

Syllabus

Course Information

Course Number: SCSC 629
Course Title: Laboratory Quality Systems
Section: 699, 700
Time: N/A
Location: Online
Credit Hours: 3

Instructor Details

Instructor: Dr. Tim Herrman, Professor, Department of Soil and Crop Sciences, State Chemist and Director, Office of the Texas State Chemist
Office: Office of the Texas State Chemist, 445 Agronomy Rd, College Station TX 77843
Phone: 979-845-1121
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Course Coordinator
Prabha Vasudevan
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Course Description

Quality systems and method development used within a laboratory; ensuring the integrity of procedures used in lab processes, chain of custody, information management, and international laboratory standards; regulatory requirements for laboratory operation; bio-security precautions; laboratory management.

The course will address the following topics:

- **Laboratory Quality System Structure**
- **Laboratory Quality Control Techniques**
- **Method Validation**
- **Laboratory Quality Management**

Course Prerequisites

None

Special Course Designation

N/A

Course Learning Outcomes

After completing this course, participants will gain practical knowledge in the topics and subtopics listed in the course schedule (see below) by viewing course lectures, reading assignments, participating in course discussions and completing interactive assignments (homework) that focus on laboratory quality processes and their implementation.

Textbook and/or Resource Materials

There are no required textbooks. Readings will be taken from reference materials including government publications and standards. All readings will be available on the course website in .pdf format. Online slide presentations with audio for each module can be accessed from the course website. The slides for each presentation will be provided as a .pdf file that can be downloaded and printed if needed.

Course Tools

All course materials, readings and activities will be presented through the Canvas Learning Management System. However, if you need an immediate answer to a question, please send an email directly to Dr. Herrman at tjh@otsc.tamu.edu or Prabha Vasudevan at prabha@otsc.tamu.edu

Grading Policy

Grades will be determined as follows:

Discussions (6)	30 pts
Homework (6)	70 pts

Note: Each discussion is worth five pts each. Each Homework is worth ten pts each, except for HW # 5 which is worth twenty pts.

Grades Breakdown:

A	100 – 90 pts
B	80 – 89 pts
C	70 – 79 pts
D	60 – 69 pts
F	<60 pts

Course Assessments

Discussions (6)

There will be 6 graded discussions held on the discussion forum in Canvas.

Homework Assignments (6)

Homework will involve focus on laboratory quality processes and their implementation.

Late Work Policy

Please inform the course instructor or coordinator if you cannot submit an assignment on the due date to arrange for alternative submission date. A request for extension should be made prior to the assignment due date.

Instructor/Student Communication

Please send all emails to tjh@otsc.tamu.edu and cc prabha@otsc.tamu.edu. If you have a question about the material, please post it in course google group so that other students have the chance to respond to it and/or benefit from the answer. The instructor will read the discussion board and will reply to messages when necessary. All student communication will be sent via TAMU email accounts (<http://gateway.tamu.edu>) unless you provide a preferred alternate email address.

Technical Requirements

To ensure successful participation, students must have access to:

- A computer that is less than 4 years old;
- For optimal viewing of course presentations, please use Mozilla Firefox
- Reliable high-speed Internet connection (cable/DSL or better) with an updated browser;
- Software such as Microsoft Word, PowerPoint & Excel 2003-2013 or equivalent;
- Common plug-ins (e.g., Adobe Reader, Flash Player, virus protection, etc.); and
- Microphone and speakers.

Software is available to students at a discounted price through the Texas A&M Software Center, available at <http://software.tamu.edu>

Please contact Prabha Vasudevan at prabha@otsc.tamu.edu, if you have problems accessing course materials.

Course Schedule

Week (Dates)	Topics	Assignments/Due Dates
Unit I – Laboratory Quality System Structure		
1	<i>Laboratory Quality Systems-Overview; Laboratory Standards</i>	<i>Self-Introduction – Due TBD</i> <i>Discussion #1 – Due TBD</i>
2	<i>ISO 17025 Requirements; Laboratory Accreditation</i>	<i>Homework #1 – Due TBD</i>
Unit II – Laboratory Quality Control Techniques		
3	<i>Quality Control Techniques</i> <i>The Big Three</i> <ul style="list-style-type: none"> • <i>Traceability</i> • <i>Proficiency Testing</i> • <i>Uncertainty</i> 	<i>Discussion # 2 – Due TBD</i> <i>Homework #2 – Due TBD</i>
4	<i>Quality Control Procedures</i> <ul style="list-style-type: none"> • <i>Chain of Custody</i> • <i>Control of Non-conforming work</i> <i>Recording and Reporting for Quality Assurance</i> 	<i>Homework #3 – Due TBD</i>
5	<i>Statistical Process Control</i>	<i>Homework #4 – Due TBD</i> <i>Discussion # 3 – Due TBD</i>
Unit III – Method Validation		
6	<i>Validation of Analytical Procedures</i>	<i>Discussion #4 – Due TBD</i>
7	<i>Validation of Microbiological Procedures & Chemical Procedures, Spectroscopic Procedures and Rapid Methods</i>	<i>Homework #5 –Due TBD</i>
8	<i>Validation of Spectroscopic Procedures and Rapid Methods</i>	<i>Discussion #5 – Due TBD</i>
Unit IV – Laboratory Quality Management		
9	<i>Concept of Quality Management; Technology Strategy; Budgeting; Benchmarking</i>	<i>Homework #6 – Due TBD</i>
10	<i>Laboratory Networks ; Laboratory Safety; Risk Assessment</i>	<i>Discussion #6 – Due TBD</i>

University Policies

This section outlines the university level policies that must be included in each course syllabus. The TAMU Faculty Senate established the wording of these policies.

