

Agricultural Engineering Science

Office

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Doctoral Program of Agricultural Engineerign Science

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Faculty Members:

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Vision

The vission of Doctoral Program of Agricultural Engineering Science is to become one of the leading doctoral study programs in Indonesia with international standards based on engineering principles in innovation and dissemination of science and technology to support education and research on environmentally friendly and modern agricultural engineering.

The definition of national excellence in this vision is the highest quality of doctoral study programs among similar study programs in Indonesia. International standard means that the quality of the study program implementation and the outputs in terms of doctoral students as well as their scientific work are equivalent and or oriented to international standards.

The academic community of The Doctoral Program of Agricultural Engineering Science always relies on applying engineering knowledge to solve problems and develop their knowledge and innovation. In addition, innovations and public dissemination are always directed to support the development of a robust, efficient, environmentally friendly, and sustainable agricultural industry.

Mission

To offer doctoral program in Agricultural Engineering Science that prepare human resources to enhance the quality of agricultural engineering science and agricultural productivity based on

research activities, science and technology innovation, community empowerment, and enriched by networking with various competent institutions both nationally and internationally.

Learning Outcomes

1. Mastering knowledge in terms of:
 - a. engineering science philosophy in the field of agricultural and biosystem engineering for the development of agricultural and biosystem engineering sciences;
 - b. substantial and state-of-the-art theory in the field of agricultural engineering and biosystems, including agricultural machinery, post-harvest engineering, food engineering; renewable energy engineering, agro-industry informatics and management systems, soil-water-environment engineering, or biological systems engineering, through the systematic acquisition of knowledge, to solve engineering problems within the scope of agriculture, food, energy, and the environment;
 - c. theoretical concepts and technological applications in agricultural engineering and biosystems to produce novel and advanced knowledge, emerging technology, or concepts that are useful to solve the problems related to agricultural engineering that have been or are being implemented.
2. Have the ability or skill with the aim:
 - a. to carry out expansion of agricultural and biosystem engineering science through interdisciplinary, multi or transdisciplinary research;
 - b. to propose and evaluate new solutions to solve engineering problems within the scope of agriculture, food, energy, and the environment, through inter, multi or transdisciplinary approaches and the application of deductive-inductive reasoning, taking into account economics, public health, and safety, cultural, social and environmental factors;
 - c. to conceptualize, design, and conduct scientific studies or research to produce new and advanced knowledge, emerging technology, or concepts that are useful to solve the problems related to agricultural engineering that have been or are being implemented; and
 - d. to identify the current issues and the development of science in the field of agricultural engineering and biosystems into the process of developing science and technology or formulating policies in agriculture, food, energy, and the environment.

Course Structure

A. Regular Program of Doctoral Degree

Code	Course	Credit	Semester
PPS704	Philosophy of Science	2(2-0)	Odd
TEP1701	Agricultural engineering science	3(3-0)	Odd
TEP1791	Writing Qualification Examination	2	Odd/Even
TEP1792	Oral Qualification Examination	2	Odd/Even
TEP1793	Colloquium	1	Odd/Even
TEP1794	Research proposal	2	Odd/Even
PPS791	Seminar	1	Odd/Even
PPS792	National scientific publication	2	Odd/Even
PPS793	International scientific publication	3	Odd/Even
TEP1798	Close defense	2	Odd/Even
TEP1799	Research and dissertation	12	Odd/Even
	Elective course	12	Odd/Even
	Total	44	
	List of elective courses:		
TEP1601	Digital Data Processing Techniques	3(3-0)	Odd/Even
TEP1602	Numerical Analysis for Engineering	3(3-0)	Odd/Even
TEP1611	Agricultural Equipment and Machinery Control Engineering	3(3-0)	Odd/Even
TEP1612	Mechanical Engineering and Automation for Precision Agriculture	3(3-0)	Odd/Even
TEP1613	Agricultural and Food Machinery Design	3(2-1)	Odd/Even
TEP1621	Food Process Engineering	3(3-0)	Odd/Even
TEP1622	Biological Process Engineering	3(3-0)	Odd/Even
TEP1623	Agricultural Product Distribution Engineering	3(3-0)	Odd/Even
TEP1624	Greenhouse Environmental Control Engineering	3(3-0)	Odd/Even
TEP1631	Methods Optimization in Engineering	3(3-0)	Odd/Even
TEP1641	Solar Energy Conversion Engineering	3(3-0)	Odd/Even
TEP1706	Special topics	3(3-0)	Odd/Even
TEP1711	Thera mechanics	3(3-0)	Odd/Even
TEP1702	Agricultural Mechanization Strategies	3(3-0)	Odd/Even
TEP1741	Energy Analysis for Agricultural Engineering	3(3-0)	Odd/Even

