

## ***C118: Principles of Chemistry and Biochemistry II*** ***Syllabus Fall 2009***

### **Instructors:**

Professor Jill Robinson

Office: Chemistry Building Room A314

Office Hours: Tues.10-11 AM and Thurs. 1-2 PM

E mail: [jirobins@indiana.edu](mailto:jirobins@indiana.edu)

Phone: (812) 855-6601

Professor Amar Flood

Office: Simon Hall, SI-002A

Office Hours: Tues 1-2PM and Wed 11AM-12PM

E mail: [aflood@indiana.edu](mailto:aflood@indiana.edu)

Phone: (812) 856-3642

Professor Flood will teach the course during the first half of the semester and Professor Robinson will teach the second half, starting from October 19.

### **Course Materials:**

1. Chemistry in Context, Applying Chemistry to Society, 6th edition, Eubanks, Middlecamp, Pienta, Heltzel, McGraw Hill, 2008.
2. Safety Goggles
3. Scientific calculator
4. Permanently bound laboratory notebook.
5. Student Clicker (eInstruction Version)  
eInstruction enrollment code or coupon code from Bookstore. Other (and cheaper) option is to pay with credit card when you register your clicker with eInstruction online.

### **Course Overview**

This course is designed to show the connections between chemical principles and important social, political, economic and ethical issues. Topics include polymers, drug design, nutrition, genetic engineering, global warming, and alternative fuels. The course emphasizes the application of basic chemical concepts by introducing the material within the contextual framework of these issues. The lectures and discussion sections will focus on applications of basic chemical principles and problem solving strategies. In the laboratory portion of C118, students will investigate problems related to course content. For example, questions such as “Is my food genetically modified?” and “Is the ozone level in the air safe?” will be answered.

### **Course Website**

The class website is <http://www.chem.indiana.edu/> You will find useful information about the class on this website such as; lecture notes, homework sets, answer keys, exam rooms, and grades. Check this website often!

## **Academic Integrity**

You are expected to observe high standards of intellectual integrity and honesty. Plagiarism and cheating will be taken seriously in this class by the professor and by the AIs. Academic dishonesty includes cheating on exams or quizzes, presenting, as your own, work that is *not* in fact your own, whether you take it from another student, from a library book, from the Web or wherever. It also includes allowing your *own* work to be misrepresented in this way as some other student's work. Cleverly rewording someone else's work, in order to disguise what you are doing is plagiarism, if the thoughts behind it are not your own. Please be aware that laboratory reports are to be an individual effort and that students collaborating on the write up of the experiments are considered guilty of cheating. When in doubt, *always* cite your sources!

You are advised to read the *Code of Student Rights, Responsibilities and Conduct* especially Part III: "Student Misconduct" and Part IV: "Student Disciplinary Procedures." It is also available on-line at <http://dsa.indiana.edu/Code/index1.html>. The standard penalty for cheating and/or plagiarism in is a grade of F in the entire course. All cases of academic misconduct will be immediately reported to the Dean of Students as well as the Dean or Director of the student's school.

## **Preparation for Emergency Situation: Swine Flu**

As you have probably heard, there is a possibility that instruction in this class will be interrupted by an outbreak of the H1N1 ("swine") flu, either because a large number of class members are ill and unable to attend class, or because I am ill and unable to attend class.

The most important thing is that, if you begin to have flu-like symptoms, follow the advice of physicians and health officials – if it means staying home and missing class, that is what you should do until you have recovered.

If the class is interrupted, here is what will happen:

(1) We (Flood or Robinson) will contact you via e-mail from the Oncourse website and an announcement on the C118 Course Website.

(2) We will continue to work through the syllabus as planned, but instead of holding class, we will post the 'full' notes from the class on the C118 website. We will try to "hold" online lectures – more information to follow.

(3) Short writing assignments based on the end-of-chapter questions will be assigned. You will have one week to respond to each assignment (email to AI), unless you yourself are ill, in which case please tell me and I will grant an appropriate extension.

(4) These writing assignments will be used for the interrupted part of the course.

(5) We will assess how to deal with any laboratory days that might be missed. Options that will be considered include providing you with model lab results and asking for you to complete the lab report, providing you with the lab report and asking you to address any discussion questions.

(6) The examinations will proceed as planned.

In summary, we will adjust grading policies in a fair manner for the students depending on the circumstances.

