 credits
   - 1.2 Foreign Languages — 15 credits
   - 1.3 Elective General Education — 8 credits

2. **Core Courses** — **129 credits**
   - 2.1 Basic Specific Courses — 54 credits
   - 2.2 Specialized Courses — 60 credits
   - 2.3 Cooperative Education / Customer Empathy and Real-World Business Opportunities — 15 credits

3. **Free Elective Courses** — **8 credits**

Agricultural mind that is well rounded. Innovative Agripreneur live in a constantly changing world of agricultural technology. Academic versatility and multiple skills are crucial to let our learners explore the universe of technology obtaining knowledge from real-world problems and hand-on experience.

CONTACT US

🌐 Interadmission.sut.ac.th
✉ iatadmin@sut.ac.th

Our Facebook

Facebook.com/InnoAgriSUT

Our Core Program Strengths

Problem-based learning

Field Trips

Create own business

Laboratory

Multi-purpose space

International internship

SELECTED COURSES

- ▸ Crop product and management of plants
- ▸ Legal aspects in developing agribusiness
- ▸ Animal production systems and its products
- ▸ Business model and strategy for agribusiness
- ▸ Design thinking for innovation
- ▸ Financial innovative management
- ▸ Agri-food product and service design
- ▸ Recipient centric communication
- ▸ Digital marketing and branding
- ▸ Introduction of food preservation
- ▸ Leadership and human resource management
- ▸ Entrepreneurship and innovation for business
- ▸ Marketing research & opportunity analysis
- ▸ Science of cooking and gastronomy
- ▸ Creative working in communication process
- ▸ Cross-cultural communication

Total Program Costs

Tuition fee:	140,000 THB
Additional fee:	41,600 THB
Total	181,600 THB

* 3,500 THB replacement cost coverage included

iA
Key to possibilities

KEY OF POSIBILITIES: GRAB YOUR KEY AND REACH US TODAY
Bachelor of Technology Program in Innovative Agripreneur
Institute of Agricultural Technology, Suranaree University of Technology

Philosophy Incubate entrepreneurs and new generation of innovative food and agribusiness owners to promote innovative-based economy within the domestic and international.


Career Path

1. Business Owner and free enterprise
2. Professional career in Agribusiness related industry such as agribusiness company, private agribusiness, and agribusiness related financial institutions.
3. Professional career in the governmental organization as well as the state enterprise organization such as the scholar and the official in the following governmental organization: Ministry of Agriculture and Cooperatives, the Ministry of Commerce, and the Ministry of Industry. Teaching profession under the Ministry of Education.

Curriculum not less than 175 credit

1. General Education Course	38	credit
1.1 General Education Courses	15	credit
1.2 Foreign Languages Courses	15	credit
1.3 Elective General Education Course	8	credit
2. Core Courses	129	credit
2.1 Basic Specific Course	54	credit
2.2 Specialized Courses	60	credit
2.3 Cooperative Education Course	15	credit
/Customer Empathy and Real-World Business Opportunities		
3. Free Elective Course	8	credit
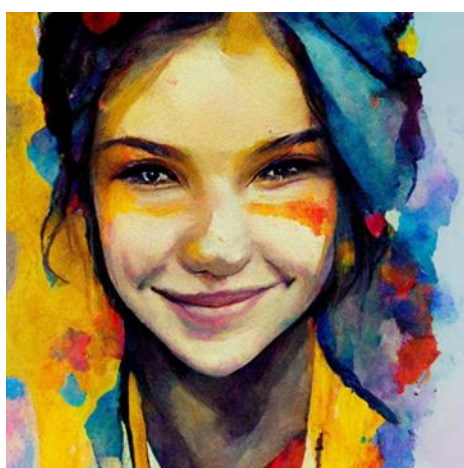
Portfolio and TCAS

Applicants must have the following qualifications:
- Be currently in a high school or graduated from a high school (M.6) with all majors.
- Achieve a minimum GPAX of 2.0 in all subjects up to the second semester of M.5
  Or Having completed Grade 12 or equivalent in relevant track of studies
  Or English language test
    - TOEFL not less than 460
    - IELTS not less than 5.0
    - TOEIC not less than 550
   - SAT not less than 400

More information, please contact us:

หลักสูตรเทคโนโลยีบัณฑิต สาขาวิชาผู้ประกอบการเกษตรเชิงนวัตกรรม (หลักสูตรนานาชาติ) สำนักวิชาเทคโนโลยีการเกษตร มหาวิทยาลัยเทคโนโลยีสุรนารี

Academic Building 2, 111 University Avenue, Suranaree Sub-District, Muang Nakhon Ratchasima District, Nakhon Ratchasima 30000 Thailand
Email: iatadmin@sut.ac.thTel +66-44-22-4356

Innovative Agripreneur Program is interdisciplinary and comprises courses in a variety of sciences

Agricultural Technology
- The Food Journeys
- Introduction to Technology in Food Preservation
- Principle of Food Safety
- Science of Cooking
- Animal Production Systems and Its Products
- Crop Production and Management of Plant
- Gastronomy
- Microbes and Biotechnology-Based Industry
- Smart Farming
- Agri-Food Innovation Project
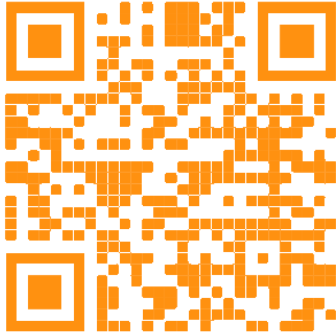
**Innovative Agripreneur Program
Official Facebook Page**

Entrepreneurship and Business Administration
- Design and Engineering for Agricultural Students
- Entrepreneurship and Innovation in Agri-Food Business
- Design Thinking for Innovation
- Market Research and Opportunity Analysis in Agri-Food Business
- Intellectual Property for Agri-Food Business
- Business Model and Strategy for Innovative Agri-Food Business
- Value Proposition and Go to Market Strategies
- Digital Marketing and Branding
- Agri-Food Product and Service Design
- Financing Innovative Business
- Agri-Food Operation Management
- Legal Aspects in Developing Agri-Food Business
- Smart Project Management for Innovation Business
- Leadership and Human Resource Management for Small & Innovative Business
- Customer Empathy and Real-World Business Opportunities

