

**COURSE NUMBER: CH 114 Introduction to Forensic Chemistry CRN 41130 or 41981**

**INSTRUCTOR: Brooke Taylor**

**CLASS HOURS: MF 10:00 – 11:50 or 1:00 – 2:50 in 16/147, and 10:00 – 11:50 W or 1:00 – 2:50 in 16/161**

**OFFICE HOURS: M 3:00 to 4:00, WF 9:00 to 9:50, TR 10:00 to 11:00 in 16/244.**

**COURSE CREDIT: 4 credits**

**OFFICE LOCATION: 16/244**

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**TELEPHONE:463-3219**

**WEBSITE: <http://classes.lanecc.edu/>**

**REQUIRED TEXTS & MATERIALS: Richard Saferstein Criminalistics an Introduction to Forensic Science 9<sup>th</sup> or 10<sup>th</sup> ed., a scientific calculator and CH 114 Lab Packet available from the bookstore.**

**Course Description:** Introduction to Forensic Chemistry is designed to provide non-science majors an introduction to chemistry in a forensic context. Topics may include measurement, density, soil analysis, chromatography, organic and inorganic analysis, chemistry of fire and DNA. This course focuses primarily of the chemistry aspect of gathering scientific information in the context of forensics but will also demonstrate the interrelationships of chemistry, physics and biological sciences. Class time and the textbook provide extensive background information while the laboratory component offers hands-on activities. This course is intended to satisfy the general education lab-science AAOT requirement.

**Class Objectives:** The primary objectives of this course are to introduce you to the basic chemical concepts using forensic chemistry examples and to apply those concepts to solve problems. Secondary objectives include building your scientific literacy and positive attitude towards science. Other objectives include increasing your knowledge of scientific inquiry as it applies to forensic chemistry and providing you with a general introduction to methods of scientific thought including critical analysis of data. While the information from the course can be used in other chemistry courses, it is not primarily intended to be preparatory in nature.

**Please Note:** This course would probably be rated PG-13 by MPAA. Several topics discussed during the term are graphic in nature. Course discussions and guest speakers may involve evidence collected from violent crime scenes and/or the identification of drugs or other illegal substances. Please discuss your concerns about such topics with the instructor. Also, this is only the second time this course has been taught at LCC so flexibility is requested. Revisions may be made in the schedule as well as the labs and activities planned with prior notification.

**Student Responsibilities:** You are responsible for attending each class and lab session, completing all assignments and submitting assignments on time.

**Keys to Student Success in CH 114:**

1. Attend each class and laboratory session and come to each meeting prepared. Class time will be spent discussing readings and analyzing evidence both independently and in groups. You will also have the opportunity to ask questions during class.

2. Ask questions about material unclear to you. You may ask questions in class, by email, over the phone, in the Science Resource Center, or in office hours. I am here to help you learn. Please don't hesitate to ask questions. The course covers a great deal of very interesting material but moves at a fast pace. Ask questions when they come up, please don't wait until the day before an assignment is due.
3. Be organized.
4. Complete all assignments. Turn in your assignments on time. If you cannot attend class the day an assignment is due, you are still responsible for turning in your work on time.
5. Monitor your progress. Assignment scores and course grades will be posted throughout the term on the course website (<http://classes.lanecc.edu/>).

**Grading Policy:** Your grade in CH 114 will be based on your completion of weekly labs worth 20% to 30% of the course grade, two in class exams each worth 20% to 30% of the course grade, chapter reading guides worth 0% to 5% of the course grade (graded for completion only), as well as several small projects, activities and writing assignments worth 15% to 25% of the course grade. Students will complete a grade distribution form twice during the term (once early in the term with a second revision after the first exam). Grades will be assigned using the following breakdown:

%	100-98	97-93	92-90	89-87	86-84	83-80	79-76	75-72	71-68	67-64	63-60	59-56	<56
Grade	A+	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F

An incomplete (I) may be given if a student has completed 75% of the course work with a passing grade.

