Alabama Commission on Higher Education

PROPOSAL FOR A NEW GRADUATE DEGREE PROGRAM

A. General Information

1. **Institution:**
   Auburn University, College of Agriculture
   Department of Crop, Soil and Environmental Sciences.

2. **Date of Proposal Submission:** August, 2013

3. **Institutional Contact Person:** Dr. George Flowers
   Telephone: 334-844-2125; Fax: 334-844-4348; E-mail: flowegt@auburn.edu

4. **Program Identification--**
   Title: Department of Crop, Soil and Environmental Sciences.
   Degree: Master of Turfgrass Management (non-thesis)
   CIP Code: 01.1102

5. **Proposed Program Implementation Date:** Spring, 2014

6. **Program Administration**
   College or School: College of Agriculture
   Dean: Dr. William Batchelor
   Department: Crop, Soil and Environmental Sciences
   Chairperson: Dr. Joseph Touchton

B. **Program Objectives and Content**

1. **To facilitate review of the proposal, please classify the degree program (e.g. Post Baccalaureate Masters, Research Doctorate (Ph.D.), Applied/Professional Doctorate (DPT, Ed.D., or DBA), …).**

   Post Baccalaureate Master’s. The goal of this program is to provide opportunities for working professionals to improve their knowledge and skills in turfgrass management. The degree is a 100% distance education program with coursework in turfgrass management and allied studies.

2. **List the objectives of the program as precisely as possible. The objectives should address specific needs the program will meet (institutional and societal) and the expected student learning outcomes and achievements. This is an extremely important part of the proposal.**
The objectives should lend themselves to subsequent review and assessment of program accomplishments.

We anticipate that this program will be primarily used by those with a BS degree in related areas (Turfgrass Management, Landscape Horticulture, AgriScience Education, Plant and Soil Science). These students are likely to already be employed in the turfgrass or agricultural sector, and they are seeking this degree for additional professional development.

The goal of this program is to provide opportunities for working professionals to improve their knowledge and skills in the key areas of turfgrass management. The skills that they will acquire are outlined in the learning outcomes, as specified below.

Expected Outcomes. Students will:

1. Gain knowledge in the management of turfgrass soils. This will include the construction of specialty areas such as athletic fields and putting greens.
2. Be able to identify and understand control methods for common turfgrass insect, disease and nematode issues, including non-pesticide options. This will include alternative (non pesticidal) control options.
3. Complete and give a presentation in a turfgrass topic, using published research to develop that presentation.
4. Understand the role of plant genetics in the breeding and development of turfgrass cultivars and germplasm.
5. Be able to describe best methods for turfgrass installation.
6. Describe higher-level (graduate level) microbial and soil chemical processes that control the availability of nutrients in the soils.
7. Conduct field or laboratory research that evaluates a developed hypothesis in turfgrass management. Such research may include product testing, or evaluations of management programs or grasses. Results from this research will be presented as a part of a graduate capstone project.

3. Will this program be related to other graduate programs at your institution? If so, how?

The proposed program complements the existing distance education delivery of the Master’s degrees offered in the Department of Crop, Soils, and Environmental Sciences. This proposed degree program will provide some additional enrollment in existing courses, thereby making better utilization of faculty resources and providing additional revenues. The proposed program has a different orientation from the Master’s degrees currently offered in the Department of Crop, Soils, and Environmental Sciences and reaches a different group of potential students (as noted above).
4. Please identify any existing program, option, concentration or track that this program will replace. N/A

5. Is it likely that this program will reduce enrollments in other graduate programs at your institution? If so, please explain.

No, this program is designed to attract an entirely new group of students to programs in Crop, Soil and Environmental Sciences.

6. List new courses that will be added to your curriculum specifically for this program. Indicate number, title and credit hour value for each course.

The first sets of courses are all approved and currently available via distance learning. These courses have been taught in the past two years (or more), and will be course options in this proposed degree program.

