



**On-line Course on Laboratory Quality Systems  
(February 2 – April 20, 2026)**



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Texas A & M AgriLife Research and COMESA invites applications for participation in an online course entitled '*Laboratory Quality Systems*', offered by Texas A&M University (TAMU).

**Deadline for submission of the application**

January 26, 2026

**Minimum education requirement**

Bachelors (BSc) in Animal Science/Biochemistry/Chemistry/Food Science or related field.

**Other essential requirements**

Candidate must be employed and responsible for the laboratory operation and analyses.

**Technology requirements**

- A computer that is less than 4 years old;
- 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, virus protection, etc.); and
- Microphone and speakers.

**Costs**

Under a recent MOU between COMESA and Texas A&M AgriLife Research, no participation fee will be charged for candidates or the organization from COMESA countries.

**Application submission procedure**

Submit application by email to Mukayi Musarurwa (Dr.) ([MMusarurwa@comesa.int](mailto:MMusarurwa@comesa.int)) with the following:

1. A-1 page letter explaining your motivation for taking this course and how you will apply the knowledge you will gain in you laboratory. Your letter should include:
  - First name
  - Last name
  - Phone number
  - Email address
2. A letter of time and resource commitment from your Director/Head of your organization with his/her signature indicating access to work internet and time to view materials and complete assignments.

**Applicant notification**

Successful candidates will be informed of their selection on or before January 31, 2026. Selection will be based on the requirements listed above, the motivation letter from the candidate, and the letter from the Director/Head of the institution in which the candidate is employed. Spaces in the course are limited. **You will not be admitted if you do not submit both the documents described above.**

## COURSE DESCRIPTION

### Overview

The course will be in **English**. The course will address, among others, the following main topics:

- Ensuring Validity and Reliability
- Laboratory Procedures
- Quality Assurance: Procedures, Tools & Methods
- Laboratory Management

The course will also cover quality systems and method development, ISO 17025:2017 standard and accreditation, ensuring the integrity of procedures used in laboratory processes, chain of custody, information management, international laboratory standards, regulatory requirements for laboratory operation and bio-security precautions

### Time Commitment

About 8 – 10 hours per week for 10 weeks (See Schedule Below)

### Course Tools

All course materials and activities will be presented via a course website. Details will be provided to participants before the start of the course.

### Course Content

Weekly materials are presented using a variety of formats, including online narrated power point slide presentations and videos. Weekly course assignments, conducted as a discussion or homework assignment, will assist in the participant's understanding of concepts. These include, but are not limited to, statistical process controls, developing standard operating procedures (SOPs), corrective/preventive actions, and methods of validation.

### Class Readings

All readings will be available on the course website in .pdf format.

### Grading

Grades will be determined as follows:

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

Due to the participatory nature of this web-based class. Completion of the course assignments with a score  $\geq 70\%$  for each assignment is required to receive a certificate. Participants will receive a certificate upon successful completion of the course

<b>Instructor information</b> Dr. Tim Herrman Professor, State Chemist and Director Texas A&M University, USA <a href="mailto:tjh@otsc.tamu.edu">tjh@otsc.tamu.edu</a>	<b>Course Coordinator</b> Prabha Vasudevan Education/Outreach Coordinator Office of the Texas State Chemist, USA <a href="mailto:prabha@otsc.tamu.edu">prabha@otsc.tamu.edu</a>
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**Course Schedule**

<b>Week (Dates)</b>	<b>Topics</b>	<b>Assignments/Due Dates</b>
<b>Unit I – Laboratory Quality System Structure</b>		
<b>1</b> February 2 – 8, 2026	Laboratory Quality Systems-Overview; Laboratory Standards	Self-Introduction – Due February 6, 2026 Discussion #1 – Due February 9, 2026
<b>2</b> February 9 – 15, 2026	ISO 17025 Requirements; Laboratory Accreditation	Homework #1 – Due February 16, 2026
<b>Unit II – Laboratory Quality Control Techniques</b>		
<b>3</b> February 16 – 22, 2026	Quality Control Techniques The Big Three <ul style="list-style-type: none"> <li>• Traceability</li> <li>• Proficiency Testing</li> <li>• Uncertainty</li> </ul>	Discussion # 2 – Due February 23 ,2026 Homework #2 – Due February 23 ,2026
<b>4</b> February 23 – March 1, 2026	Quality Control Procedures <ul style="list-style-type: none"> <li>• Chain of Custody</li> <li>• Control of Non-conforming work</li> </ul> Recording and Reporting for Quality Assurance	Homework #3 – Due March 2,2026
<b>5</b> March 2 – 15, 2026	Statistical Process Control	Homework #4 – Due March 16, 2026 Discussion # 3 – Due March 16, 2026
<b>Unit III – Method Validation</b>		
<b>6</b> March 16 -22, 2026	Validation of Analytical Procedures	Discussion #4 – Due March 23, 2026
<b>7</b> March 23 – 29, 2026	Validation of Microbiological Procedures & Chemical Procedures, Spectroscopic Procedures and Rapid Methods	Homework #5 –Due March 30, 2026
<b>8</b> March 30 – April 5, 2026	Validation of Spectroscopic Procedures and Rapid Methods	Discussion #5 – Due April 6, 2026
<b>Unit IV – Laboratory Quality Management</b>		
<b>9</b> April 6 – 12, 2026	Concept of Quality Management; Technology Strategy; Budgeting; Benchmarking	Homework #6 – Due April 13, 2026
<b>10</b> April 13 – April 19, 2026	Laboratory Safety	Discussion #6 – Due April 20, 2026