Philosophy and Communication
- Art of storytelling
- Philosophy of Life
- Creativity
- Communications Design for Solve Problems
- Media Literacy
- Creative Working Processes in Communications
- Cross-cultural Communication
- Listening, Speaking, Reading, Writing and, Presentation Skills in Communications
- Aesthetic
- Recipient-centric Communications
- Justices Studies
- Global Disruption and Holistic Development
- Development of Media to Solve Social Problems

Our Core Values

Agricultural mind that is well rounded. Innovative Agripreneurs live in a constantly changing world of agricultural technology. Academic versatility and multiple skills are crucial. Here, we let our learners explore the universe of technology obtaining knowledge from real word problems and hands-on experience. Interdisciplinary learning approaches are used to fits different learning styles with aims for learners to obtain essential skills. Having seen the landscape of the 'world' known to men, learners realize there are more to learn and plenty they are not capable of. Eager to always learn and humble is the constitution of well-roundedness.

An entrepreneurial self that goes beyond oneself. Never before has the world appeared so small that what happens in one place has a profound impact across the globe. We believe that what makes a "good" entrepreneur "great" is the ability to bring forth the quality of life for people in society as a whole and there is no other time in human history than NOW to be the change agent in this century of hope. Thus, our program was finely designed to incubate not only business prowess but also the people-oriented mindset for learners to be socially engaged entrepreneur.

A human being that is "human". An innovative agipreneur ultimately succeeds only when learners possess human values. Liberal is the lighthouse that guides them through the career path. Liberty here is incubated through coaching, courses, debates, projects and community-based learning conducted by specialists who work in different spectrums of humanity such as youth rights activists, communication artists, scientists and international relations experts. With observing the world of diverse shades and colors, comes the embracement of diversity and with the embracement comes empathy towards others which constitutes a strong foundation for business sustainability.

July 4, 2024 : Information form IAT

Program: Bachelor of Technology Program in Innovative Agripreneur
Degree: Bachelor of Technology (Innovative Agripreneur)
Study Plan:

Year	First Trimester	Cr	Second Trimester	Cr	Third Trimester	Cr
FRESHMAN	202202 Citizenship and Global Citizens	3	202201 Life Skills	3	202108 Digital Literacy	2
	213101 English for Communication 1	3	202203 Man, Society and Environment	3	202109 Use of Application Programs for Learning	1
	311151 Food Journey	3	213102 English for Communication 2	3	311154 Introduction to Technology in Food Preservation	3
	311111 Foundation to Communications	3	311152 Gastronomy	3	311155 Principle of Food Safety	3
	311171 What a wonderful world	3	311153 Science of Cooking	3	311113 Creative Working Processes in Communications	3
	311172 Creativity	3	311112 Communications Design for Solve Problems	3	311174 Cross-cultural Communication	3
			311173 Media Literacy	3		
	Choose from Elective General Education *202111 Thai for Communication*	*2*	*Choose from Elective General Education* *202111 Thai for Communication*	*2*	*Choose from Elective General Education* *202111 Thai for Communication*	*2*
	202175 Art Appreciation	*2*	*202175 Art Appreciation*	*2*	*202175 Art Appreciation*	*2*
	202181 Holistic Health	*2*	*202181 Holistic Health*	*2*	*202181 Holistic Health*	*2*
	202222 Professional and Community Engagement	*2*	*202222 Professional and Community Engagement*	*2*	*202222 Professional and Community Engagement*	*2*
	202241 Law in Daily Life	*2*	*202241 Law in Daily Life*	*2*	*202241 Law in Daily Life*	*2*
	202324 Pluri-Cultural Thai Studies	*2*	*202324 Pluri-Cultural Thai Studies*	*2*	*202324 Pluri-Cultural Thai Studies*	*2*
	202331 ASEAN Studies	*2*	*202331 ASEAN Studies*	*2*	*202331 ASEAN Studies*	*2*
	202373 Design Thinking	*2*	*202373 Design Thinking*	*2*	*202373 Design Thinking*	*2*
	xxxxxx Free elective	*8*	*xxxxxx Free elective*	*8*	*xxxxxx Free elective*	*8*
	Total	**18**	**Total**	**21**	**Total**	**15**

Year	First Trimester		Cr	Second Trimester		Cr	Third Trimester		Cr
SOPHOMORE	311231	Animal Production Systems and Its Products	3	311214	Smart Farming	3	202207	Man, Economy and Development	3
	311221	Crop Production and Management of Plant	3	311241	Microbes and Biotechnology-Based Industry	3	213203	English for Academic Purposes	3
	311211	Listening, Speaking, Reading, Writing and, Presentation Skills in Communications	3	311212	Recipent-centric Communications	3	311213	Development of Media to Solve Social Problems	3
	311271	Aesthetic	3	311272	Justices Studies	3	311215	Design and Engineering forAgricultural Students	3
							311273	Global Disruption and Holistic Development	3
	Choose from Elective General Education		*8*	*Choose from Elective General Education*		*8*	*Choose from Elective General Education*		*8*
	202111	*Thai for Communication*	*2*	*202111*	*Thai for Communication*	*2*	*202111*	*Thai for Communication*	*2*
	202175	*Art Appreciation*	*2*	*202175*	*Art Appreciation*	*2*	*202175*	*Art Appreciation*	*2*
	202181	*Holistic Health*	*2*	*202181*	*Holistic Health*	*2*	*202181*	*Holistic Health*	*2*
	202222	*Professional and Community Engagement*	*2*	*202222*	*Professional and Community Engagement*	*2*	*202222*	*Professional and Community Engagement*	*2*
	202241	*Law in Daily Life*	*2*	*202241*	*Law in Daily Life*	*2*	*202241*	*Law in Daily Life*	*2*
	202324	*Pluri-Cultural Thai Studies*	*2*	*202324*	*Pluri-Cultural Thai Studies*	*2*	*202324*	*Pluri-Cultural Thai Studies*	*2*
	202331	*ASEAN Studies*	*2*	*202331*	*ASEAN Studies*	*2*	*202331*	*ASEAN Studies*	*2*
	202373	*Design Thinking*	*2*	*202373*	*Design Thinking*	*2*	*202373*	*Design Thinking*	*2*
	xxxxxx	*Free elective*	*8*	*xxxxxx*	*Free elective*	*8*	*xxxxxx*	*Free elective*	*8*
	Total		**12**	**Total**		**12**	**Total**		**15**