AGRN 6106 – Plant Genetics & Crop Improvement, Hours: 3
AGRN 6406 – Bioenergy Crops, Hours: 3
AGRN 6086 – Soil Resources and Conservation, Hours: 4
AGRN 6306 – Soil Chemistry, Hours: 4
AGRN 6066 – Soil Microbiology, Hours: 3
AGRN 6906 – Directed Studies, Hours: 3
AGRN 6936 – Advanced Directed Studies, Hours: 3
AGRN 7956 – Seminar, Hours: 2
ENTM 6366 – Landscape Entomology, Hours: 4

Other Courses which are currently available and have all University approvals:

PLPA 6506 – Plant Nematology, Hours: 4
AGRN 7086 – Experimental Methods, Hours: 3
PLPA 6206 – Mycology, Hours: 4
AGRN 7146: Chemistry and Use of Herbicides in Crop Production, Hours: 3
AGRN 6166 – Advanced Turfgrass Management, Hours: 3

Total Other Courses with Approval: 17

As of July, 2013, total hours of approved and currently available courses for the Master’s degree in Turfgrass Management: **46 hours**

This exceeds the **32 hour requirement** for this non-thesis Master of Turfgrass, providing flexibility in course selection and availability.
7. Please list any existing undergraduate programs at the institution which are directly or indirectly related to the proposed graduate program. If this is a doctoral proposal, also list related master's programs at your institution.

Crop, Soil and Environmental Sciences incorporates the basic sciences (such as biology, chemistry, physics, geology, and microbiology) into an applied science, which is the foundation for most agriculture. Soil Science involves issues related to crop production and also to environmental aspects of soil management.

The Department of Crop, Soils and Environmental Sciences offers the following curriculum tracks that allow students to tailor classes to fit specific interests: 1) Production, 2) Turf Management, 3) Science (for those intending to move directly to graduate school), and, 4) Soil, Water and Land Use. There is also an interdisciplinary degree in Environmental Science offered in collaboration with the College of Engineering and the College of Sciences and Mathematics.

Thus, BS degrees in Agronomy & Soils (the degree given through Crop, Soil and Environmental Sciences) and Environmental Science (the interdisciplinary degree) are directly related to this proposed degree, as students could move into this distance Master’s program with those degrees as educational backgrounds. Indirectly, related degrees would include a BS in Horticulture, in which many allied courses are taught.

8. Program Completion Requirements—32 credit hours

Credit hours required in major courses: 25 credit hours

AGRN 6106 – Plant Genetics & Crop Improvement; Hours: 3
AGRN 6306 – Soil Chemistry; Hours: 4
AGRN 6906 – Directed Studies, Hours: 3
AGRN 6936 – Advanced Directed Studies; Hours: 3
AGRN 7956 – Seminar; Hours: 2
ENTM 6366 – Landscape Entomology; Hours: 4
AGRN 7146 - Chemistry and Use of Herbicides in Crop Production; Hours: 3
AGRN 6166 - Advanced Turfgrass Management; Hours: 3

Included as requirements in the list above are 6 hours of Directed Studies. These courses will be used for small studies to be directed by the advisor. Such research may include product testing, evaluations of management programs or grasses, or the development of management strategies. Results from these studies will be presented via the two (also required) seminars.
Credit hours required in support courses: 7 credit hours

AGRN 6406 – Bioenergy Crops, Hours: 3
AGRN 6806 – Soil Resources and Conservation, Hours: 4
AGRN 6066 – Soil Microbiology, Hours: 3
PLPA 6506 – Plant Nematology, Hours: 4
AGRN 7086 – Experimental Methods, Hours: 3
PLPA 6206 – Mycology, Hours: 4

Credit hours in required or free electives: 0 credit hours

Credit hours for thesis or dissertation: non-thesis Master

Additional requirements such as preliminary qualifying examination, comprehensive examination, practicum or internship, some of which may carry credit hours included in the list above.

Please attach a typical curriculum by semester to this proposal as Appendix A.

9. Accreditation

If there is a recognized (USDE or CHEA) specialized accreditation agency for this program, please identify the agency and explain why you do or not plan to seek accreditation. Auburn University is accredited by SACS, and a substantive change document will be submitted for program approval.

