

# **ONLINE NON-THESIS STUDENT MANUAL**

## **Master's of Science in Agricultural and Biological Engineering**

**Agricultural and Biological Engineering Department**

**Degrees through the Herbert Wertheim College of Engineering and the College of  
Agricultural and Life Sciences**

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## Contact Information

Throughout this manual, references will be made to several people by their position names. The following is current contact information for those positions:

Title	Name	E-mail	Office
Department Chair	Kati Migliaccio	<a href="mailto:klwhite@ufl.edu">klwhite@ufl.edu</a>	120
Graduate Coordinator	Greg Kiker	<a href="mailto:gkiker@ufl.edu">gkiker@ufl.edu</a>	291
Staff Academic Advisor	Daphne Flournoy	<a href="mailto:dflournoy@ufl.edu">dflournoy@ufl.edu</a>	116
Facilities Coordinator	Scott Karwan	<a href="mailto:skarwan@ufl.edu">skarwan@ufl.edu</a>	168
Education Coordinator	Shannon Noble	<a href="mailto:shannon.noble@ufl.edu">shannon.noble@ufl.edu</a>	121
Administrative Services Coordinator	Max Williams	<a href="mailto:mandomax@ufl.edu">mandomax@ufl.edu</a>	117
Human Resources Support	Haley Tsai	<a href="mailto:haley.tsai@ufl.edu">haley.tsai@ufl.edu</a>	111
Administrative Support	Jessica Abbate	<a href="mailto:abbatej@ufl.edu">abbatej@ufl.edu</a>	100
Marketing & Communications	McKenzie Wynn	<a href="mailto:mwynn3@ufl.edu">mwynn3@ufl.edu</a>	120

## Introduction

This Graduate Student Manual is for the use of graduate students, **who are entering the online, non-thesis Master's of Science in Agricultural and Biological Engineering** and their faculty in the Agricultural and Biological Engineering Department of the University of Florida. This document contains policies, regulations, and suggestions applicable to making students' graduate programs mutually beneficial to the students and to the department.

The Agricultural and Biological Engineering Department through the College of Agricultural and Life Sciences (CALs) and the Herbert Wertheim College of Engineering (HWCOE) offers a non-thesis MS degree through distance education. The online non-thesis MS degree has the same requirements as our current on-campus non-thesis degree. Our department offers graduate coursework in engineering and technology related to agricultural operations management, agricultural production, biological engineering, information systems, land and water resource engineering, and food systems engineering.

Students obtaining a non-thesis MS will acquire additional knowledge and skills in the discipline with the ability to select from a list of offerings based on their needs. Specific strengths for the CALs nonthesis MS are in food production systems, operations management, and SmartAg technologies. Strengths for the HWCOE non-thesis MS are in biological modeling, design and instrumentation, SmartAg engineering, and bioprocessing.

*The Graduate Catalog* (The University Record, University of Florida, Graduate Catalog, <http://gradcatalog.ufl.edu/index.php?catoid=4>) contains additional applicable information. This department manual is intended to supplement rather than duplicate the *Graduate Catalog*. The student should rely on the *Graduate Catalog* as a final authority except where a more stringent requirement may be imposed by the college or department. Students may graduate under the requirements of any one catalog in effect during their enrollment. The requirements stated in the catalog constitute a contract between the university and the student.

An exception or exemption from the policies stated in this manual may, in certain cases, be appropriate. Requests for exception or exemption will be reviewed by the graduate committee when submitted in writing, after approval has been granted by the Supervisory Committee.

## Admissions Policy

The Master's of Science degrees are intended for students who have completed an undergraduate degree and desire to further their technical and analytical skills. Admission to a MS degree program requires a 3.00 upper division grade point average (GPA) (based on a 4.00 system).

A student may not be required to meet every requirement; however, exceptions will be made only after a review by the departmental graduate committee. The required articulation work for any graduate degree must be completed with a GPA of at least 3.00.