Year	First Trimester		Cr	Second Trimester		Cr	Third Trimester		Cr
JUNIOR	311361	Entrepreneurship and Innovation in Agri-Food Business	3	311365	Business Model and Strategy for Innovative Agri-Food Business	3	3113610	Agri-Food Operation Management	3
	311362	Design Thinking for Innovation	3	311366	Value Proposition and Go to Market Strategies	3	3113611	Legal Aspects in Developing Agri-Food Business	3
	311363	Market Research and Opportunity Analysis in Agri-Food Business	3	311367	Digital Marketing and Branding	3	3113612	Smart Project Management for Innovation Business	3
	311364	Intellectual Property for Agri-Food Business	3	311368	Agri-Food Product and Service Design	3	3113613	Leadership and Human Resource Management for Small & Innovative Business	3
	311381	Agri-Food Innovation Project I	3	311369	Financing Innovative Business	3	311383	Agri-Food Innovation Project III	2
	311391	Customer Empathy and Real World Business Opportunities I	3	311382	Agri-Food Innovation Project II	2	Alternative course for Cooperative Education		
				311392	Customer Empathy and Real World Business Opportunities II	3	311393	Customer Empathy and Real World Business Opportunities III	3
				301490	Pre-Cooperative Education	1			
	Choose from Elective General Education		8	*Choose from Elective General Education*		8	*Choose from Elective General Education*		8
	202111	*Thai for Communication*	*2*	*202111*	*Thai for Communication*	*2*	*202111*	*Thai for Communication*	*2*
	202175	*Art Appreciation*	*2*	*202175*	*Art Appreciation*	*2*	*202175*	*Art Appreciation*	*2*
	202181	*Holistic Health*	*2*	*202181*	*Holistic Health*	*2*	*202181*	*Holistic Health*	*2*
	202222	*Professional and Community Engagement*	*2*	*202222*	*Professional and Community Engagement*	*2*	*202222*	*Professional and Community Engagement*	*2*
	202241	*Law in Daily Life*	*2*	*202241*	*Law in Daily Life*	*2*	*202241*	*Law in Daily Life*	*2*
	202324	*Pluri-Cultural Thai Studies*	*2*	*202324*	*Pluri-Cultural Thai Studies*	*2*	*202324*	*Pluri-Cultural Thai Studies*	*2*
	202331	*ASEAN Studies*	*2*	*202331*	*ASEAN Studies*	*2*	*202331*	*ASEAN Studies*	*2*
	xxxxxx	*Free elective*	*8*	*xxxxxx*	*Free elective*	*8*	*xxxxxx*	*Free elective*	*8*
	Total		**17**	**Total**		**21**	**Total (Cooperative Education)**		**14**
							Total (Non Cooperative Education)		**17**

Bachelor of Technology (Innovative Agripreneur)
Last updated: 25 February 2021

Year	First Trimester	Cr	Second Trimester	Cr	Third Trimester	Cr
SENIOR	301491 Cooperative Education I	8	213204 English for Specific Purposes	3		
	311491 Customer Empathy and Real World Business Opportunities IV	3	213305 English for Careers	3		
			311492 Customer Empathy and Real World Business Opportunities V	3		
	Choose from Elective General Education	8	*Choose from Elective General Education*	8		
	202111 Thai for Communication	*2*	*202111 Thai for Communication*	*2*		
	202175 Art Appreciation	*2*	*202175 Art Appreciation*	*2*		
	202181 Holistic Health	*2*	*202181 Holistic Health*	*2*		
	202222 Professional and Community Engagement	*2*	*202222 Professional and Community Engagement*	*2*		
	202241 Law in Daily Life	*2*	*202241 Law in Daily Life*	*2*		
	202324 Pluri-Cultural Thai Studies	*2*	*202324 Pluri-Cultural Thai Studies*	*2*		
	202331 ASEAN Studies	*2*	*202331 ASEAN Studies*	*2*		
	xxxxxx Free elective	*8*	*xxxxxx Free elective*	*8*		
	Total (Cooperative Education)	**8**	**Total (Cooperative Education)**	**6**		
	Total (Non Cooperative Education)	**3**	**Total (Non Cooperative Education)**	**9**		

Program: Bachelor of Technology Program in Innovative Agripreneur

Degree: Bachelor of Technology (Innovative Agripreneur)

Course Description:

Courses	Credit (Lect.-Lab-Self stud.)	Prerequisite	Course Description	Expected Learning Outcomes
General Education Courses				
General Education Core Courses				
202108 Digital Literacy	2(2-0-4)	None	Selecting sources of information for research; using digital technology in information retrieval; collecting and evaluating information qualities; analyzing and synthesizing information; writing reports and referencing; security, effects, ethics, morals, and laws regarding media and digital technology using	
202109 Use of Application Programs for Learning	1(0-2-1)	None	Basics of computer programming; using application software for document management; presenting information; data management for calculation and creative database management; designing and developing a website for working in a daily life	
202201 Life Skills	3(3-0-6)	None	Knowing and understanding self and others; rational thinking and analyzing; systems and holistic thinking; creative decision-making and problem-solving; self-directed learning in a context of lifelong learning; work-life balance; sufficiency in living; self-care; stress and emotion management; solutions to life issues	

Courses	Credit (Lect.-Lab-Self stud.)	Prerequisite	Course Description	Expected Learning Outcomes
202202 Citizenship and Global Citizens	3(3-0-6)	None	Important characteristics of citizens; roles of Thai and global citizens; important concepts of international relations; international organizations; transboundary impacts; critique and lesson-learned from international phenomena	
202203 Man, Society and Environment	3(3-0-6)	None	Conditions of being human; cultural diversity; social order; ecological system; natural resources and environment; utilization of natural resources; sustainable development	
202207 Man, Economy and Development	3(3-0-6)	None	Economy and social development; trends of economic and social development; exclusive development; inclusive development; innovation-based development; creative economy; community engagement; social entrepreneurship	
Foreign Languages Courses				
213101 English for Communication 1	3(3-0-6)	None	Developing students' abilities for effective communication in social settings; focusing on integrated skills with the primary emphasis on listening and speaking; developing communication and language learning strategies; and promoting autonomous learning using various resources	