C. Program Admissions Requirements, Enrollment Projections and Completion Projections

1. Describe briefly the criteria and screening process that will be used to select students for the program.

   All students choosing to have Auburn University must meet all admission requirements for Auburn’s Graduate School and the Master’s degrees offered in the Department of Crop, Soils, and Environmental Sciences. In general, the minimum requirements are as follows:

   - Bachelor's degree or its equivalent from an accredited college or university.
   - Minimum GPA of 3.0 in last 60 hours of undergraduate coursework
   - GRE
   - Three letters of recommendation
   - TOEFL for International Applicants
Required Courses in the Basic Sciences:

- Inorganic Chemistry (one semester, typical freshman chemistry)
- Introduction to Biology (one semester, typical freshman biology)

Required Undergraduate Courses in Pest and Crop Management

- AGRN 2040 or 2043: Basic Soil Science
- AGRN 3150 or AGRN 3153: Turfgrass Management
- AGRN 1000 or AGRN 1003: Introductory Plant Science
- At least one of the following:
  - PLPA 3000 or PLPA 3003: Introductory Plant Pathology;
  - ENTM 4020 or ENTM 2043: Basic Entomology; OR
  - AGRN 3120: Weed Science.

If the student lacks these courses, these required undergraduate pest/crop science courses can be taken through distance education at Auburn University, as indicated by the second course number in each list. If one or more of these courses are missing, students with applicable work experience may be granted release from these course requirements by demonstrating similar educational background obtained through other means. Examples of such education include (but are not limited to): Golf Course Superintendents Association of America (GCSAA) A level certification, passage and holding of a Pesticide Applicators Permit, or other evidence of advanced training through short courses and/or certificate programs. Such approval will be granted by the student’s 3-member graduate committee.

2. **Please describe your methodology for determining enrollment projections. If a survey of student interest was conducted, please attach a copy of the survey instrument with a summary of results as Appendix B.**

In the US, a very large industry has grown to produce and deliver turfgrass products and services. The turfgrass industry contributes to the national economy in terms of employment, income from sales of turfgrass products and services, as well as business taxes generated by its economic activities. In 2005, the turfgrass industry generated over 822,849 jobs, and $62 billion total output in impacts (University of Florida). The turfgrass industry will grow and change rapidly into the year 2020, with increasing emphasis on protecting the environment and best management practices. There will be increased employment opportunity and a corresponding need for training programs in turfgrass (Journal of Southern Agricultural Education Research).
The College of Agriculture at Auburn University has researched which graduate programs have a potential for online delivery, that have a high professional demand, and that will generate auxiliary income, as discussed in the AU Strategic Plan. They also evaluated potential programs against the following criteria:

- Academic reputation
- Readiness of the academic unit to develop the program
- Appropriateness for technology-based delivery
- Existence of an identifiable market sufficient to generate self-supporting income.

The online Master of Turfgrass meets all of the above criteria.

Although not yet formally approved, ‘word of mouth’ has already generated much interest in this proposed program. This interests comes from three distinct groups of agricultural professionals: 1) working golf course superintendents and lawn care professionals, 2) high school agricultural vocational educators, and, 3) county extension agents. Individuals from these three groups already have a college degree in an agricultural discipline (or a close related area + experience) and they are all seeking programs that enhance their learning. Anecdotally, a recent e-mail from our Distance Education coordinator summarized recent (within the past month) contacts from six different individuals interested in this program. Two were high school educators, one a lawn care provider, and others were county agents.

Throughout the United States, Turfgrass Management is small niche degree that is usually housed in Departments of Horticulture, Plant Science or Agronomy (will vary with Department). Typical in-house enrollments are from 10 to 35 students (see AU OIRA). In a few of those programs the entry-level course in turfgrass may be offered as a distance option. Specifically, in addition to Auburn University, North Carolina State, the University of Georgia, The Ohio State University and Penn State offer their introductory course as a distance option.

The only university to offer a complete distance degree in turfgrass management is Penn State University. While a few schools offer a Certificate (Ohio State) only Penn State has on-line BS and programs, and they are programs with substantial enrollment. The Penn State University World Campus has had over 5,000 enrollments (since 1999) in the online turfgrass courses, and now provides a series of online certificate and degree programs in the area of Turfgrass (see Penn State web site and Institutional Research). However, a degree from Penn State is for a different geographic client than a degree from Auburn University, and the separation is based upon climate. This is because in the south we grow completely different species of turfgrass (warm season) than those grown in the north (cool season), and this affects the pool of prospective students. While a general turfgrass course does cover all turfgrasses, it is also a fact that there are many highly specialized areas in turfgrass management that vary widely with grass species, and southern turf managers would best learn from those with southern turfgrass management experience.
In addition to College of Agriculture marketing and promotion activities, specific processes to advertise and generate interest in this proposed program are the following:

- Inform golf course superintendents of the program through written articles in the magazine of the national Golf Course Superintendents Association of America (GCSAA) [there are also separate chapters (and publications)] in every state. Auburn faculty involved in this proposed distance program speak at state, regional and national meetings of GCSAA, and we are regulars contributors to the magazines.
- Create web links and informational e-mails for extension staff at Auburn University, Alabama A&M, and affiliated staff at Tuskegee University.
- Work though the College of Education and Alabama high schools to inform high school agriscience educators of the proposed program.
- Provide educational materials and articles for the newsletters of the state turfgrass and/or horticultural associations. These organizations also hold yearly conferences, and the Auburn faculty associated with this proposed program also speak at those conferences on a regular basis.
- Provide information to the newsletters of and speak at the conferences of allied organizations such as the annual meeting of the Alabama Department of Transportation (roadside vegetation management), the AL Invasive Plant Council, or High School Coaches Associations. These organizations all have individuals who are involved in turfgrass management, and may have an interest in advanced education in this area.

In conclusion, the educators and researchers who work in the area of turfgrass management at Auburn University are convinced that we can build a significant and widely recognized distance education program in turfgrass management. We have had many questions and queries about the program, and most ask when the program will be approved, as they are ready to start.

Provide a realistic estimate of enrollment at the time of program implementation and over a five-year period based on the availability of students meeting the criteria stated above.

Note: It is not anticipated that the program will have full time students. As a 100% on-line, distance program it is the intent of this program to assist working professional who wish to desire additional education in turfgrass management.

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3. Projected Program Completion Rates.

Please indicate the projected number of program graduates for the first five years.

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<th>Year 1</th>
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</table>

D. Program Need Justification

1. Will the program satisfy a clearly documented need (institutional and societal) in an effective and efficient manner? If the program duplicates or closely resembles another program already offered in the State, can this duplication be justified? What characteristics of the identified need require that it be met by a new program rather than an existing program? *(Note: In explaining how the proposed program meets this criterion, an institution may refer to the criterion on collaboration and develop a response that addresses both criteria simultaneously).* For purposes of this criterion, duplication is defined as the same or similar six-digit CIP code and award level in the Commission's academic program inventory. Institutions should consult with the Commission staff during the NISP phase of proposal development to determine what existing programs are considered duplicative of the proposed program.

The proposed program complements the existing distance education delivery Master’s degrees offered in the Department of Crop, Soils, and Environmental Sciences. The proposed program has a different orientation from the Master’s degrees offered in the Department of Crop, Soils, and Environmental Sciences and reaches a different group of potential students. This program is specifically designed to help professionals that already work in the area of turfgrass management gain additional education in this area.

Our program would be the first with a southeastern (warm season) focus, and thus will attract superintendents who manage turfgrass in warm climates. This could include students from Asia, and central and South America (especially Brazil and Argentina). As a scale, there are 300 golf courses in Alabama and twice that number in Georgia. Already, several golf courses superintendents have inquired about this program, as their courses will cover the costs of this additional training for their careers. We also anticipate significant interest from countries with expanding golf industries with a warm-season turfgrass focus, including China, India and South America.

Over the next several decades increasing demand for new professionals in Turfgrass, as well as continuing education for practicing professionals, will
require enhanced access to higher education and professional development opportunities. Developing a comprehensive degree and certificate programs through distance education would serve a rapidly growing demand for graduate education related to Turfgrass professions. Several academic departments in the land grant university system offer non-thesis Master of Science (M.S.) degrees that require students to complete coursework, but do not require students to conduct a traditional research project. Enrollment in non-thesis M.S. programs is generally low because most people interested in these programs are practicing professionals and are unable to simultaneously accommodate career, family, and on-campus academic responsibilities in the normal 18 to 24 month schedule with a traditional M.S. degree. An internet-based distance learning program leading to a non-thesis degree or certificate would serve this growing demand.

2. **Based on your research on the employment market for graduates of this program, please indicate the total projected job openings (including both growth and replacement demands) in your local area, the state, the SREB region, and the nation.** These job openings should represent positions that require graduation from a program such as the one proposed.

The novel intent of this program is not to create job openings. Rather, it is to make turfgrass professionals more competitive in the existing job market, and to help them move up into turfgrass-type careers with additional responsibility and greater advancement. For example, careers in Extension (county or regional agents) often have a requirement of a Master's degree for advancement. This proposed degree provides an opportunity for that advancement. Additional opportunities for advancement occur in the educational sector, where educators in Agri-Science often wish to pursue an advanced degree, and this degree offers additional education in a specialty area they can directly use in their teaching.

