BACHELOR OF SCIENCE IN AGRICULTURAL AND BIOSYSTEMS ENGINEERING PROGRAM EDUCATIONAL OBJECTIVES AND PROGRAM OUTCOMES

Program Educational Objectives

After three to five years, the graduates of the BSABE Program shall:

1. Provide strategic leadership in the development, implementation, and evaluation of ABE projects and programs.
2. Hold leadership roles in private and public sector organizations in the local and national level.
3. Establish and manage ABE-related business ventures that contribute to the economic development of the country.
4. Pursue higher education and advanced research in agricultural and biosystems engineering and related field.
5. Contribute to initiatives that foster community development, environmental stewardship, and responsible management of natural resources.

Program Outcomes

By the time of graduation, the students of the program shall have the ability to:

a) apply knowledge of mathematics and science to solve complex AB engineering problems;
b) design and conduct experiments, as well as to analyze and interpret data;
c) design a system, component, or process to meet desired needs within realistic constraints, in accordance with standards;
d) function in multidisciplinary and multi-cultural teams;
e) identify, formulate, and solve complex engineering problems;
f) understand professional and ethical responsibility;
g) communicate effectively complex AB engineering activities with the engineering community and with society at large;
h) understand the impact of AB engineering solutions in a global, economic, environmental, and societal context;
i) recognize the need for, and engage in life-long learning;
j) know contemporary issues;
k) use techniques, skills, and modern engineering tools necessary for AB engineering practice;
l) know and understand engineering and management principles as a member and leader of a team, and to manage projects in a multidisciplinary environment; and
m) understand at least one specialized field of ABE practice

UNIVERSITY OF RIZAL SYSTEM MISSION

The University of Rizal System is committed to nurture and produce upright and competent graduates and empowered community through relevant and sustainable higher professional and technical instruction, research, extension and production services.

Coherence of BSABE Program Educational Objectives to the University Mission

Program Educational Objectives (based on CMO no. 94, s. 2017)		MISSION
After three to five years, the graduates of the BSABE Program shall:		
1	Provide strategic leadership in the development, implementation, and evaluation of ABE projects and programs.	✓
2	Hold leadership roles in private and public sector organizations in the local and national level.	✓
3	Establish and manage ABE-related business ventures that contribute to the economic development of the country.	✓
4	Pursue higher education and advanced research in agricultural and biosystems engineering and related field.	✓
5	Contribute to initiatives that foster community development, environmental stewardship, and responsible management of natural resources.	✓

Consistency of Program Outcomes (PO) to the BSABE Program Educational Objectives (PEO)

Program Outcomes (based on CMO no. 94, s. 2017)		Program Educational Objectives				
By the time of graduation, the students of the program shall have the ability to:		1	2	3	4	5
a)	apply knowledge of mathematics and science to solve complex AB engineering problems;	✓	✓	✓	✓	✓
b)	design and conduct experiments, as well as to analyze and interpret data;	✓	✓	✓	✓	✓
c)	design a system, component, or process to meet desired needs within realistic constraints, in accordance with standards;	✓	✓	✓	✓	✓
d)	function in multidisciplinary and multi-cultural teams;	✓	✓	✓	✓	✓
e)	identify, formulate, and solve complex engineering problems;	✓	✓	✓	✓	✓
f)	understand professional and ethical responsibility;	✓	✓	✓	✓	✓
g)	communicate effectively complex AB engineering activities with the engineering community and with society at large;	✓	✓	✓	✓	✓
h)	understand the impact of AB engineering solutions in a global, economic, *environmental, and societal context;*	✓	✓	✓	✓	✓
i)	recognize the need for, and engage in life-long learning;	✓	✓	✓	✓	✓
j)	know contemporary issues;	✓	✓	✓	✓	✓
k)	use techniques, skills, and modern engineering tools necessary for AB engineering practice;	✓	✓	✓	✓	✓
l)	know and understand engineering and management principles as a member and leader of a team, and to manage projects in a multidisciplinary environment; and	✓	✓	✓	✓	✓
m)	understand at least one specialized field of ABE practice.	✓	✓	✓	✓	✓

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BACHELOR OF SCIENCE IN AGRICULTURAL AND BIOSYSTEMS ENGINEERING (BSABE) – OUTCOME-BASED EDUCATION (OBE) FRAMEWORK

Outcome-Based Education (OBE) is an educational approach that emphasizes achieving specific learning outcomes. It focuses on what students are expected to learn and demonstrate by the end of their educational experience. It is a new paradigm in engineering education that is being pursued in the United States and other countries, including the Philippines. It is a student-centered learning philosophy that focuses on empirically measuring student performance called “outcomes” (Felder & Brent, 2003).