The entire application packet of a student is considered when admission decisions are made. The deadlines for applying for admission to the ABE graduate program are December 5th for

applications for the Fall semester and July 15th for applications for the Spring semester.

Please note that admission into the MS of HWCOE program, generally requires a B.S. degree in Agricultural and Biological Engineering, or related engineering specialty, from an undergraduate program accredited by ABET (Accreditation Board for Engineering and Technology). If a student desires a master's degree with a major in Agricultural and Biological Engineering but does not have an undergraduate degree that has an ABET-equivalency, then articulation course work should be completed prior to or as early as possible in the student's graduate program. The current ABET requirements are given in [Appendix A](#) of this manual. As part of the ABET design requirement, the student will be required to take a minimum of 12 credits of Agricultural and Biological Engineering (ABE) design courses.

Admission into the Master's of Science program in the College of Agricultural and Life Sciences requires a B.S. degree in Agricultural Operations Management or an equivalent undergraduate program. Students who do not have an undergraduate Agricultural Operations Management degree or equivalent and desire a Master's of Science degree in the College of Agricultural and Life Sciences must complete equivalent requirements through articulation ([see Appendix B](#)).

## Application Requirements

A completed online application to the University of Florida will include:

- [Letters of Recommendation](#) for the application should be requested from faculty or employers who are familiar with the applicant's academics or research and can answer questions about their qualifications by **following the on-line submission process for letters of recommendation**. Letters will need to be submitted electronically through the admissions application. Applicants must request these recommendations prior to submitting your application.
- [Transcripts](#) for the [application process](#) can be unofficial and uploaded directly to their [UF Admission](#) application check status page. **If at any point during the application process UF request official transcripts**, applicants should have all previously attended schools send official transcripts to the University of Florida Admissions Office, either by mail or electronically through FASTER, Parchment, National Student Clearing House, ScribbleSoft, e-Scrip Safe, Credential Solutions, SCOIR or Transcripts Plus.

Mailing address for sending officially sealed Transcripts:  
University of Florida-Office of Admissions  
201 Criser Hall PO BOX 14000  
Gainesville, FL, 32611-4000

**\*Once admitted, student will be required to send official transcript to Admissions. \***

- [Resume or Curriculum Vitae](#) can be uploaded directly into the online application.
- [Statement of Purpose/ Letter of Intent](#) will provide applicant an opportunity to provide a

compelling narrative of why they wish to join the program. In this statement the applicant describes their background, proposes an area of study and identifies how their professional interest align with the ABE Mission. Applicants should clearly articulate how the experience in an ABE graduate program would assist with future personal and/or professional success. This content should summarize professional goals, career objectives, and motivation for graduate work in Agricultural and Biological Engineering. (This part of the application is also automated in the online application.)

- The [ABE Grad Applicant Info Form](#) can be submitted by uploading directly to the application [check status page](#). Note that all questions must be answered within the space provided. If a student has trouble submitting this form to their UF Admissions application, they can contact [dflournoy@ufl.edu](mailto:dflournoy@ufl.edu)
- International applicants may be required to provide TOEFL or IELTS scores as well. (for TOEFL use UF Code 5812 and Department Code 99). More information can be found at <https://admissions.ufl.edu/apply/graduate/international>. A minimum score of 80 on the internet-based version, 213 on the computer-based or 550 on the paper-based TOEFL is required. The minimum score for the IELTS is 6.0. Conditional admission may be offered by the departmental graduate committee to students who do not satisfy the admission criteria including the cases of a deficiency in the TOEFL, IELTS or GPA requirements

### **Academic Advisor and Supervisory Committee**

All nonthesis online MS students will be admitted only after a faculty advisor has been identified to serve as Major Professor and Chair of the student's Supervisory Committee. Prospective students are encouraged to contact ABE faculty in their area of interest. Student may also want to contact the ABE Graduate Coordinator for assistance. In addition to the advisor, the student is required to have a Supervisory Committee consisting of approved graduate faculty members. Purposes of the student's Supervisory Committee are: 1) to guide, inform, and counsel the student; 2) to discuss and approve a plan of study; and 3) to review progress and provide advice during their Master's project.