When turfgrass and allied areas are considered, there are many job openings in local, statewide and national organizations every year. Using career opportunities posted at Auburn University as an example (through the College of Agriculture career center), there are four to five job openings in the areas of golf course management, landscape services or athletic field management in any given month. Students with excellent grades and a willingness to move can interview for two to three possible positions in any given month (typically for larger chemical companies or other agricultural firms). Completion of this proposed Master degree will make students more competitive for these posted positions.
Projected Job Openings

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</table>

† Local positions would include landscape supervisor positions (having this Master’s degree would allow professionals to move up into supervisory positions), golf course superintendent or athletic turf manager.
‡ State positions would be similar to local, with the addition of careers such as agronomist for state agencies (ALDOT, ADEM), agriscience educators, and state extension personnel.
€ Positions in the southern region would be similar to local and state, with the addition of possible careers in regional sales for agricultural firms, and employment for federal agencies (USGS, Fish and Wildlife).
£ National employment would also include sales representative and technical representative positions for agriculture firms.

3. Please give a brief description of the methodology used to determine the projected job openings. If a survey of employment needs was used, please attach a copy of the survey instrument with a summary of results as Appendix C.

Projected job openings were determined by: 1) evaluation of 20 years of job hiring and availability information as gathered by the Department of Crop, Soil and Environmental Science. Job placement information is collected every year by our Department (and the College of Agriculture) and we thus have a very accurate picture of job placement and availability in local, state and region, 2) evaluation of past two years of job announcements by the Golf Course Superintendents Association of America (national organization for Golf Course Superintendents) and by the American Society of Agronomy (national organization of Agronomists), 3) evaluation and monitoring (for the past year) of several national hiring web sites, including indeed.com, agcareers.com and ag-jobs.com, 4) evaluation of large agribusiness firms career sites, including Bayer CropScience and Dow AgriScience. The federal hiring bases are also tracked, providing us with measures of job availability with extension, the National Resource Conservation Service, and other federal agencies that often hire our graduates.
This data collection is coupled with years of experience with smaller scale hiring – individual golf courses, smaller agribusiness firms, landscape companies that only need a few employees. These firms work individually with College of Agriculture staff when employees are needed, and such employments needs are well documented and publicized to students and staff.

4. **If the program is primarily intended to meet needs other than employment needs, please present a brief rationale.**

The novel intent of this program is not to create job openings, but to help turfgrass professionals (and others in allied areas) advanced in their chosen career. This degree should make turfgrass professionals more competitive in the existing job market, and to help them move up into turfgrass-type careers with additional responsibility and greater advancement.

5. **If similar programs are available at other institutions in the state, will any type of program collaboration be utilized? Why or why not? What specific efforts have been made to collaborate with institutions to meet the need for this program? Address qualitative, cost, and access considerations of any collaboration that was considered.**

There are no other programs like this anywhere in Alabama.

6. **Please identify any similar programs at institutions in other SREB states. If the proposal is for a doctoral program, also identify similar programs in the nation.**

There are no other programs like this anywhere in the southeast.

7. **Will any type of distance education technology be utilized in the delivery of the program on your main campus or to remote sites? If not, why? Address the quality, access and cost considerations of using distance technology in the program.**

The entire program is intended to be completed through distance education delivery methods. All resources for completing courses are developed by a faculty member and are supported through Auburn University’s technology resources. Before registration, students can view the course syllabus, along with course requirements. In general, lectures are asynchronously delivered and are available through online videos. Other course materials are made available through the university’s learning management system (LMS). Interactivity is possible through the LMS, which allows for online discussions, web conferencing and chats with instructors. These courses have been approved through Auburn’s curriculum review process. Therefore, the college, graduate and university curriculum committees have approved the courses.
The course approval process also reviews the curriculum delivery methods related to distance methodologies.