Courses		Credit (Lect.-Lab-Self stud.)	Prerequisite	Course Description	Expected Learning Outcomes
213102	English for Communication 2	3(3-0-6)	213101 English for Communication 1	Further developing students' abilities for effective communication in social and academic settings; focusing on integrated skills, particularly listening and speaking for academic purposes; further developing communication and language learning strategies; and reinforcing autonomous learning using various semi-academic materials from a variety of resources	
213203	English for Academic Purposes	3(3-0-6)	213102 English for Communication 2	Course content dealing with English for academic purposes for effective communication in an academic field of study; text-based activities involving integrated language skills with an emphasis on reading; exposure to both authentic and semi-authentic materials from both printed and audiovisual materials, as well as online resources	
213204	English for Specific Purposes	3(3-0-6)	213203 English for Academic Purposes	Further enhancement of students' language skills and ability in science and technology content; exposure to authentic language in science and technology from both printed and audiovisual materials, as well as online resources; focus on text-based tasks involving integrated skills with an emphasis on reading and writing	
213305	English for Careers	3(3-0-6)	213204 English for Specific Purposes	Developing English skills needed for employment preparation, covering such topics as job search, resumes, cover letters, and job interviews; effective communication skills in the workplace; skills needed in preparing for the Test of English for International Communication (TOEIC)	
Elective General Education Courses					

Courses	Credit (Lect.-Lab-Self stud.)	Prerequisite	Course Description	Expected Learning Outcomes
202175 Art Appreciation	2(2-0-4)	None	Definition of art; artists' aspiration for art creation from various perspectives; values and aesthetic for soul; contexts of arts; visual culture towards art interpretation; roles and effects of arts in a society and world cultures through various perspectives; artwork creation valuable for self and others; arts and museums; public arts; music and art therapy; arts for sufficient life	
202324 Pluri-Cultural Thai Studies	2(2-0-4)	None	Knowledge management and understanding of the system of Thai society and culture, plurality in Thai economic and political development, significance of plural folk wisdom, concept of sufficiency economy in worldwide.	
202331 ASEAN Studies	2(2-0-4)	None	Origins and purposes of ASEAN community; unity based on a socio-cultural diversity; respects for rights, civic responsibility and human dignity under different types of governments in each ASEAN Member State; living together happily and peacefully with ASEAN friends; quality of life in education and working systems	
202373 Design Thinking	2(2-0-4)	None	Creative thinking; questioning and problem-solving; brainstorming and society need-based service design; prototyping; appropriate application of innovation; lesson-learned	
Basic Specific Courses **Basic Specific Courses: Math and Science**				

Courses	Credit (Lect.-Lab-Self stud.)	Prerequisite	Course Description	Expected Learning Outcomes
311151 The Food Journeys	3(2-3-4)	None	Backward jorneys of foods in the market. The course covers how the foods arrived to end users from the beginning in farms and before, in a backward sequence, and how science, technology are involved. This includes, for example, how foods are stored on shelf, management of the foods on shelf, devliery of the food products from the factories, food production in the industrial scale, preparation and preservantion of the raw materials for the food production, delivery of the raw materials froms farm to the factories, production of animals and crops, harvesting processes, how animal and crop breeds are obtained. The emphasis is also on how the food could obtained from multiple production approaches such as safe agriculture and organic agriculture. The course highlights the fact that scienece and technology is in all the processes and management. The emphasis is also in leading the student to identiy opportunities and risks in the food supply chains and the food businesses. Evolution of the technology and innovation involed, the effects of the global changes on food business and the relevant regulations are covered. This course is a brift introduction to the 4 years program.	1. Understand food production chain overview Food and Agriculture Business And studying in the course. 2. Understands and can explain the linkages of science and technology in the production chain, Food and Agribusiness. 3. Understands the opportunities and risks in the food production chain. The world of food and agriculture.

Courses	Credit (Lect.-Lab-Self stud.)	Prerequisite	Course Description	Expected Learning Outcomes
311152 Gastronomy	3(2-3-4)	None	Arts and science of foods, cooking and food culture. Biological and spiritual requirement of foods. Foods as an art forms, emotional experience, tradition and multiculture. Evolution of food culture. Dining manners.	1. Understand the food landscape from the perspective of the energy and chemical Sources of the body Form of art And experience In many cultures. 2. Understand the risks and opportunities for food innovation in a national and global context. 3. Apply to create innovative ideas related to food.
311153 Science of Cooking	3(2-3-4)	None	Foundation science in cooking foods. Physical, chemical and biological processes in cooking. Molecular interaction, and mechanics of food ingridients in the perception of tastes, scents and texture of foods. Science of deliciousness. Human evolution and the crave for greasy and sweet foods. Thermodynmics, mass transfers, chemical reactions in cooking eggs. Cell biology, biomolecular composition of food ingridients and their contribution to cooking. Food tendering. Food spoilage and preservation. Browning and food colors alteration. Modern techniques and equipments of cooking.	1. Understand the scientific principles underlying cooking and food exposure. 2. Able to apply scientific knowledge in cooking. 3. Understand the opportunities and risks in the food business and related businesses Based on scientific concepts.
311154 Introduction to Technology in Food Preservation	3(2-3-4)	None	This course will focus on three areas as follow: 1) Food preservation using low heat (mild process) such as chilling or freezing, the reduction of water activity, drying, concentration and hurdle technology. 2)Food preservation using heat treatment such as pasteurization, cooking and blanching. 3) Food prevention using packaging.	1. The students will be able to know and understand about technology in food preservation. 2. The students will be able to selected appropriate technology for food preservation.