B. By-Researach Program of Doctoral Degree

Code	Course	Credit	Semester
PPS704	Philosophy of Science	2(2-0)	Odd
TEP1701	Agricultural engineering science	3(3-0)	Odd
TEP1791	Writing Qualification Examination	2	Odd/Even
TEP1792	Oral Qualification Examination	2	Odd/Even
TEP1793	Colloquium	1	Odd/Even
TEP1794	Research proposal	2	Odd/Even
PPS791	Seminar	1	Odd/Even
PPS792	National scientific publication	2	Odd/Even
PPS794	International scientific publication 1	3	Odd/Even
PPS795	International scientific publication 2	3	Odd/Even
TEP1798	Close defense	2	Odd/Even
TEP1799	Research and dissertation	12	Odd/Even
	Special topics or elective course	9	Odd/Even
	Total	44	

CURRICULUM

Compulsory course of Graduate school	: 5 Credits
Compulsory course of Study program	: 3 Credits
Research and dissertation	: 28 Credits
Elective compulsory course	: 9 Credits
Available elective compulsory course	: 24 Credits
Total of Compulsory Course	: 45 Credits

Code	Name	Credit	Semester
List of compulsory courses of Graduate school (5 Credits)			
PPS500	English	3(3-0)	Odd/Even
PPS702	Philosophy of Science	2(2-0)	Odd/Even
Compulsory course of Study program (3 Credits)			
TEP1701	Agricultural engineering science	3(3-0)	I
Research and dissertation (28 Credits)			
TEP1791	Writing Qualification Examination	2(0-2)	Odd/Even
TEP1792	Oral Qualification Examination	2(0-2)	Odd/Even
TEP1793	Colloquium	1(0-1)	Odd/Even
TEP1794	Research proposal	2(0-2)	Odd/Even
TEP1706	Special topics	3(3-0)	Odd/Even
PPS790	Seminar	1(0-1)	Odd/Even
PPS792	National scientific publication	2(0-2)	Odd/Even
PPS793	International scientific publication	3(0-3)	Odd/Even
TEP1799	Research and dissertation	12(0-12)	Odd/Even
List of elective compulsory courses (9 Credits)			
	Elective course 1	3	Odd/Even
	Elective course 2	3	Odd/Even
	Elective course 3	3	Odd/Even
List of available elective compulsory course (33 sks)			
TEP1601	Digital Data Processing Techniques	3(3-0)	Odd/Even
TEP1602	Numerical Analysis for Engineering	3(3-0)	Odd/Even
TEP1613	Agricultural Equipment and Machinery Control Engineering	3(1-2)	Odd/Even
TEP1622	Mechanical Engineering and Automation for Precision Agriculture	3(3-0)	Odd/Even
TEP1623	Agricultural and Food Machinery Design	3(3-0)	Odd/Even
TEP1624	Food Process Engineering	3(3-0)	Odd/Even
TEP1631	Biological Process Engineering	3(3-0)	Odd/Even
TEP1731	Agricultural Product Distribution Engineering	3(3-0)	Odd/Even
TEP1611	Greenhouse Environmental Control Engineering	3(3-0)	Odd/Even
TEP1711	Methods Optimization in Engineering	3(3-0)	Odd/Even
TEP1741	Solar Energy Conversion Engineering	3(3-0)	Odd/Even