E. Program Resource Requirements

1. Number of currently employed qualified faculty who will teach in the program:

   Primary Faculty--
   **Full-time:** No faculty will work full-time exclusively for this program. All faculty will teach their courses and advise students in this program as a part of their currently existing research, teaching and outreach programs. It is anticipated that seven faculty will advise and teach for the benefit of this program. This does not count faculty who simply teach a distance course in which these students might enroll. The seven faculty who are included will actively advise and work with students in this program.
   Part-time: 7 (see explanation above)

   Support Faculty--
   **Full-time:** 0
   Part-time: 6 – These are faculty who are teaching distance courses in which students enrolled in this program would enroll. These faculty would not serve as a major advisor for students in this program. However, they might serve on the graduate committees for enrolled students.

Please attach the curriculum vita of each existing faculty member to this proposal as Appendix D: Short, two to four page CVs are attached.

2. **Number of additional qualified faculty who will be employed to teach in the program during the first five years:** None.

3. **Briefly describe the qualifications of new faculty to be hired.** N/A

4. **Briefly describe available and additional support staff that will be provided for the program.** N/A

5. **Describe any special equipment that is necessary for this program, indicating what is currently available and what would be added, including the cost of any additional equipment.** N/A

5. **Describe facilities required for the program, indicating what is currently available and any necessary renovations or additional facilities that would be added. Provide a cost estimate for any renovations or additions.** N/A – online program
7. Using the Collection Assessment Manual of the Network of Alabama Academic Libraries (NAAL), provide an indication of the current status of the library collections supporting the proposed program. Please describe how any deficiencies will be remedied, including the cost of such remedies.

We used the guidelines established by the Network of Alabama Academic Libraries (NAAL) Collection Assessment Manual (1) to measure both the extent to which our existing library holdings and the ongoing collecting activity can support the proposed Master of Turfgrass Management at Auburn University. Our assessment indicates that holdings in this subject in general not only meet, but in some areas, far exceed the criteria for doctoral level studies. Auburn University Libraries has in place a 4C research level collection of books, journals and databases; and is collecting at levels 3 - 4, a selective research level collecting intensity. Auburn University Libraries has comprehensive collections of high impact journals in agriculture, biosystems engineering and related areas. The Libraries has in place: reference, instructional document delivery; computer information services for storing, accessing and delivering information to support undergraduate, and graduate instructional, research and outreach programs in Turfgrass and other key areas. The combined collections of the Auburn University Libraries contain over 3.2 million volumes as well as 2.6 million government documents, 2.5 million microforms, and over 148,000 maps. The Libraries receive over 35,000 current periodicals, many which are available online. The library also provides access to over 227 electronic databases and has over 10 million archival and manuscript items. There is a library Subject Specialist for Agriculture, Agronomy, and Biosystems Engineering.

There are no deficiencies noted.

8. How many assistantship/fellowship stipends will be provided and what will be the range of support involved? N/A

F. Costs and Financial Support of the Program

Provide a realistic estimate of the costs of the program. This should only include the additional costs that will be incurred, not current costs. All sources and amounts of funds for program support should be indicated.
### Estimated New Funds Required to Support the Program

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<td>51800</td>
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*Additional faculty salaries should be shown in all five years*

### Sources and Amounts of Funds Available for Program Support

<table>
<thead>
<tr>
<th></th>
<th>Year 1</th>
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<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
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<tbody>
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<td>Internal</td>
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<tr>
<td>Reallocation</td>
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<td>*Extramural</td>
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<td>Tuition</td>
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<td>28800</td>
<td>53550</td>
<td>53550</td>
<td>81000</td>
<td>237690</td>
</tr>
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<td>28800</td>
<td>53550</td>
<td>53550</td>
<td>81000</td>
<td>237690</td>
</tr>
</tbody>
</table>

*Attach a statement identifying actual or probable sources of extramural funds for the program as Appendix E. Be as specific as possible. N/A*

### G. Institutional Program Evaluation and Approval Process

1. **Please describe the process used by your institution in its internal evaluation and approval of this program.**

   The process for developing this program at Auburn is as follows:

First, a Preliminary Program Proposal Planning Form was submitted and followed a process with necessary curriculum review procedures at the department and unit levels. The next step was review by the Graduate Council and review by the UCC.
Following review by the relevant curriculum committees, the proposal was reviewed by the Office of the Provost to assess the viability of the proposed program (2012).

The next process was full approval of all courses available at Auburn University (February, 2012 – December, 2012). Following this process, the Program Proposal was submitted and followed all curriculum review procedures at the department and unit levels. It was then reviewed by the Graduate Council and forwarded to the Office of the Provost. The proposal was reviewed by the Auburn University Board of Trustees and approved. (February, 2013)

Course Evaluation. All courses offered at by AU eValuate, which is a web-based software application that allow students to anonymously evaluate courses and instructors online.