	Courses	Credit (Lect.-Lab-Self stud.)	Prerequisite	Course Description	Expected Learning Outcomes
311155	Principle of Food Safety	3(2-3-4)	None	Prerequisite Good practice in food plant, management of wastes in food plants, quality assurance system, primary good manufacturing practice (pGMP), good manufacturing practice and harzard analysis critical control point (HACCP).	The students will be able to know and understand about principle of food safety.
Basic Technology courses					
311111	Foundation to Communications	3(2-3-4)	None	This course will develop students to understand communication skills in various ways, focusing on learning the principles and procedures of communication. In order for students to be able to effectively convey the content or message they need in a complete process both online and onground. Not only develop students to be media creators but also provides an understanding of the dimensions of design, creativity, and distribution.	1. Understand the principles and procedures of communication. 2. Able to lecture, analyze, critique case.
311112	Communications Design for Solve Problems	3(2-3-4)	None	The course presents and develop students to understand a design process to solve problems in current contexts. Students will learn analytical principles to explore the problem Including the design and communication with various tools and processes. Moreover, this course still worth using many learning tools to help student to decide to use the appropriate way to build their own creativity.	1. Understand a design process to solve problems in current contexts. 2. Understand to decide to use the appropriate way to build their own creativity.

	Courses	Credit (Lect.-Lab-Self stud.)	Prerequisite	Course Description	Expected Learning Outcomes
311113	Creative Working Processes in Communications	3(2-3-4)	None	This course builds understanding and presents creative working skills in communication tasks through tools such as content creation initiatives, developing content for communication, includes processes for measuring performance, creative communication, and social impact in different ways. Learners can choose varieties of work processes that are appropriate for the situation.	Understanding and presents creative working skills in communication tasks through tools.
311211	Listening, Speaking, Reading, Writing and Presentation Skills in Communications	3(2-3-4)	None	The subject offers the effective listening, speaking, reading, writing and presentation skills to the learner who is able to acquire material properly and deliver what they want. Students will learn deep listening skill, the World cafe conversation, the Dialogue conversation, the writing skills for various contexts and also the communication and presentation skill in different situations.	1. Understand the effective listening, speaking, reading, writing and presentation skills. 2. Able to conversation, the writing skills for various contexts and also the communication and presentation skill in different situations.
311212	Recipent-centric Communications	3(2-3-4)	None	This course presents communication skills and principles with a strong focus on message awareness. Learners will understand the views of the audience through various conditions and factors such as the process of understanding the media, understanding the meta model, as well as the assessment of the awareness situation to creat the media and presentation to achieve their objectives in different situations. Students will also learn deep communication skills in various dimensions.	1. Understand the principles with a strong focus on message awareness. 2. Understand the views of the audience through various conditions and factors.

	Courses	Credit (Lect.-Lab-Self stud.)	Prerequisite	Course Description	Expected Learning Outcomes
311213	Development of Media to Solve Social Problems	3(2-3-4)	None	This subject focuses on the practice of media creation and development to solve social problems in issues affecting students. Students will learn in the form of Project-based learning and undertake projects from studying problem processes or sources, analyzing the driving forces and risk situations and also solving problems through various communication mechanisms, reviewing after action the pilot project launching and presenting results.	1. analyzing the driving forces and risk situations and also solving problems through various communication mechanisms. 2. Understand and learn in the form of Project-based learning. 3. Understand the pilot project launching and presenting results.
311171	What a wonderful world	3(3-0-6)	None	This course offers students to understand themselves and others and are able to openly survey their needs or emotions, as well as can contemplate their meaningful life and have the patience to find life values and internal needs. Moreover students will know and be clear about their life goals, can see themselves connected to society, communities and others. In particular, they are able to manage and use their potential to achieve their own needs. By learning through the process and various tools in terms of philosophy, psychology, literature, art to develop students to have well-being life.	1. Students understand themselves in terms of their own needs, abilities, weaknesses, factors and limitations in their life. 2. Students can create a life map to guide their own goal. 3. Students can adjust themselves to the guideline appropriately.

Courses	Credit (Lect.-Lab-Self stud.)	Prerequisite	Course Description	Expected Learning Outcomes
311172　Creativity	3(3-0-6)	None	This course focuses on improving students to apply a variety of principles and creative processes appropriately. Including, to give students the fundamental skills such as leadership skills, team management, strategy planning, problem solving, decision making, project management, time management, stress management, creativity tools, learning skills. Students will learn how to create projects through various tools, including Brainstorming, Brainwriting, Reverse brainstorming, Starburting, the Charette procedure, Crawford's Slip Writing method, Round-Robin, Rolestorming, Metaphorical thinking, SEIQ, Reframing Matrix, SCAMPER, Stealth Innovation, Beyonder Creativity, TRIZ, Kano Model Analysis, Design Thinking, Disney Model, Doblin's Innovation, Six Thinking Hats, OODA loop, etc. As well as learners will learn by project-based.	1. Students understand the components and factors of creativity. 2. Students can value, analyze, and criticize the creativity of the works. 3. Students are able to synthesize creative works. 4. Students develop themselves as creative people.
311173　Media Literacy	3(3-0-6)	None	The course focuses on the students' skills in understanding others through media analysis, divided into 6 main topics. Active User in Global Environment, Sex & Gender, Media Behavior & Gain back the freewill, Bias & Violence, Truth and Post Truth, Power of choices.	1. Understand the history, methods, examples and case studies that affect the world. 2. understand their intentions or hidden content in media and communication as well as they can experience the major differences among people, learn to identify their own feelings.

Courses	Credit (Lect.-Lab-Self stud.)	Prerequisite	Course Description	Expected Learning Outcomes
311174 Cross-cultural Communication	3(3-0-6)	None	The course focuses on providing students with cultural skills for understanding the diversity and complexity of societies and cultures. As well as developing students to have an appropriate communication skill, especially when facing different cultures. Including, developing students to be flexible and able to adjust themselves to live with the globalized world.	1. understanding cultural skills and the diversity and complexity of societies and cultures. 2. developing students to be flexible and able to adjust themselves to live with the globalized world.
311271 Aesthetics	3(3-0-6)	None	This course offers a diverse set of methods of thinking and perspectives on the value of aesthetics in various contexts, including understanding the aesthetics in philosophy, society, culture, psychology and evolution. Through different examples of art such as literature, film, fashion, painting, music, taste, performance, visual art, experimental works, and conceptual arts by focusing on the learners' ability to understand, evaluate, criticize, value, analyze, make decisions, and transfer ideas through initial criteria, such as coherence, complexity, intensity, and originality.	1. Students understand the landscape of Asethetic, elements of Asthetics 2. Students can evaluate, analyze and criticize artistic items. 3. Students can apply understanding in asethetic to themselves and develop tastes of their own.