## Course Format

### Lecture:

Your attendance at lecture is vital to your success in the course. During lecture we will discuss principles, work problems, and present demonstrations. You should read the textbook assignments prior to lecture and take clear notes during lectures. During lectures you will be given the opportunity to answer clicker questions that are worth a total of 50 points over the course of the semester.

### Clicker grades:

Correct answers	Points
>70%	50
>60%	40
>50%	30
>40%	20
>30%	10

### Discussions:

Discussion sections in C118 play a central role in helping students master the material. Learning and understanding chemistry takes a lot of practice which is why it is important that you attend the scheduled discussion sections each week. During discussion, you will work with the AI and your fellow classmates to work on problem solving skills. Homework assignments will be distributed and collected during discussion. Homework is due on a weekly basis. To accommodate emergency absences, you may miss two discussion sessions without penalty.

### Laboratory:

In the laboratory you will have the opportunity to experience directly some of the principles discussed in the lecture and textbook. You will practice basic laboratory techniques and be given the opportunity for hands-on exploration of interesting scientific problems. The laboratory is extremely important in gaining an understanding and appreciation of chemistry. If you are absent and/or do not turn in 3 lab reports, you will automatically fail the entire course.

### Laboratory Reports:

Details on writing the lab report will be provided on a separate handout. The report is due one week from the day the experiment was completed. Most experiments will require a worksheet style report and three experiments will require a typed lab report in the style of a scientific journal. Typed lab reports must be submitted through [www.turnitin.com](http://www.turnitin.com) before attending the lab the following week. The last page of the syllabus lists which experiments require worksheets and full typed reports. Details on lab report format will be discussed during lab lecture.

Absence Policy:

An **unexcused** absence is an automatic zero for the exam or quiz or assignment missed. An excused absence may be granted by the instructor. If you anticipate that you will have an excused absence on the day an exam or quiz is scheduled (university function or religious holiday, etc.) you are required to make arrangements 1 week in advance of the exam, quiz or assignment date.

**There are no make-up exams, quizzes, or laboratories for any reason. You will not be able to switch lab sections in order to make up labs.**

## Grades

### Lecture

Exams	550
(4 Exams @150 points each)	
Clicker Points	50
(includes lab lecture)	
Discussion Assignments	50
12 @ 5 pts each, drop 2 lowest	

### Laboratory

Lab Reports	300
3 Full Reports @ 50 pts.	
7 worksheets @ 25 pts., drop lowest	
Pre-lab Quiz	100
12 @ 10 pts each, drop 2 lowest	

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<b>Total</b>	<b>1050 Points</b>
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## Final Course Grade

Grades will be determined at the end of the semester based on both your lecture and laboratory performance.

A tentative grading scale is shown below. We reserve the right to adjust the grade requirements to slightly lower numbers depending on class averages. Plus and minus grades will be determined at the end of the semester. Please note that a 90% represents the lowest of the A range (therefore the lowest A-)

A	>90%
B	>80%
C	>70%
D	>60%
F	<60%

## Policy on Regrading

Any request to have any material (lab, exam, quiz, etc) regraded must be made to your AI or Professor within 1 week of the date when the item was turned back to you and/or posted on CALM. There will be no exceptions to this rule, so be sure to check your grades on CALM regularly to verify they are correct.

## Sources of Help

- Professor's office hours (listed on the first page of syllabus)
- Associate Instructor's office hours are in the General Chemistry Resource Center, C046. Any C118 AI should be able to help you, even if they are not your own specific AI. The AI office hours will be announced in class and posted on the course website.
- Group study among your fellow students is often very helpful. Try to get to know your fellow students since you will be spending lots of time with them during this fast-paced summer session. Feel free to use the tables in C046 for an area to study. There are computers with printers available for chemistry students to use in C046 and C006.
- On-line quizzes for the textbook. [www.mhhe.com/cic](http://www.mhhe.com/cic)

Students can find policies regarding drop/adds, incompletes, drop dates, and student etiquette at the [Policies for Students](#) link on the course homepage.

## Tentative Lecture Outline

This syllabus is a work in progress and may be updated over the course of the semester. Please consult the course web page often for the most up-to-date outline reflecting all changes.