**Grade Distribution Reports:** Students will have two opportunities during the term to decide how they would like their grade distributed between the different components of the course. Labs will count between 20% and 30%, each exam will count between 20% and 30%, assignments will count between 15% and 25% and the reading guides will count between 0% and 5% of the course grade. The total must equal 100%. After the first exam, students will be able to revise their grade distribution report but will not be able to submit past due work for credit. For example if you initially set the reading guides to be worth 0% but later in the term change your mind and want them to count for 5% you can not submit the reading guides for the first four chapters late for credit. Please be sure to ask the instructor if you have questions.

**Labs:** Lab is an important and fun component of class. Labs will be scheduled for the Monday and Friday of each week, as outlined on the attached course calendar. You should plan on attending each lab session. Lab reports will be due at the beginning of the lab session the following week. One lab will be dropped. You should keep this free lab for emergency situations. No make-up labs will be possible, no exceptions please. Students are still responsible for the material covered in labs they choose not to attend. Students choosing to work in groups of two (at most) may turn in one group lab report. Each member of the group will receive the same grade. Students are expected to follow all safety instructions. Students acting in an unsafe manner will be asked to leave lab and will earn no credit for that activity. Food and drink are strictly prohibited in the labs. Lab will be worth from 20% to 30% of your course grade.

**Exams:** There will be two in class exams. Exam material will be based on class discussions, chapter reading guides, labs, and article discussions. Each exam will contain a variety of question types including but not limited to multiple choice, short-answer, essay/show your work calculations. Each exam will be worth from 20% to 30% of your course grade.

**Writing Assignments, Activities and Projects:** Several small writing assignments and article reviews will be completed during the term along with other small activities. Other assignments will be developed during the term and due dates mutually agreed upon between the instructor and the class. These assignments will be worth from 15% to 25% of your course grade.

**Chapter Reading Guides:** Each chapter assigned in the text will have a set of reading guide questions based on the learning objectives listed in the text. The questions may be turned and graded for completion and will be worth between 0% and 5% of your course grade. These questions will serve as discussion topics in class and study guides for the in-class exams.

**Extra Credit:** Students completing all labs may earn up to 20 points extra credit towards the lab portion of your grade up to the maximum number of lab points possible. Additionally, each exam will contain some extra points. No other extra credit options will be available. College grades are assigned for points earned in class, not for extra credit.

**Make-up Policy:** No make-up labs will be permitted. One lab will be dropped. Students are still responsible for the material covered in lab. Late assignments will lose 25% per class day. If you are unable to attend an exam because of an emergency situation, you must notify the instructor before hand. You may notify me by phone, email, a note under my office door or through the division office. A make up exam may be arranged at the discretion of the instructor. Please do everything you can to avoid having to reschedule exams or quizzes.

**Eating/Drinking Policy:** Eating and drinking is never allowed in the lab (not even from water bottles). In classrooms covered reusable cups or resealable containers must be used for beverages.

**Academic Integrity:** Cheating in any of its forms will not be tolerated. The minimum penalty for a first offense will be zero for the assignment. Any subsequent act will result in a failing grade (F) for the course.

**Students with Disabilities:** If you need support or assistance because of a disability, you may be eligible for academic accommodations through Disability Resources. For more information, contact Disability Resources at (541) 463-5150 (voice), or 463-3079 (TTY), or stop by Building 1, Room 218.

**In Case Of MEDICAL or SECURITY EMERGENCIES, call 541 463-5555**

**Science Resource Center:** The SRC provides services to assist students in getting the most from their classes. You may study in groups, get assistance from tutors and instructors, check out textbooks and optional materials, take exams (with instructor permission), pick up course materials, use computers, etc all in the SRC. SRC hours for fall term are: M-F 7:30am-3pm week 1, **M-R 7:30am-6pm and F 7:30am-3pm** beginning week 2. Saturday hours after week 2 are 9am-3pm. During Finals week, hours are M-W 7:30am-6pm, R 7:30am- 3pm and F 7:30am-noon. If you use the SRC this term please register for the non-credit, no tuition CRN 44347. It's free!