Courses	Credit (Lect.-Lab-Self stud.)	Prerequisite	Course Description	Expected Learning Outcomes
311272 Justice studies	3(3-0-6)	None	This course focuses on the students to understand the framework of justice in various dimensions and can apply the principles to any situation, both directly to themselves and to the country or the world situation with details of teaching according to current topics such as Privilege and Bias, Social movement and Political movement, Gender, Media literacy, Immigrant, Nation and Institution, Oppressive and Violence structure, Post colonial, Post anthropocene, Empathy, Social innovation through participation in the classroom, field trips, external speakers and project-based learning.	1. Students understand the composition and the conceptual framework for assessing and judging the situation 2. Students are able to analyze, criticize, and judge appropriately 3. Students develop themselves as well-thought-minded people who have a growth mindset and are able to criticize and make judgments with principles.
311273 Global disruptions and holistic development	3(3-0-6)	None	This course offers students to learn and understand the disruption in economic, social, cultural and perspective on the conditions of the modern world. Through examples of events, news and analyzing tools such as Scenario planning to understand the accelerating factors, supporting factors, leverage points by system thinking.	1. Students understand patterns and have awareness of the substitution of global disruptions 2. Students are able to analyze the reasons and the effects of disputes that occurred in the past. 3. Students are able to analyze the events and their future effects from the current situation.
Specialized Courses **Specific Technology Courses**				

	Courses	Credit (Lect.-Lab-Self stud.)	Prerequisite	Course Description	Expected Learning Outcomes
311231	Animal Production Systems and Its Products	3(2-3-4)	None	Overview of the economic importance of the animal products industry. Study the segment of chain of animal production. Overview of animal production in the national, regional and global level, challenges, and opportunities of enterprises (large, medium, small). Products from animal sources including meat, milk, egg and its by-products from animal industry. Ideas for using technology and innovation to improve animal product's quality.	1. Students understand the entire chain of animal production. 2. Students can analyze animal production systems at various levels. 3. Students can develop a highly efficient animal production.
311221	Crop Production and Management of Plant	3(2-3-4)	None	The system of crop production and agricultural standard, plant growth and development, plant varieties and plant breeding, management of soil, water and plant nutrients, plant pest controls, postharvest managements and field trip at private sector.	1. Learners know the systems of crop production and agricultural standards 2. Learners know the important of plant nutrients, water and soil properties, relates to plant watering 3. Learners know the important of plant pest and their controls 4. Learners know the postharvest handling of plant
311214	Smart Farming	3(2-3-4)	None	Modern science, technology and innovation are playing an important roles in agriculture, for instance: drones, image analysis, mathematical models and forecasting in agriculture, IoTs and sensor technology, smart greenhouse, smart aquaculture systems, smart chicken farms, automation and robotics, AI. The feasibility and constrains of implementations of the modern technology and innovations to local agriculture. Opportunities and risks in agro business due to the technological disruptions.	1. Students know and understand the technology landscape and trends of smart farm technology. 2. Know and understand the different types of smart farm technology applications. 3. Understand the visibility of opportunities, limitations and risks of farm technology applications. Genius locally and globally.

	Courses	Credit (Lect.-Lab-Self stud.)	Prerequisite	Course Description	Expected Learning Outcomes
311241	Microbes and Biotechnology-based Industry	3(2-3-4)	None	The roles of biotechnology and biotechnology industry in the field of agricultural technology. Evolution of Biotechnology. Trends in biotechnology. Risks and opportunites in biotechnology-based business. Example of topics covered, Mushroom farming and conventional fermatations, Bioprocess engineering and refinery, Biopharmaceuticals, Algal technology, Bioenergy, Bioremediation, Alternaive proteins, Soil biotechnology and the related industry, cattles, fish, chicken biotechnology and farming, high value compounds from living things	1. Understand the role of biotechnology in modern agribusiness and food. 2. Have basic knowledge of biotechnology. 3. Understand the opportunities and risks in agribusiness and food businesses in Biotechnology.
311215	Design and Engineering for Agricultural Technology Students	3(2-3-4)	None	Think like an engineer, engineering mindset, engineering principles, Identification of users' requirements, demands, functionalities, and constraints, Translation of the requirements into designs, Ideation and conceptualization of design, Engineering material, tools and softwares, Handling contractors, Agricultural construction project, Agricultural Electronics and electrical project, Landscaping project	1. Students understand engineering materials and tools. 2. Students understand principles, methods, and engineering processes. 3. Students can communicate effectively with users and contractors engineers as intermediaries. 4. Students can create a design vision. And transform vision into efficient design work according to user needs.
311361	Entrepreneurship and Innovation in Agri-Food Business	3(2-3-4)	None	Learn about entrepreneurship, innovation and business technology in agriculture and food, attitudes and motivations of business- and social-entrepreneurs, characteristics of a successful entrepreneur, the process of starting a new business, business opportunities in agriculture and food, Business idea presentation, and problems of new businesses.	1. Identify opportunities to create value by exploring the social, cultural, and economic landscape of the Agri-Food industries. 2. Identify needs and challenges that need to be met in Agri-food business and innovation.

Courses	Credit (Lect.-Lab-Self stud.)	Prerequisite	Course Description	Expected Learning Outcomes
311362 Design Thinking for Innovation	3(2-3-4)	None	Learn about new product/service design and development, customer-centric design, understanding the problems and needs of customers/stakeholders, identification of problems and opportunities for innovation development, learn and develope the thinking process in new product/service design, screening and evaluation of concept design and development of prototype products/services, and market testing guidelines.	1. Understand the process of product design and development New service Customer-centric design. 2. Develop several ideas and opportunities to create value, including better solutions to existing and new challenges.
311363 Market Research and Opportunity Analysis in Agri-Food Business	3(2-3-4)	None	Analysis of future trends in agriculture and food businesses. Study of the industry situation and value chain of agricultural-food businesses. Analysis of the business opportunities of agricultural-food innovation, market research design, data collection, market research tools and methods. Analyzing both quantitative and qualitative data to understand customer problems/needs and confirmations. Research presentation.	1. Analyzing both quantitative and qualitative data to understand the problem. Customer Requirement. 2. Present research results.
311364 Intellectual Property for Agri-Food Business	3(2-3-4)	None	Concepts and principles of intellectual property management, patent investigation and discovery, laws and guidelines on the protection of intellectual property. Request to exercise, assess eligibility, and valuation of intellectual property. Guidelines for the use of intellectual property works and generate returns on intellectual property.	Understand to the Concepts and principles of intellectual property management