The OBE framework as shown in figure 1 of implementation of the BSBE program is guided by the existing laws and issuances (e.g. CMO 37, 46, 94, RA 7722). Its Program Educational Objectives and Program outcomes were based on the Mission, Vision, and Quality of the University, College and Department Objectives, and CMO issuances. The Program Educational Objectives and Program Outcomes shall be regularly revisited to suit to the industry and stakeholder needs. The program will be regularly subjected to assessment and evaluation to conform with the international quality standards in order to provide its clientele the desired environment for quality education. Quality improvement shall also be pursued by continuously updating the requirements essential in the delivery of quality education focusing on instruction, research, extension and production**.** The outcomes are first defined and then the design of the curriculum including the teaching and learning activities and assessment tasks follows. In defining the outcomes, a hierarchy was followed, with the university vision, mission at the top. The Expected Graduate Attributes (EGA) which are the characteristics or qualities of students of the university upon graduation were identified based on the university vision-mission statement.

To achieve students’ attributes, the Engineering programs in the University of Rizal System defined a set of program or Student Outcomes SO’s which address specific EGAs. Related to the SO’s are the Program Educational Objectives (PEO’s) which are broad statements that describe what graduates are expected to attain after graduation.

Assessment of PEO’s shall be done after a few years of graduation while the achievement of SO’s shall be done immediately after graduation. The Bachelor’s Degree in Engineering which specializes in the different programs follows a curriculum with a set of courses that a student must complete or pass in order to earn the degree. In the OBE, the course learning outcomes of each course is at the lower level in the hierarchy of outcomes. To assure the achievement of EGAs and SO’s, the course learning outcomes must be aligned with specific EGA’s and SO’s. Since outcomes cascade from top to bottom, the curriculum design also follows the same direction from program to course level. Delivery of instruction and assessment to evaluation, on the other hand, is carried out from bottom to top. The course is the basic element that comprises a program. Thus, assessment of the achievement of outcomes in the course level must be carried out first to evaluate how effective are the teaching-learning activities and assessment tasks in achieving the learning outcomes. Program assessment will then follow to measure the achievement of EGA’s and SO’s.

To meet the Continuous Quality Improvement (CQI) process of OBE, changes or adjustments in the curriculum at the program and/or course level shall be implemented.

VISION

The leading University in human resource development, knowledge and technology generation and environmental stewardship

MISSION

The University of Rizal System is committed to nurture and produce upright and competent graduates and empowered community through relevant and sustainable higher professional and technical instruction, research, extension and production services.

QUALITY POLICY

The University of Rizal System commits to deliver excellent products and services to ensure total stakeholders' satisfaction in instruction, research, extension, production, and dynamic administrative support and to continuously improve its Quality Management System processes to satisfy all applicable requirements.

COLLEGE GOALS

Producing globally competitive and responsive professionals with the necessary values, knowledge, and skills sets in instruction, research, extension, and production exemplifying social, multi-cultural, and environmental stewardship.

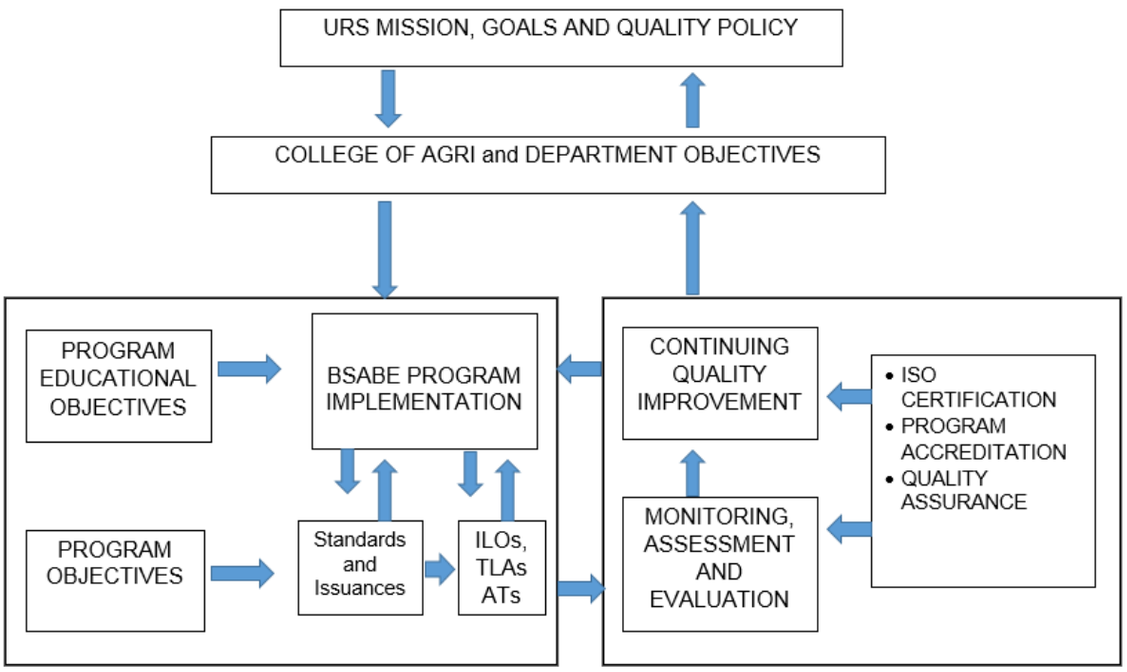

FIGURE 1. URS BSABE-OBE FRAMEWORK