

# **Texas A&M University**

# **Soil and Crop Sciences**

**High Impact Practices Manual**

**for**

**Internships**

**and**

**Undergraduate Research**

Internship, Undergraduate Research or Study Abroad are required of all students in the Department of Soil & Crop Sciences. These experiences will expose students to a wide variety of interactions, networking and other opportunities which are key securing job in the future.

**Soil and Crop Sciences Internship** is a cooperative educational program between the Plant and Environmental Soil Science and Turfgrass Science majors in the College of Agriculture and Life Sciences at Texas A&M University and approved employers who furnish facilities and instruction to help students acquire the skills and knowledge needed in their chosen profession.

### **Course Description**

#### **SCSC 484 — Internship (1-3 credits)**

Independent study and supervised field experience related to the student's professional interest.

### **Eligibility**

It is available each regular semester and during each ten-week summer session to students majoring in Plant and Environmental Soil Science or Turfgrass Science. The course is limited to students who have earned 30 or more hours at Texas A&M and a cumulative grade point average of 2.00 or higher in their major and overall.

### **Enrollment Procedures**

- Meet with an instructor of record/professor to discuss opportunities, contacts
- Prior to the beginning of the semester in which the internship is to be taken, the student, student's instructor of record and the company representative must determine whether an available position will provide an experience that supports the student's academic and career objectives. Further, they should be assured that the student's interests and academic preparation will satisfy the demands of the cooperating agency.
- On approval of the company representative and with the work description or schedule of anticipated activities, the student will submit the proper paperwork to the teaching office of the Soil and Crop Sciences Department (Room 217, Heep Center), Texas A&M University, College Station, TX 77843, along with other travel documents as needed.
- Students seeking internship/undergraduate research experiences are to complete a course application form (attached).
- The academic advisor will proceed with registration for the course following the registration instructions issued for the respective semester.

### **Student has the opportunity to:**

- gain an understanding of the relationship between classroom theory and its practical application
- test career objectives to determine if there is a proper fit between career requirements and student objectives
- improve interpersonal skills
- develop professional work habits
- become acquainted with people in professional occupations for potential job opportunities

- earn funds to help support college education
- prepare for a smooth transition into full-time employment
- retain student status while learning on the job
- work with people from diverse backgrounds

**The Employer has the opportunity to:**

- establish a pool of potential professional employees who have demonstrated their abilities
- train highly motivated students
- develop an efficient training program
- send goodwill ambassadors back to campus
- assist the Department in evaluating students as to their potential to perform in post-graduate career positions

**The Department of Soil & Crop Sciences has the opportunity to:**

- receive student and industry feedback that can affect curriculum change
- reinforce positive relationships with the business community
- increase rapport with community interests and encourage community support for university programs
- demonstrate the Department's concern and support in maintaining individuality of the student

**Operational Principles**

The student internship concept, as practiced at Texas A&M University's Department of Soil and Crop Sciences, has the following operational and philosophical principles:

- That each student intern shall have well-defined work activities that are regarded as worthwhile by the cooperating agency with whom the intern is affiliated, the intern, and the instructor of record.
- That each intern shall develop specific learning objectives that can be readily defined and reviewed periodically throughout the work period.
- That each intern shall be supported by an instructor of record and a cooperating agency representative. The roles of these individuals are assisting with task identification, establishing learning objectives, carrying out the task, counseling the intern and carrying through with ideas and projects initiated.
- That each intern contract as an independent agent with the cooperating agency to do the work and pursue the learning objectives.
- That each intern assess the work of the internship experience in a non- school setting and produce a final report for the instructor of record addressing the items in “Guidelines for the Student’s Final Report”.

## Responsibilities of the Principal Participants

### The Student

The student, instructor of record or advisor may seek out the potential placement opportunities for the internship program. It shall be the student's responsibility to perform tasks related to applying

for employment. These tasks may include creation of a resume, writing a cover letter, developing and executing a job search strategy, arranging for job interviews, procuring his or her employment site, and making housing arrangements for the duration of the internship. On approval of the employment site by the instructor of record, the student and instructor of record develop a "Plan for Internship". **A signed copy of this plan must be submitted to the Soil and Crop Sciences Department's Teaching Office (Room 217, Heep Center) before the approval of enrollment into the internship program.** Registration procedures for the course are outlined in "Enrollment Procedures".