### **Plan of Study**

Each plan of study is unique to the individual student and should meet the student's goals and career objectives as well as being cohesive and concentrated in an area of study. Graduate students and their Supervisory Committees are expected to complete a plan of study by the designated time (see [Appendices E and F](#)). A plan of study must be submitted to the graduate committee no later than the end of the 2<sup>nd</sup> semester of study for Master's. Each student's plan of study must satisfy all requirements of the Graduate School and the Department as stated in the *Graduate Catalog* and this manual. **A registration hold will be placed on all students not completing their plan of study as required.**

\*Students must be registered in at least 3 hours of graduate level coursework related to the M.S. degree during the semester of graduation. \*

Graduate credit is awarded for courses numbered 5000 and above. The work in the major field must be in courses numbered 5000 or above. For work outside the major, courses numbered 3000 or above, not to exceed 6 credits, maybe taken provided they are part of an approved plan of study. None of the courses below the 5000 level with an ABE, AOM or PKG prefix may be used toward meeting the minimum requirements.

Templates are available to assist the student in developing a plan of study. The required Supervisory Committee and plan of study templates can be accessed through are available on the department's website pages <https://abe.ufl.edu/graduate/resources/>. After a plan of study has been approved by the student's Supervisory Committee, a copy must be submitted with the student's advisor's signature to the Staff Academic Advisor for submission to the departmental graduate committee for final approval.

Since a Supervisory Committee and plan of study are formulated early in the program, it is likely that a student may wish to change a plan of study, committee, or even an advisor. There should be no hesitancy to make changes that are recognized to be educationally sound. If it becomes necessary to amend an approved plan of study, changes mustbe approved by the Supervisory Committee chair and the departmental graduate committee representative.

### ***Transfer of Credit***

#### *Courses Taken as a Graduate Student at another institution:*

Courses for graduate credit (5000 and above) earned with a grade of A, A-, B+, or B may be transferred from an institution approved for this purpose by the Graduate School. Acceptance of transfer credit requires official transcripts to be sent to the Office of Admissions, approval by the student's Supervisory Committee Chair or the Graduate Coordinator, the college dean, and the Graduate School. Transfer of credit may be considered from course work taken after completion of the undergraduate degree. Transfer coursework must be taken within the 7 years immediately preceding the date that the degrees is to be awarded. Courses with "P" or "S" grading cannot be transferred. Transfer hours cannot be split (e.g. 9 hours taken, 8 transferred). A maximum of 9 credit hours may be transferred under the above guidelines as part of a master's program.

Note: As in all cases, how a general policy line affects a specific student will be unique, so transfer of credit is never automatic or guaranteed for any graduate student. Requests for transfer credit from a non-ABE MS program (i.e. 'Out of Major') will require a justification statement from the student's faculty advisor.

#### *Courses Taken as an Undergraduate student at UF:*

University of Florida undergraduates who subsequently enroll in Graduate School may transfer a maximum of 15 credits of 5000 or 6000 level courses, earned with a grade of A, A-, B+, or B, taken as an undergraduate, provided (1) the courses to be transferred are in excess of the undergraduate degree requirements, and (2) the student had a 3.00 GPA at the time the courses were taken.

### *Courses Taken as a Graduate student at UF:*

The student must submit the [ABE Transfer Credit Request Form](#) to the Staff Academic Advisor to begin the process. *An official, final transcript of the student's master's program must be onfile at the UF admissions office, or the transfer of credit will not be processed.*

All courses to be transferred must be graduate-level, letter-graded with a grade of B or better and must be demonstrated to relate directly to the degree being sought. *Note that transfer of credit (or TOC) requests will take several months to process and may take up to 8 months for credit transfers from accredited international institutions.*

### **Requirements for Master's of Science Degree**

For a non-thesis degree, the minimum requirement is 30 hours of course work.