	Courses	Credit (Lect.-Lab-Self stud.)	Prerequisite	Course Description	Expected Learning Outcomes
311365	Business Model and Strategy for Innovative Agri-Food Business	3(2-3-4)	None	The concept of business models and competitive strategies Business environment analysis Life cycle of agribusiness and food business Business model analysis Designing a business model for a new business Business model testing Determination of competitive strategies in the agricultural and food business.	Analysis the designing a business model for a new business Business model testing Determination of competitive strategies in the agricultural and food business.
311366	Value Proposition and Go to Market Strategies	3(2-3-4)	None	Marketing ideas for innovative businesses, products and services. Analysis of market opportunities and valuation of the market. Targeting customers. Designing the unique value of products and services. Entry strategies for new businesses, products and services. Channel planning and sales marketing evaluation.	Analysis of market opportunities and valuation of the market. Targeting customers. Designing the unique value of products and services.
311367	Digital Marketing and Branding	3(2-3-4)	None	Roles and trends of digital marketing. Types of digital markets. Channel planning and digital marketing strategy formulation. Guidelines for the development and implementation of digital marketing in key channels. Design and branding analysis and measurement of investment in digital marketing.	Understnd the roles and trends of digital marketing. Types of digital markets. Channel planning and digital marketing strategy formulation.
311368	Agri-Food Product and Service Design	3(2-3-4)	None	New product design and development process. Customer-centric design. Concept creation, new product, service, moderation and evaluation of concepts. Design trends Suitable packaging design. Prototype product design and development. Prototype test.	New product design and development process. Customer-centric design. Prototype test.
311369	Financing Innovative Business	3(2-3-4)	None	Principles of finance for new entrepreneurs. Cost structure Financial need analysis. Analysis of earning patterns funding source for new business. Principles and methods of funding and business value. Making decisions about the risks and benefits of an investment.	1. Understand the principles of finance for new entrepreneurs. Cost structure Financial need Analysis. 2. Analysis of earning patterns funding source for new business.

Courses	Credit (Lect.-Lab-Self stud.)	Prerequisite	Course Description	Expected Learning Outcomes
3113610 Agri-Food Operation Management	3(2-3-4)	None	Introduction to logistics and supply chain for new agricultural-food businesses, business operation planning, demand management, resource planning, procurement and inventory, transportation, warehousing, distribution of agricultural and food products, return logistics, logistics cost, and manufacturing.	1. Understand the introduction to logistics and supply chain for new agricultural-food businesses. 2. Understand the business operation planning.
3113611 Legal Aspects in Developing Agri-Food Business	3(2-3-4)	None	Introduction of law on legal entities and property, legal entity and business registration, stock structure and share proportions according to time (Vesting), Founder's Agreement, and Employee share offering (ESOP), introductory tax law, basic labor/employment law, and laws related to agribusiness and food business.	Understand the introduction of law on legal entities and property
3113612 Smart Project Management for Innovative Business	3(2-3-4)	None	Study on the modern principles and tools in project management, Lean project management, Agile Project Management, the use of online and offline tools to manage projects and tasks, planning and budgeting, financial analysis, design-control-performance evaluation, the operational efficiency analysis, and quality control.	Understand the study on the modern principles and tools in project management, Lean project management, Agile Project Management.
3113613 Leadership and Human Resource Management for Small & Innovative Business	3(2-3-4)	None	Leadership concepts; characteristics, skills, and roles of leaders. Self assessment of leadership, Roles of the founder and management, corporate culture, recruitment process, develop and retain human resources for small innovative businesses, and team development and team motivation are include.	Understand the Leadership concepts; characteristics, skills, and roles of leaders. Self assessment of leadership, Roles of the founder and management.
Project				

	Courses	Credit (Lect.-Lab-Self stud.)	Prerequisite	Course Description	Expected Learning Outcomes
311381	Agri-Food Innovation Project I	2(1-2-3)	None	Practice analysis of business opportunities, market and business trends, market study, technology selection, opportunities evaluation for business ideas, define customers, identify customer problems and confirm the lead, analyze business feasibility, and business idea presentation.	Practice analysis of business opportunities, market and business trends, market study, technology selection, opportunities evaluation for business ideas.
311382	Agri-Food Innovation Project II	2(1-2-3)	None	Practice designing and developing prototype products. Business model design. Business idea testing, innovation business model testing. Business model adjustments Market entry and customer acquisition strategies. Analysis of financial needs and approaches to financing business sources.	Practice analysis of business opportunities, market and business trends, market study, technology selection, opportunities evaluation for business ideas.
311383	Agri-Food Innovation Project III	2(1-2-3)	None	Practice on business model confirming, business planning, operation design, plan adjustments and funding or practice training in new business development in an innovative development organization or in a new technology business which is a multidisciplinary teamwork to work in a new start-up business. The student team will work on projects and give advice on important issues in the new entrepreneur's business.	Practice analysis of business opportunities, market and business trends, market study, technology selection, opportunities evaluation for business ideas.
Cooperative Education					

Courses	Credit (Lect.-Lab-Self stud.)	Prerequisite	Course Description	Expected Learning Outcomes
301490 Pre-Cooperative Education	1(1-0-3)	None	Principles and concepts of cooperative education, processes and procedures of cooperative education, regulations relating to cooperative education, fundamental knowledge and techniques of job application, guideline of resume creation and job interview, knowledge for career operations, quality management system in enterprises, such as ISO9000, technical presentations and project portfolio, technical report writing, personality development for working life, preparation for success.	1. Students can apply relevant agricultural technology knowledge, skills, techniques, and tools in a work context. 2. Students can identify and analyze issues, and suggest practical solutions in agriculture problems. 3. Students can design a system, component, or process to meet desired needs. 4. Students effectively communicate verbally and in writing. 5. Students can schedule a work plan and have the flexibility to respond to changing circumstances. 6. Students can establish good working relationships in a multi-disciplinary team. 7. Students understand and apply professional and ethical responsibility. 8. Students recognize the needs for, and engage in lifelong learning.
301491 Cooperative Education I	8	None	Students are required to perform academically or professionally as a full-time temporary employee for one semester in workplaces. Upon completion of the work already, students must submit a technical report and present the results to operational staff in the field for the evaluation. The evaluation will be conducted by project advisors in cooperative education, operational staff in the workplace, and technical report.	1. Students have a deep understanding of the concepts, principles, processes and procedures as well as relevant regulations of cooperative education. 2. Students have knowledge and basic skills to work in the enterprises. 3. Students have knowledge and skills in presentation and academic report writing. 4. Students have the basic skills in personality development to adapt themselves to work environment.

