

Advanced Analyzers INTC 2345 6A1

CREDIT

3 Semester Credit Hours (2 hours lecture, 4 hours lab)

MODE OF INSTRUCTION

Face to Face

PREREQUISITE/CO-REQUISITE:

INTC 1348 and INTC 1448

COURSE DESCRIPTION

This course covers advanced topics in composition analyzers and their sample systems. The course is designed to cultivate a comprehensive understanding of the more advanced analyzers, such as gas chromatographs, ultraviolet and infrared analyzers. This course will also cover sample systems for the analyzers, the design and theory of operation of each analyzer type, and safety procedures, along with basic troubleshooting and maintenance techniques.

COURSE OBJECTIVES

Upon completion of this course, the student will be able to:

1. Evaluate the various types of analyzers relative to the process or product analysis involved
2. Select the appropriate analyzer and/or sample system

INSTRUCTOR CONTACT INFORMATION

Instructor: Steve Champagne

Email: smchampagne@lit.edu

Office Hours: Tuesdays/Thursdays 30 minutes before/after class

REQUIRED TEXTBOOK AND MATERIALS

1. *Instrumentation 6th Edition* by Franklyn W. Kirk, Thomas A Weedon, and Philip Kirk, American Technical Publishers
 - a. ISBN number is 978-082-693-442-0
2. Scientific Calculator
3. Notebook.

ATTENDANCE POLICY

1. Missing 20% (3) or more of classes may result in the loss of two letter grades from your final semester average.
2. Missing more than 20% of a class period will count as an absence

DROP POLICY

Approved: CH 08/17/2023



**LAMAR INSTITUTE
OF TECHNOLOGY**

If you wish to drop a course, you are responsible for initiating and completing the drop process. If you stop coming to class and fail to drop the course, you will earn an “F” in the course.

COURSE CALENDAR (subject to change)

DATE	TOPIC	READINGS (Due on this Date)	ASSIGNMENTS (Due on this Date)
Week 1	Course intro/policies	None	Classwork, lab safety
Week 2	Gas Chromatography	Given in class	Lab activities
Week 3	Ultraviolet Analyzers	Given in class	Lab activities
Week 4	Infrared Analyzers	Given in class	Lab activities
Week 5	Unit 1 Review		Exam 1
Week 6	Intro to sample systems	Given in class	Lab activities
Week 7	Safety Procedures	Given in class	Lab activities
Week 8	Unit 2 Review		Exam 2
Week 9	Design of sample systems/analyzers	Given in class	Lab activities
Week 10	Configuration	Given in class	Lab activities
Week 11	Unit 3 Review		Exam 3
Week 12	Troubleshooting	Given in class	Lab activities
Week 13	Maintenance	Given in class	Lab activities
Week 14	Unit 4 Review		Exam 4
Week 15	Final Review	Given in class	
Week 16	FINAL EXAM		FINAL EXAM

COURSE EVALUATION

Final grades will be calculated according to the following criteria:

- Exams- 50%
- Labs- 30%
- Daily Assignments & Quizzes- 20%

GRADE SCALE

- 90-100 A
- 80-89 B
- 70-79 C
- 60-69 D
- 0-59 F

TECHNICAL REQUIREMENTS

The latest technical requirements, including hardware, compatible browsers, operating systems, etc. can be online at <https://lit.edu/online-learning/online-learning-minimum-computer-requirements>. A functional broadband internet connection, such as DSL, cable, or WiFi is necessary to maximize the use of online technology and resources.

DISABILITIES STATEMENT

The Americans with Disabilities Act of 1990 and Section 504 of the Rehabilitation Act of 1973 are federal anti-discrimination statutes that provide comprehensive civil rights for persons with disabilities. LIT provides reasonable accommodations as defined in the Rehabilitation Act of 1973, Section 504 and the Americans with Disabilities Act of 1990, to students with a diagnosed disability. The Special Populations Office is located in the Eagles' Nest Room 129 and helps foster a supportive and inclusive educational environment by maintaining partnerships with faculty and staff, as well as promoting awareness among all members of the Lamar Institute of Technology community. If you believe you have a disability requiring an accommodation, please contact the Special Populations Coordinator at (409)-951-5708 or email specialpopulations@lit.edu. You may also visit the online resource at [Special Populations - Lamar Institute of Technology \(lit.edu\)](#).

STUDENT CODE OF CONDUCT STATEMENT

It is the responsibility of all registered Lamar Institute of Technology students to access, read, understand and abide by all published policies, regulations, and procedures listed in the *LIT Catalog and Student Handbook*. The *LIT Catalog and Student Handbook* may be accessed at www.lit.edu. Please note that the online version of the *LIT Catalog and Student Handbook* supersedes all other versions of the same document.

STARFISH

LIT utilizes an early alert system called Starfish. Throughout the semester, you may receive emails from Starfish regarding your course grades, attendance, or academic performance. Faculty members record student attendance, raise flags and kudos to express concern or give praise, and you can make an appointment with faculty and staff all through the Starfish home page. You can also login to Blackboard or MyLIT and click on the Starfish link to view academic alerts and detailed information. It is the responsibility of the student to pay attention to these emails and information in Starfish and consider taking the recommended actions. Starfish is used to help you be a successful student at LIT.

ADDITIONAL COURSE POLICIES/INFORMATION

1. No food, drinks, or use of tobacco products in class.
2. No foul or harsh language will be tolerated
3. Turn off all Cell Phones during lectures, unless otherwise instructed by me
4. Clean up work station after you complete your lab assignments. Materials left at work station will result in 5 points deducted from that lab assignment.
5. Take care of tools and equipment used during class, blowing fuses or tripping breakers will result in a 20% deduction from Lab work.
4. Headphones may be worn only upon Instructor approval
5. Do not bring children to class.
6. No Cheating of any kind will be tolerated. Students caught cheating or helping someone to cheat can and will be removed from the class for the semester. Cheating can result from expulsion from LIT.
7. If you wish to drop a course, the student is responsible for initiating and completing the drop process. If you stop coming to class and fail to drop the course, you will earn an 'F' in the course.
8. Students must have access to, and knowledge of basic computer functions (including Blackboard)
9. Students should check Blackboard daily.
10. Internet Usage
 - a. Classroom computers have access to the internet.
 - b. Student usage of the internet will be monitored.
 - c. Proper usage of the internet will be allowed for classroom research, classwork, tests, and assignments as directed.
 - d. Any unauthorized usage of the Internet will not be tolerated.
 - e. Improper usage of the Internet, such as profanity, nudity, gambling, etc. will result in disciplinary action.
11. **There will be a 20 point penalty for each class period deducted from late work.**
12. **There will be NO make-up Exams. If you miss an Exam for any reason, you automatically forfeit your possible exemption from the Final.**
13. **Exams are timed on Exam Day, once the clock has started that is the time allowed. If you are late to class you have only the time remaining to complete the test.**