#### Master's of Science with the Herbert Wertheim College of Engineering (HWCOE)

Each plan of study in Engineering must include a minimum of 15 hours of ABE, AOM or PKG departmental coursework. The plan also must include a minimum of 3 credits of mathematics at the 5000 level or higher. A list of approved math courses is provided in [Appendix C](#).

#### Master's of Science with the College of Agricultural and Life Sciences

Each plan of study in CALS must include a minimum of 9 credit hours of quantitative courses including mathematics at the 5000 level or above; engineering, modeling, simulation, and optimization methods; and statistics and/or probability. These quantitative courses must include 3 credits selected from the approved list of math or data analytics courses in Appendix C. A student's plan of study in CALS must also include a minimum of 15 hours of ABE, AOM or PKG departmental coursework.

***Students wishing to use credit from a graduate math course not listed in the ABE Graduate Manual or from another institution must provide a copy of the syllabus for approval by the ABE Graduate Committee.***

All students pursuing non-thesis degrees are required to present a written or oral final exam presentation to their Supervisory Committee in the final semester of their graduate program. The topic should be related to the student's area of interest.

### **Grade Point Requirements for Graduation**

The appropriate grade point requirements for graduation are:

1. A minimum 3.00 GPA in all graduate level courses at the University of Florida.
2. A minimum 3.00 GPA in all courses that comprise the major (ABE, AOM, PKG)

### **Registration**

Registration for coursework each term is the responsibility of the student. Course registration should conform to the student's plan of study. Course selection for each term should be made in close consultation with the student's advisor.

### **Dropping Courses**

After the normal drop/add period, each request for a schedule change must be approved by the chair of the student's Supervisory Committee. International students may need clearance from the UF International Center to process a late drop/add. Instructor permission may be required to add a course after the drop/add period.

After Drop/Add, students must obtain approval from their faculty advisor for all schedule changes. If a student obtains approval to change their schedule

- The change is processed as individual actions, a drop and/or an add.
- The student will be fee liable for any course dropped and any course added to his/her schedule.

If there is no university or departmental error and the student believes the fees for the dropped course should be waived due to an extenuating circumstance, the student must submit a petition to the University Petitions Committee. The petition must be signed by the ABE Graduate Coordinator.

### **Tuition**

Florida residents in this online non-thesis MS would be enrolled with the standard Florida resident tuition rate. Non-residents of Florida would pay a different out of state rate. Rates are subject to change but as of Fall 2021:

- Cost per credit hour (tuition only, not including fees): \$530 Non-resident rate (or out-of-state rate); tuition for Florida resident (or in-state students) is capped at in-state rate of \$448.73 (as of 6/16/21)
- Total Cost: \$16,972.50 (Non-resident; out-of-state) and \$14,534.40 (Florida resident; in-state)

### **Normal Progress**

Students in pursuit of the Master's of Science are expected to maintain a GPA of 3.00. Students who fall below these standards will be considered to be on academic probation. Students who remain below this standard for two consecutive terms are subject to termination.

### ***Research Data, Software, Designs and Manuscripts***

All research data, patents, designs, computer software, creations, etc. obtained by graduate students through the use of university assets are the property of the State of Florida. All such research data and other requested materials must be submitted to the advisor before the student

leaves the University of Florida.