Attendance Policy

The university views class attendance and participation as an individual student responsibility. Students are expected to attend class and to complete all assignments.

Please refer to [Student Rule 7](#) in its entirety for information about excused absences, including definitions, and related documentation and timelines.

Due to the participatory nature of this online class, regular log-in to the eCampus is expected. Excused absences are subject to Texas A&M rules and guidelines. For more information, visit <http://student-rules.tamu.edu/rule07>.

Makeup Work Policy

Students will be excused from attending class on the day of a graded activity or when attendance contributes to a student's grade, for the reasons stated in Student Rule 7, or other reason deemed appropriate by the instructor.

Please refer to [Student Rule 7](#) in its entirety for information about makeup work, including definitions, and related documentation and timelines.

Absences related to Title IX of the Education Amendments of 1972 may necessitate a period of more than 30 days for make-up work, and the timeframe for make-up work should be agreed upon by the student and instructor" ([Student Rule 7, Section 7.4.1](#)).

"The instructor is under no obligation to provide an opportunity for the student to make up work missed because of an unexcused absence" ([Student Rule 7, Section 7.4.2](#)).

Students who request an excused absence are expected to uphold the Aggie Honor Code and Student Conduct Code. (See [Student Rule 24](#).)

If an absence is excused, the instructor will either provide the student an opportunity to make up any quiz, exam, or other work that contributes to the final grade or provide a satisfactory alternative by a date agreed upon by the student and the instructor. The make-up work must be completed in a timeframe not to exceed 30 calendar days from the last day of the initial absence.

Academic Integrity Statement and Policy

"An Aggie does not lie, cheat or steal, or tolerate those who do."

"Texas A&M University students are responsible for authenticating all work submitted to an instructor. If asked, students must be able to produce proof that the item submitted is indeed the work of that

student. Students must keep appropriate records at all times. The inability to authenticate one's work, should the instructor request it, may be sufficient grounds to initiate an academic misconduct case" ([Section 20.1.2.3, Student Rule 20](#)).

You can learn more about the Aggie Honor System Office Rules and Procedures, academic integrity, and your rights and responsibilities at aggiehonor.tamu.edu.

Americans with Disabilities Act (ADA) Policy

Texas A&M University is committed to providing equitable access to learning opportunities for all students. If you experience barriers to your education due to a disability or think you may have a disability, please contact Disability Resources in the Student Services Building or at (979) 845-1637 or visit disability.tamu.edu. Disabilities may include, but are not limited to attentional, learning, mental health, sensory, physical, or chronic health conditions. All students are encouraged to discuss their disability related needs with Disability Resources and their instructors as soon as possible.

Title IX and Statement on Limits to Confidentiality

Texas A&M University is committed to fostering a learning environment that is safe and productive for all. University policies and federal and state laws prohibit gender-based discrimination and sexual harassment, including sexual assault, sexual exploitation, domestic violence, dating violence, and stalking.

With the exception of some medical and mental health providers, all university employees (including full and part-time faculty, staff, paid graduate assistants, student workers, etc.) are Mandatory Reporters and must report to the Title IX Office if the employee experiences, observes, or becomes aware of an incident that meets the following conditions (see [University Rule 08.01.01.M1](#)):

- The incident is reasonably believed to be discrimination or harassment.
- The incident is alleged to have been committed by or against a person who, at the time of the incident, was (1) a student enrolled at the University or (2) an employee of the University.

Mandatory Reporters must file a report regardless of how the information comes to their attention – including but not limited to face-to-face conversations, a written class assignment or paper, class discussion, email, text, or social media post. Although Mandatory Reporters must file a report, in most instances, you will be able to control how the report is handled, including whether or not to pursue a formal investigation. The University's goal is to make sure you are aware of the range of options available to you and to ensure access to the resources you need.

Students wishing to discuss concerns in a confidential setting are encouraged to make an appointment with [Counseling and Psychological Services](#) (CAPS).

Students can learn more about filing a report, accessing supportive resources, and navigating the Title IX investigation and resolution process on the University's [Title IX webpage](#).

Statement on Mental Health and Wellness

Texas A&M University recognizes that mental health and wellness are critical factors that influence a student's academic success and overall wellbeing. Students are encouraged to engage in proper self-care by utilizing the resources and services available from Counseling & Psychological Services (CAPS). Students who need someone to talk to can call the TAMU Helpline (979-845-2700) from 4:00 p.m. to 8:00 a.m. weekdays and 24 hours on weekends. 24-hour emergency help is also available through the National Suicide Prevention Hotline (800-273-8255) or at suicidepreventionlifeline.org.