**Dates of Interest:**

April 3 <sup>rd</sup> by 11:59 PM	Deadline to drop fall term classes and receive a <u>full</u> refund.
May 3 <sup>rd</sup> at 7:00 AM	Advance Registration begins for summer term
May 17 <sup>th</sup> at 7:00 AM	Advance Registration begins for fall term
May 20 <sup>th</sup>	Deadline to make schedule changes (change grade option, register or withdraw)
June 2 <sup>nd</sup> by 11:59 PM	Advance Registration Prior Term Payment Due (Pay Spring term bill to stay enrolled in Summer Term classes)



**Please note: the attached schedule is subject to change if needed. Any changes to exam dates will be announced in class and every effort will be made to contact any student absent at time of announcement. Also, the textbook sections and page numbers listed may not include all possible areas in the text the material is covered. If you find other sections of use please let the class know.**

Week	Day	Topic	Reading for 10 <sup>th</sup> edition of text	Due Date
1	M	No Class.		
	W	Course Introduction, Scientific Method, CSI Effect, Metric System, Physical Properties	3 to 25, 93 to 103	CSI Effect Articles
	F lab	Lab Safety, Measurements and Density	Packet pp. 3 and 23	
2	M lab	Refractive Index of Glass, Metric System	Packet p. 27, packet p. 11	
	W	Physical Evidence/Glass and Soil	60 to 61, 103 to 114	Writing A, RG 1
	F lab	Determination of Glass Density	Packet p. 29, packet p. 14	Measurement Lab
3	M lab	Analysis of Soil by Density Gradient	Packet p. 35	Refractive Index Lab
	W	Elements and Compounds, Analytical Techniques	118 to 141, packet pp. 16	RG 4
	F lab	Observing Chemical Reactions	Packet p. 33	Glass Density Lab
4	M lab	Thin Layer Chromatography	Packet p. 39	Soil Density Lab
	W	Analytical Techniques, Spectrophotometry, Inorganic Analysis	118 to 141, 149 to 152	Writing B
	F lab	Identification of Drugs and Poisons	Packet p. 46	Observing Rxns Lab
5	M lab	Spectroscopy, Atoms of Crime	Packet p. 42, packet p. 18	RG 5, TLC Lab
	W	Inorganic Analysis, Case study, catch up and exam review	144 to 161, Case of Sarah Payne	
	F lab	<b>Exam #1 Chapters 1, 4, 5 and 6</b>		RG 6.
6	M	Thermite Demo, Chemistry of Fire	353 to 369, 373 to 387	ID of Drugs Lab
	W	Forensic Aspects of Arson, case study	353 to 369, 373 to 387	Spectroscopy Lab
	F lab	No class, Spring Inservice		
7	M lab	Identification of Unknowns by IR	Packet p. 49	
	W	Nature of Blood, Principles of Heredity	241 to 253	RG 11
	F lab	Blood Identification and Typing	Packet p. 53	
8	M lab	Visible Spectroscopy	Packet p. 57	IR Lab
	W	Blood, DNA	241 to 253, 265 to 278	Writing C
	F	Gel Electrophoresis Practice, Druid Dracula case	handout	Blood Lab
9	M	Isolation and Analysis of DNA	Packet p. 62	Visible Spec. Lab
	W	DNA	265 to 290	RG 12
	F lab	No lab.		

10	M	<b>Memorial Day, No class!</b>		
	W	DNA	265 to 290	RG 13
	F lab	Isolation and Analysis of DNA	Packet p. 62	DNA Lab
11	M	<b>Exam #2 Chapters 10, 11, 14 and 15</b>	<b>10:00 to 11:50</b>	<b>Pick one time!</b>
	W	<b>Exam #2 Chapters 10, 11, 14 and 15</b>	<b>12:00 to 1:50</b>	