While participating in the internship program, the student is expected to:

- work a minimum of 40 hours per week for 10 to 12 weeks
- complete the tasks and activities outlined in the "Plan for Internship"
- conform with the normal work hours of the cooperating agency, including overtime when requested
- work for the employer's best interests including maintaining confidential trade secrets
- request permission from the employer for any leave periods and inform the student's instructor of record of the absence
- submit a final report, presentation, or other approved item as described in "Guidelines for the Student's Final Report", at a mutually agreed upon time

### The Student's Instructor of Record

Instructor of Record may recommend internship placement opportunities for students related to the student's interests. A listing of available internship opportunities is available in the Teaching Office of the Soil and Crop Sciences Department. Arrangements for such internships are to be initiated by the student and must be approved by the instructor of record following submission of documentation to justify the cooperation of a particular agency in providing the internship supervision.

The instructor of record reviews the plan to determine whether the planned internship:

- is an academically relevant component of the learning process that is appropriate for university credit
- involves initiative, creative opportunities, meaningful responsibilities and assignments — in contrast to routine or continuously repetitive activities
- provides the student a learning experience and the exposure needed to understand the opportunities, functions, and responsibilities of the disciplines
- includes appropriate supervision and direction by qualified and interested persons

### The Cooperating Agency Supervisor

When the agency selects a participant for the internship program, it is expected to provide a variety of educational experiences for the intern and a program sufficiently flexible to permit intern involvement in specific projects. The agency assigns responsibility for supervision of the intern to a specific individual, and a final review of the intern's performance is expected. Further, the agency supervisor completes the "Supervisor's Evaluation of Student Performance During Internship Program" form appraising the student's performance. The form is forwarded to the student's instructor of record.

The supervising agency may provide wages, reimbursement for travel, or other remuneration arrangements while the student is on the internship. These arrangements are to be agreed upon by the cooperating agency and the intern prior to employment.

**Texas A&M University**  
**Department of Soil and Crop Sciences**  
**SCSC 484-Internship**

(must be completed before registration)

**It is recommended students have their internship credit completed one semester in advance of graduation.**

Student Name: _____	UIN: _____
Major: _____	Classification: U1 U2 U3 U4 U5
Email Address: _____	
Local phone: _____	

SCSC 484 Semester: Fall Spring Summer SCSC Faculty Member: \_\_\_\_\_

SCSC 484 Credit Hours (circle one): 1 2 3

All students will need to complete travel requirements prior to registration for SCSC 484. You will need to complete a travel form for the University. Go to [https://studentactivities.tamu.edu/app/form\\_travel/index](https://studentactivities.tamu.edu/app/form_travel/index). Please include your advisors email on the travel request which will allow us to receive a copy of your request for our records. You will also need to complete the waiver form [http://studentactivities.tamu.edu/site\\_files/riskrelease.pdf](http://studentactivities.tamu.edu/site_files/riskrelease.pdf). Keep with you while traveling and provide a copy with the application.

Proposed SCSC 484 description (attach additional information as needed): \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Final Product: Report Presentation Other: \_\_\_\_\_

Anticipated completion date: \_\_\_\_\_

<b>Approval:</b>
Student Signature: _____
SCSC 484 Instructor's signature: _____

**Company Information**

Company's Address: \_\_\_\_\_

\_\_\_\_\_

Supervisor's Name: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Supervisor's Email: \_\_\_\_\_

Date and Duration of Internship: \_\_\_\_\_

## **Guidelines for the Student's Final Report**

An internship experience is much more than a job. It is a valuable portion of your preparation for a professional career. For us to evaluate your progress and the outcome of your internship program, a report is needed from you describing what you have achieved during the internship. The preparation of this report will also help you evaluate your professional development leading to your career goals. Your report must be received by your instructor of record prior to the last class day of the semester. Reports are to be sent to the Department of Soil and Crop Sciences, Texas A&M University, 217 Heep Center, College Station, Texas 77843-2474.

### **Final Report**

During the latter part of the internship program or during the final two weeks of the semester, whichever comes first, a detailed type-written report is required. It should reflect an evaluation of the complete internship program. The final report should include:

- a record of the significant activities (not a daily log, but an executive summary of major activities)
- a description of the organizational structure and function of the cooperating agency sponsoring your internship in which you describe the responsibility of your colleagues and indicate your assignment within the organizational structure
- a discussion of how your pre-planned objectives were implemented and the outcome of each
- a detailed description of the activities associated with your area of responsibility evaluated in relation to your interests and educational background
- an appraisal of the internship program relative to your interests and career goals
- your suggestions and recommendations to other students who might wish to pursue an internship with your cooperating agency
- changes you plan to make due to the internship experience (i.e., courses to take, career plan changes, etc.)