	Courses	Credit (Lect.-Lab-Self stud.)	Prerequisite	Course Description	Expected Learning Outcomes
311491	Customer Empathy and Real World Business Opportunities IV	3(0-9-0)	None	Understanding the nature, problems and need of real target customer in the agriculture supply chains especially the laboratories, cooperation and organization in the Institute of Agricultural Technology and other institutes in the laboratories, in the university. This module provides an opportunities for students to be part of the members of the selected organization and under the supervision of the mentor to do a project and business plan initiated from the real world probloblem. This module is a part of a 2-module series for student taking cooperation study or a 5-module series for student not taking cooperation study. Participating each module, student will select the organization to be a part under the supervision of program mentors.	1. Students understand target group targeting, understand problems, risks and opportunities of target customers. 2. Students develop the skills to understand target customers. 3. Students can create business opportunities out of target group problems and test them out.
311492	Customer Empathy and Real World Business Opportunities V	3(0-9-0)	None	Understanding the nature, problems and need of real target customer in the agriculture supply chains especially the laboratories, cooperation and organization in the Institute of Agricultural Technology and other institutes in the laboratories, in the university. This module provides an opportunities for students to be part of the members of the selected organization and under the supervision of the mentor to do a project and business plan initiated from the real world probloblem. This module is a part of a 2-module series for student taking cooperation study or a 5-module series for student not taking cooperation study. Participating each module, student will select the organization to be a part under the supervision of program mentors.	1. Students understand target group targeting, understand problems, risks and opportunities of target customers. 2. Students develop the skills to understand target customers. 3. Students can create business opportunities out of target group problems and test them out.
Subject for replace cooperative education					

	Courses	Credit (Lect.-Lab-Self stud.)	Prerequisite	Course Description	Expected Learning Outcomes
311391	Customer Empathy and Real World Business Opportunities I	3(0-9-0)	None	Understanding the nature, problems and need of real target customer in the agriculture supply chains especially the laboratories, cooperation and organization in the Institute of Agricultural Technology and other institutes in the laboratories, in the university. This module provides an opportunities for students to be part of the members of the selected organization and under the supervision of the mentor to do a project and business plan initiated from the real world probloblem. This module is a part of a 2-module series for student taking cooperation study or a 5-module series for student not taking cooperation study. Participating each module, student will select the organization to be a part under the supervision of program mentors.	1. Students understand target group targeting, understand problems, risks and opportunities of target customers. 2. Students develop the skills to understand target customers. 3. Students can create business opportunities out of target group problems and test them out.
311392	Customer Empathy and Real World Business Opportunities II	3(0-9-0)	None	Understanding the nature, problems and need of real target customer in the agriculture supply chains especially the laboratories, cooperation and organization in the Institute of Agricultural Technology and other institutes in the laboratories, in the university. This module provides an opportunities for students to be part of the members of the selected organization and under the supervision of the mentor to do a project and business plan initiated from the real world probloblem. This module is a part of a 2-module series for student taking cooperation study or a 5-module series for student not taking cooperation study. Participating each module, student will select the organization to be a part under the supervision of program mentors.	1. Students understand target group targeting, understand problems, risks and opportunities of target customers. 2. Students develop the skills to understand target customers. 3. Students can create business opportunities out of target group problems and test them out.

	Courses	Credit (Lect.-Lab-Self stud.)	Prerequisite	Course Description	Expected Learning Outcomes
311393	Customer Empathy and Real World Business Opportunities III	3(0-9-0)	None	Understanding the nature, problems and need of real target customer in the agriculture supply chains especially the laboratories, cooperation and organization in the Institute of Agricultural Technology and other institutes in the laboratories, in the university. This module provides an opportunities for students to be part of the members of the selected organization and under the supervision of the mentor to do a project and business plan initiated from the real world probloblem. This module is a part of a 2-module series for student taking cooperation study or a 5-module series for student not taking cooperation study. Participating each module, student will select the organization to be a part under the supervision of program mentors.	1. Students understand target group targeting, understand problems, risks and opportunities of target customers. 2. Students develop the skills to understand target customers. 3. Students can create business opportunities out of target group problems and test them out.
311491	Customer Empathy and Real World Business Opportunities IV	3(0-9-0)	None	Understanding the nature, problems and need of real target customer in the agriculture supply chains especially the laboratories, cooperation and organization in the Institute of Agricultural Technology and other institutes in the laboratories, in the university. This module provides an opportunities for students to be part of the members of the selected organization and under the supervision of the mentor to do a project and business plan initiated from the real world probloblem. This module is a part of a 2-module series for student taking cooperation study or a 5-module series for student not taking cooperation study. Participating each module, student will select the organization to be a part under the supervision of program mentors.	1. Students understand target group targeting, understand problems, risks and opportunities of target customers. 2. Students develop the skills to understand target customers. 3. Students can create business opportunities out of target group problems and test them out.

Courses	Credit (Lect.-Lab-Self stud.)	Prerequisite	Course Description	Expected Learning Outcomes
311492 Customer Empathy and Real World Business Opportunities V	3(0-9-0)	None	Understanding the nature, problems and need of real target customer in the agriculture supply chains especially the laboratories, cooperation and organization in the Institute of Agricultural Technology and other institutes in the laboratories, in the university. This module provides an opportunities for students to be part of the members of the selected organization and under the supervision of the mentor to do a project and business plan initiated from the real world probloblem. This module is a part of a 2-module series for student taking cooperation study or a 5-module series for student not taking cooperation study. Participating each module, student will select the organization to be a part under the supervision of program mentors.	1. Students understand target group targeting, understand problems, risks and opportunities of target customers. 2. Students develop the skills to understand target customers. 3. Students can create business opportunities out of target group problems and test them out.