2. It is expected that the institution will utilize one or more external consultants for all doctoral program proposals and the more esoteric or unusual master's programs. Please attach the consultant’s report as Appendix F. N/A

H. Program Review and Assessment

Approval of this program will be on the basis of program outcomes agreed upon by the institution and the Commission. The outcomes will be based on the objectives of the program and enrollment projections. In the final analysis, the institution and its governing board are accountable for the quality, utility and productivity of this and all other programs of instruction. With this in mind, please describe the procedures that will be used in assessing program outcomes. Among other things, include an assessment process for student learning outcomes and a follow-up plan to determine accomplishments of graduates such as obtaining relevant employment or being admitted to a doctoral program.

The assessment of the student learning outcomes will be a combination of standard testing via exams and quizzes, supervision by a graduate committee, and presentations of both formal and informal scale. The first layer of assessment will be by exams and evaluations of written materials associated with the selected courses. Our planned non-thesis MS degree has a high percentage of 'real' courses, in that they are not ‘Special Problem' courses. The majority of course credit will be obtained via specific courses with highly detailed syllabi and testing procedures. Although a standard approach, it is a highly reliable method for the assessment of student progress.

The second layer of assessment will be by the participation of each student’s Graduate Committee. A Graduate Committee will comprise 3 faculty members, all of whom teach in this non-thesis MS program via their distance course. These faculty will participate in distance committee meetings (held each semester), and
they will also oversee the Directed Studies and Advanced Directed Studies courses. Assessment materials will include: 1) a plan of study, 2) a rubric (with scoring for each presentation area) for the presentation to be given in the first Directed Studies course, and, 3) a scoring rubric for the presentation to be given in the Advanced Directed Studies course. Presentations will be scored by a variety of students and faculty and they will also be recorded. A student does not progress from semester to semester until their Graduate Committee has examined their prior performance, and determined that they are making progress.

If the results of our Assessments (which are exam scores, reports, recorded presentations and participation in chat rooms or other on-line groups) show that student learning is missing in some areas we will do the following. First, we will increase time in the area shown lacking. For example, if students are not doing a solid job with presentations (as scored via the rubric for Directed Studies, for example) we increase the number of presentations required in that course. We may also need to improve the assessment method itself, and this may require different testing (virtual weed ID, for example) or other teaching techniques to better evaluate student progress. In general, improving our on-line teaching and the assessment of that teaching will be a semester to semester event, with continued discussion and evaluation amongst the faculty who teach in this distance program.
### APPENDIX A – TYPICAL CURRICULUM BY SEMESTER

**Master of Turfgrass Management**

Department of Crop, Soil, and Environmental Sciences

<table>
<thead>
<tr>
<th>Semester 1</th>
<th>Semester 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FALL</strong></td>
<td><strong>SPRING</strong></td>
</tr>
<tr>
<td>AGRN 6106 – Plant Genetics &amp; Crop Improvement, Hours: 3</td>
<td>AGRN 6306 – Soil Chemistry, Hours: 4</td>
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<tr>
<td></td>
<td>AGRN 6906 – Directed Studies, Hours: 3</td>
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</table>

<table>
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<th>Semester 3</th>
<th>Semester 4</th>
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</thead>
<tbody>
<tr>
<td><strong>FALL</strong></td>
<td><strong>SPRING</strong></td>
</tr>
<tr>
<td>PLPA 6506 – Plant Nematology, Hours: 4</td>
<td>AGRN 7086 – Experimental Methods, Hours: 3</td>
</tr>
<tr>
<td>ENTM 6366 – Landscape Entomology, Hours: 4</td>
<td>AGRN 7146 - Chemistry and Use of Herbicides in Crop Production, Hours: 3</td>
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<tr>
<td>AGRN 7956 – Seminar, Hour: 1</td>
<td>AGRN 6936 – Advanced Directed Studies, Hours: 3</td>
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<table>
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<th>Semester 5</th>
<th>Semester 6</th>
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<td><strong>FALL</strong></td>
<td><strong>SPRING</strong></td>
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<tr>
<td>AGRN 6166 - Advanced Turfgrass Management; Hours: 3</td>
<td>AGRN 7956 – Seminar, Hour: 1</td>
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