### **Computer Access**

All student offices, classrooms, and laboratories have internet access via Gatorlink credentials. The departmental computer teaching lab is available to all students at times when classes are not scheduled for the lab. Students working on class assignments in this lab are given priority over students working on research assignments. All use of departmental computers must comply with University of Florida Information Technology Acceptable Use Policy (<http://it.ufl.edu/policies/aupolicy.html> )

## APPENDIX A

### ***ABET - Equivalency Requirements for Agricultural and Biological Engineering***

*Note: Required articulation courses do not count toward the credit hours of coursework required for a graduate program of study. Students may have to pay for articulation courses out-of-pocket as they may not be included in assistantship funding.*

#### Semester Credits

##### One Year of Mathematics & Basic Sciences

Analytic Geometry and Calculus  
Elementary Differential Equations  
General Physics with Calculus  
Physics Laboratory  
General Chemistry and Qualitative Analysis  
General Chemistry Laboratory  
Biological Science Requirement

##### One Year of Engineering Sciences and Analyses

Numerical Methods & Computer Programming for Engineer  
Statics  
Computer Assisted Drafting  
Dynamics  
Engineering Materials  
Mechanics of Materials  
Fluid Mechanics or Hydrodynamics  
Thermodynamics  
Other Engineering Sciences and Electives

##### ½ Year of Engineering Design

Agricultural Engineering Design Courses  
Engineering Design Electives

## APPENDIX B

### Equivalency Requirements for Agricultural Operations Management

*Note: Required articulation courses do not count toward the credit hours of coursework required for a graduate program of study. Students may have to pay for articulation courses out-of-pocket as they may not be included in assistantship funding.*

Biological Sciences  
CHM2045 and Lab  
Applied Physics  
Survey of Calculus  
Basic Economics Course  
Management/Production Management Courses  
Agricultural Operations Management Courses  
Technical Agriculture Courses

### *Equivalency Requirements for Applied Science Degree*

Biological Sciences  
Analytical Geometry and Calculus I and II  
Differential Equations  
General Physics I and II (including labs)  
General Chemistry I and II (including labs)

In rare cases a student's faculty advisor may feel that an articulation course is not required for the student's specific area of study. The faculty member may petition the ABE Graduate Committee to waive that specific requirement using clear justification. The petition form is available for faculty on the ABE website.

**APPENDIX C**  
**Course Offerings**

<b>Course name</b>	<b>Credit</b>
ABE5152 Electro-Hydraulic Circuits and Control	3
ABE5442 Advanced Process Engineering	3
ABE5643C Biological Systems Modeling	3
ABE5707C Agricultural Waste Management	3
ABE5815C Food and Bioprocess Engineering Design	3
ABE6005 Applied Control for Automation and Robotics	3
ABE6031 Instrumentation in Agricultural Engineering Research	3
ABE6252 Advanced Soil and Water Management Engineering	3
ABE6254 Simulation of Agricultural Watershed Systems	3
ABE6645C Computer Simulation of Crop Growth and Management Responses	3
ABE6654C Advanced Biobased Products	3
ABE6649C Advanced Biosystems Modeling	3
ABE6931 Seminar	3
ABE6974 Non-thesis project	3
ABE6986 Applied Mathematics in Engineering and Agriculture	3
AGG5607 Communicating in Academia	3
ALS5932 Environment & Society	3
AOM5334C Ag Chem Applic Tech	3
AOM5435 Adv Precision Ag	3
AOM6061 Adv Ag Food Sys In	3
AOM6735 Irrigation Principles and Management	3
AOM6736 Env Hydrology	3
EEL5840 Fundamentals of Machine Learning	3
GIS6616 GIS Analysis	3
STA6093 Introduction to Applied Statistics for Ag & LS	3

## APPENDIX D

### *Summary of Procedures for non-thesis Master's Degree*

It is the student's responsibility to ascertain that all requirements have been met and that every deadline is observed. Refer to the following graduate school checklists to obtain current information. **Graduation Checklist:** <http://graduateschool.ufl.edu/graduate-life/graduation/graduation-checklist/> **Deadline Dates:** <http://graduateschool.ufl.edu/about-us/offices/editorial/editorial-deadlines/>