In addition to the specific points to be addressed in the final report, you may describe any other observation or experiences not specified above. Your supervisor must be allowed the opportunity to review your report prior to submission to the instructor of record. This procedure will help to avoid release of any controversial or restricted information from your employer's point of view.





6. Adaptable to variety of jobs

C. *Potential for career in this professional industry*

**Please circle the letter grade that you believe the student should receive for his or her performance during this internship**

**A      B      C      D      F**

1. Was the student adequately prepared to work in your program?

Yes \_\_\_\_\_      No \_\_\_\_\_      Somewhat \_\_\_\_\_

List the areas of adequate preparation and the areas where additional preparation would have improved the student's capability of work in your agency.

2. How did the student demonstrate his or her acceptance of responsibility for program planning and implementation?

3. In your opinion, what are the student's areas of greatest strength and areas that need improvement?

4. Would you re-employ this student or employ another student with a similar background?

Yes \_\_\_\_\_      No \_\_\_\_\_      Maybe \_\_\_\_\_

5. What recommendations do you have for us to include in this student's academic program to more adequately prepare the student for future professional roles?

6. Are you interested in having a similar person for another internship at your agency?

Yes \_\_\_\_\_ No \_\_\_\_\_

If yes, we will add your name and address to our list of approved internship sites.

If no, could you please indicate the reason why your agency can no longer participate in our Internship Program? This information may assist us in future programming.

7. Additional comments.

8. If you have any questions regarding this evaluation form, please contact the student's academic advisor or instructor of record by calling (979) 845-3341.

When completed, please return this form to:

Advising Office  
Department of Soil and Crop Sciences  
217 Heep Center  
2474 TAMU  
Texas A&M University  
College Station, TX 77843-2474  
(979) 845-3341; fax (979) 845-0456

Signature \_\_\_\_\_

Date

Title \_\_\_\_\_

Supervising Agency \_\_\_\_\_

# Undergraduate Research, SCSC 491

For more information please read below. If you decide to complete undergraduate research you will need to complete the undergraduate research form and return to your academic advisor prior to registration. You will need to speak with an instructor of record to earn approval, signature required on form.

## **Course Description: SCSC 491**

Research conducted under the direction of faculty member in agronomy. Registration in multiple sections of this course are possible within a given semester provided that the per semester credit hour limit is not exceeded. Prerequisites: Junior or senior classification and approval of instructor (complete form below).

## **What is undergraduate research?**

Undergraduate Research has been officially defined by the Council on Undergraduate Research as “An inquiry or investigation conducted by an undergraduate student that makes an original intellectual or creative contribution to the discipline”. There is substantial room for flexibility within this definition, for example spanning individual or team research efforts initiated by students or faculty in research courses, internships, or paid student worker positions. At Texas A&M, research opportunities are open to any undergraduate, being most commonly a collaborative effort between a student and a faculty member using an inquiry-based approach to generate new knowledge. As such, undergraduate research qualifies as a “high impact educational practice”, providing students with an opportunity for integration, application, and reflection on their knowledge.

## **What are the benefits of undergraduate research?**

Students who participate in undergraduate research gain many skills that they might not otherwise acquire from classroom instruction. These include practical skills for data collection and analysis as well as more general skills in teamwork, problem solving, time management, and effective communication. Undergraduate researchers gain a deeper understanding of their chosen field not only by actively participating in it, but through mentoring relationships with faculty and graduate students. Undergraduate research can help you clarify your career goals by identifying what you enjoy doing and gaining a better perspective on what it means to be a professional in your field. As a result, student researchers are more likely to be satisfied with their undergraduate education and continue on to graduate or professional school. Research experience strengthens applications for graduate and professional schools, business, or industrial positions by expanding your technical skills and professional knowledge, improving your resume, and providing opportunities for strong letters of recommendation. Finally, it can be a lot of fun. You generate new knowledge, meet interesting people, and you might even get paid for doing it.

## **2. Undergraduate Research at Texas A&M**

### **How common is undergraduate research at Texas A&M?**

Undergraduate research exists in every department and college at Texas A&M, even in those that have no undergraduate teaching programs, such as the Bush School or the Health Science Center. Although there is no exact count of the number of student participants (because there are so many different formats for undergraduate research), in senior surveys 20-30% of graduates indicate that they participated in research at some time during their undergraduate careers.

