

# MS AGRICULTURE, SPECIALIZATION IN BIORESOURCE AND AGRICULTURAL SYSTEMS

## Program Learning Objectives

1. Demonstrate expertise in their respective discipline.
2. Develop, test or select the appropriate technology in their respective discipline.
3. Demonstrate effective communication skills.
4. Formulate decisions utilizing professional ethics.
5. Value the diversity of people and ideas.
6. Investigate problems using critical thinking and derive appropriate solutions.

### Required Courses

AG 581	Graduate Seminar	2
BRAE 599	Thesis in BioResource and Agricultural Engineering	9
ESCI 501	Research Planning	4
STAT 511	Statistical Methods	4
STAT 513	Applied Experimental Design and Regression Models	4
Approved Elective Options <sup>1</sup>		22

Students may be required to take undergraduate level prerequisites for selected electives. The final elective approval is at the discretion of the students' graduate committee

#### General

BRAE 418	Agricultural Systems Management I
BRAE 419	Agricultural Systems Management II

#### Agricultural and Food Processing Waste Management

BRAE 435	Drainage
BRAE 440	Agricultural Irrigation Systems
BRAE 532	Water Wells and Pumps
NR/CRP 404	Environmental Law
NR/CRP 408	Water Resource Law and Policy
NR 416	Environmental Impact Analysis and Management
NR 420	Watershed Assessment and Protection
NR 465	Senior Project - Ecosystem Management

#### Renewable Energy

BRAE 448	Bioconversion
EE 420	Sustainable Electric Energy Conversion
EE/PHYS 422	Polymer Electronics Laboratory
EE 520	Advanced Solar-Photovoltaic Systems Design

ENVE 542	Sustainable Environmental Engineering
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#### California Production Agriculture and Food Systems

BRAE 432	Agricultural Buildings
IME 430	Quality Engineering
ITP 409	Packaging Machinery and Processes
PLSC 421	Postharvest Technology of Horticultural Crops

#### Precision Agriculture

BRAE 447	Advanced Surveying with GIS Applications
BRAE 481	Advanced Agricultural Mechanics
NR 418	Applied GIS
PLSC 406	Advanced Weed Management
PLSC 410	Crop Physiology
PLSC 445	Cropping Systems
SS 431	Digital Soil Mapping

#### Automation and Mechanization

BRAE 425	Computer Controls for Agriculture
IME 416	Automation of Industrial Systems

Any 400 and 500 level courses approved by the student's graduate committee <sup>1</sup>

**Total units** **45**

<sup>1</sup> At least 60% of all units required by the committee as reflected on the formal study plan must be at the 500 level.