Requirement	Person Responsible	Completion Date
Work with Advisor to begin formation of Supervisory Committee	Student	Middle of First Term
Transfer of Credit from other Undergraduate, Postbaccalaureate and Graduate Programs	Faculty, Academic Advisor, Student	End of First Term. Submit <a href="#">request form</a> to Staff Academic Advisor
Submit Approved plan of study to Staff Academic Advisor	Faculty, Academic Advisor, Student	End of Second Term
Submit signed Supervisory Committee form to Staff Academic Advisor.	Faculty, Academic Advisor, Student	Before completion of 24 credits, but not later than second term
Notify Staff Academic Advisor of intended graduation date. Check plan of study to ensure that all course requirements will be met. Check deadlines!	Student	Term <u>prior</u> to intended graduation term
Petition to transfer specific non-dept course credits to major courses (note...this requires substantial justification).	Faculty, Academic Advisor	4:00 PM of last day of classes in term <b>preceding</b> the term in which the degree is to be awarded
Final Term Registration	Student	3-Credit Minimum (ABE 6971), (2-Credit during Summer). Graduate coursework required for non-thesis.
Apply for graduation in ONE.UF	Student	Prior to published deadline in Deadline Dates
Notify Staff Academic Advisor of the final exam date, time.	Faculty, Academic Advisor, Student	Not later than 10 working days before examination
Pay all related submission charges listed on ONE.UF	Student	Prior to final submission to Graduate School
Refer to Grad School ETD checklist for required final paper submission items.	Student	Prior to published deadline in Deadline Dates

## APPENDIX E

### *Minimum Requirements for ENG Graduate Degrees*

#### **MSN/MEN=Non-Thesis**

				Total includes these Required Credits	
Degree	Total credits	Total Research Credits	Total course credits	Dept(min)	Math
MEN	30	0	30	15	3
MSN	30	0	30	15	3

In addition to ABE6940 and ABE6931, note that some departmental courses also fulfill approved Math or Data Analytics requirements. Plan of study should indicate which courses fulfill these requirements. (See appendices of approved courses). Total course credits must still add up to required number.

Graduate degrees require 30 total hours for Master's Degrees.

\*Number of total course hours in Plan of study that must have ABE, AOM, or PKG prefix.

**APPENDIX F**  
***Graduation Checklist***

\_\_\_ E-mail the Staff Academic Advisor the semester prior to graduation to do requirements check.

\_\_\_ Have all grade changes for I, N grades submitted. **DO NOT DELAY THIS!**

\_\_\_ **IMPORTANT...**if you made changes to any coursework for a concurrent or non-traditional degree you must resubmit a corrected, signed program of study to the graduate school.

\_\_\_ If you are getting a minor, you must send the Staff Academic Advisor the list of courses for the minor to be submitted to the graduate school.

\_\_\_ The graduate school requires 15 hours of dept. coursework in the major for a non-thesis master's program. The academic advisor may have to petition to have non-ABE/AOM/PKG courses counted, so alert the academic advisor a full semester before you graduation to review your transcript/POS and petition if necessary. This is a petition that is rarely used. Students are expected to take the required coursework in the department.

**Semester of graduation:**

\_\_\_ **Register for required number of coursework (**DO NOT FORGET THIS RULE!**).**

3 hours in Fall or Spring and 2 hours in Summer

\_\_\_ Apply for graduation On ONE.UF

\_\_\_ Reserve regalia for ceremony Registrar's website – graduation checklist

<http://graduateschool.ufl.edu/about-us/offices/editorial/editorial-deadlines/>

\_\_\_ Deadline dates list

Grad school website- <http://graduateschool.ufl.edu/graduate-life/graduation/deadlines/>

\_\_\_ Final exam forms (non-thesis) Forms are prepared and sent via DocuSign by Staff Academic Advisor

\_\_\_ Complete Qualtrics Exit Survey

Sent directly to students

\_\_\_ Exit Interview with Department Chair

Schedule with Education Coordinator

\_\_\_ Forwarding email & postal address

Provide in Exit Survey