### **What kinds of undergraduate research activities are available at Texas A&M?**

Undergraduate research takes many forms: hourly paid student worker jobs, research courses, inquiry-based classes, formal undergraduate programs that require the completion of an undergraduate thesis (such as the [Undergraduate Research Scholars Program](#)), [summer research programs](#), study abroad, field courses, and internships. Almost all of these research activities are conducted under the direction of a faculty advisor. Most commonly, students contact several faculty in their area of interest to explore opportunities, eventually agreeing on a project related to one faculty member's research focus. Alternatively, students can initiate their own research project and then seek out a faculty mentor who is willing to advise them.

### **What are the expectations for undergraduate research?**

It is important for students to gain a clear understanding of faculty expectations for undergraduate research projects, as they can vary considerably among faculty advisors. Practical considerations include the number of hours each week dedicated to research, expected research coursework, and research credit hours or compensation. But personality traits are just as important. Advisors expect students to be self-motivated and work well independently. Enthusiasm, reliability, and intellectual curiosity are hallmarks of a successful research student. Very importantly, be sure to understand your advisor's expectations for communication: how often are you expected to meet and discuss progress, and how are you expected to obtain help? Be sure you understand what final products will be expected from you. These can include written reports, oral presentations, posters, and training of new students.

### **How do I go about finding an undergraduate research position?**

Undergraduates have many opportunities to learn about research positions. Departmental websites, undergraduate advisors, student organizations, and personal contacts with faculty are the most common. Honors and Undergraduate Research gives frequent presentations on opportunities in undergraduate research to classes, seminars, and student organizations, and presents a regular Friday afternoon workshop "Getting Started in Undergraduate Research". A description of our workshop activities can be found on our [Workshops and Informationals page](#). There are also campus-wide events to publicize opportunities in undergraduate research, such as the Sigma Xi Undergraduate Research Expo held in October, where faculty with undergraduate research opportunities are available to meet interested students in science, technology, engineering, and mathematics. **In the end, however, students must learn about specific research opportunities by talking to faculty.** This is the only way to determine what is available, what the expectations will be, and how the research will fit into your educational plans. Talk to faculty who you find approachable or who are doing something you think is interesting. They can help you find opportunities.

### **Is training required for undergraduate research?**

All undergraduate researchers should expect to be trained by their research advisors in the basic techniques and approaches of their research discipline. Undergraduate researchers are expected to meet the same training standards as graduate student and faculty researchers performing the same procedures. You must ask your instructor of records/research advisor about required training when you begin a project and should never perform a procedure if you feel you are not adequately trained for it.

### **What formal programs exist to support undergraduate research?**

There are a variety of organized opportunities for conducting undergraduate research at Texas A&M. The [Undergraduate Research Scholars program](#), administered by Honors and Undergraduate Research, provides the opportunity to produce an undergraduate research thesis under the direction of a faculty mentor. Additionally, several TAMU colleges and departments support formal research programs, both during the regular academic year and during the summer. Speak to your instructor of record about this opportunity.

### **Can I earn Honors credit for undergraduate research?**

If you have been admitted to the Honors program there are two ways you can earn Honors credit for undergraduate research. Participating in undergraduate research in the [Undergraduate Research Scholars program](#) can serve to fulfill the capstone requirement for students completing the undergraduate Honors program to receive Honors Fellows designation at graduation. Additionally, Honors course credit for an undergraduate research class (e.g., 285, 291, 485, 491) can be obtained by completing an [Honors Independent Study application](#). The HIS application must indicate how the student's participation in honors research exceeds what would be expected for other students not receiving Honors credit. Students must have **completed** nine hours of Honors classes and have a minimum 3.5 GPR to be eligible for HIS approval. Once an HIS is approved by HUR, the student will receive Honors credit for the research hours at the end of the semester when the student's advisor confirms that the student's work was of Honors caliber. If you are not an Honors student, you can not receive Honors credit for your research hours.

**Texas A&M University**  
**Department of Soil and Crop Sciences**  
**SCSC 491-Research**

(must be completed before registration)

**It is recommended students have their research credit completed one semester in advance of graduation.**

Student Name: _____	UIN: _____
Major: _____	Classification: U1 U2 U3 U4 U5
Email Address: _____	
Local phone: _____	

SCSC 491 Semester: Fall Spring Summer SCSC Faculty Member: \_\_\_\_\_

SCSC 491 Credit Hours (circle one): 1 2 3 NOTE: one credit hour assigned for each 3 hours of work expected per week during the fall/spring semester. Summer semester requires more weekly hours due to the condensed timeframe.

Proposed SCSC 491 project (attach additional information as needed): \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Final Product: Report Presentation Other: \_\_\_\_\_

Anticipated completion date: \_\_\_\_\_

<b>Approval:</b>
Student Signature: _____
SCSC 491 Instructor's signature: _____