Date	Lecture Topic	Reading	Laboratory
M 8/31	Course Introduction		Labs do not meet
T 9/1	No lecture		
W 9/2	Electrochemistry:	8.1-8.3	
F 9/4	Electrochemistry	8.4-8.6	
M 9/7	Electrochemistry	8.7-8.10	Two Oxidation States of Vanadium
T 9/8	Lab lecture: Two Oxidation States of Vanadium		
W 9/9	Plastics and Polymers	9.1-9.2	
F 9/11	Plastics and Polymers	9.3	
M 9/14	Plastics and Polymers	9.4, 9.5	Preparation of a Hydrogen Fuel Cell
T 9/15	Lab lecture: Hydrogen Fuel Cell		
W 9/16	Plastics and Polymers	9.6- 9.8	
F 9/18	Manipulating Molecules and Drug Design	10.1, 10.2	
M 9/21	Lab lecture: Silicone Polymer		Preparation of a Silicone Polymer (Bouncing Putty) and Polystyrene
T 9/22	In class question and answer for exam 1 <b>Exam 1 from 7:15-9:15 PM</b>		
W 9/23	Manipulating Molecules and Drug Design	10.3, 10.4	
F 9/25	Manipulating Molecules and Drug Design	10.5	
M 9/28	Manipulating Molecules and Drug Design	10.6, 10.11	Lab: Combinatorial Synthesis <b>Full Lab Report</b>
T 9/29	Lab lecture: Combinatorial Synthesis		
W 9/30	Nutrition	11.1	
F 10/2	Nutrition	11.2, 11.3	
M 10/5	Nutrition	11.4	Iron Analysis of Total Cereal
T 10/6	Lab lecture: Iron Analysis of Total Cereal		
W 10/7	Nutrition	11.5, 11.6	
F 10/9	Genetic Engineering and the Chem. of Heredity	12.1	
M 10/12	In class question and answer for Exam 2		Genetically Modified Foods Week 1
T 10/13	Lab Lecture: Genetically Modified Foods <b>Exam 2 from 7:15-9:15 PM</b>		
W 10/14	Genetic Engineering and the Chem. of Heredity	12.2, 12.3	
F 10/16	Genetic Engineering and the Chem. of Heredity	12.4, 12.5	
M 10/19	Atmospheric Chem. (Air and Atmosphere)	1.1-1.5	Genetically Modified Foods Week 2
T 10/20	Lab lecture: Genetically Modified Foods		
W 10/21	Air Pollution	1.10-1.11	
F 10/23	Air Pollution	1.12-1.13	<b>Full Lab Report</b>
M 10/26	Acid Rain	6.1-6.6	Analysis of Cigarette Smoke
T 10/27	Lab lecture: Cigarette Smoke		
W 10/28	pH calculations	handout	
F 10/30	pH calculations		
M 11/2	Lab lecture: UV light		What protects us from UV light?
T 11/3	In class question and answer for Exam 3 <b>Exam 3 from 7:15-9:15 PM</b>		
W 11/4	Ozone Layer	2.8-2.12	
F 11/6	Ozone Layer		
M 11/9	Global Warming	3.1	pH and Alkalinity of Natural Waters (titrant standardization)
T 11/10	Lab lecture: pH and alkalinity of natural waters		
W 11/11	Global Warming	3.5,3.8	
F 11/13	Global Warming	3.9-3.12	<b>Full Lab Report</b>
M 11/16	Nuclear Chemistry	7.1-7.4	pH and Alkalinity of Natural Waters
T 11/17	Lab lecture: pH and alkalinity of natural waters		
W 11/18	Nuclear Chemistry	7.5-7.7	<b>Full Lab Report</b>
F 11/20	Nuclear Chemistry	7.9	

M 11/23 T-F	Nuclear Chemistry No class- Thanksgiving Break	7.12	Labs do not meet
M 11/30 T 12/1 W 12/2 F 12/4	Green Chemistry Lab Lecture: Radioactive Decay Green Chemistry Green Chemistry		Radioactive Decay
M 12/7 T 12/8 W 12/9 F 12/11	Green Chemistry Green Chemistry In class question and answer for exam 4 No class		Meet in lab to turn in final report.
F 12/18	Final Exam Week <b>Exam 4 from 2:45-4:45 PM</b>		

## Policies and Guidelines for Clicker Use

**Welcome to C118!** In order to stimulate the learning experience and provide immediate feedback to students and instructors regarding understanding of material, instant response clickers will be used this semester. Each student is required to purchase a single clicker for use in the regular and laboratory lectures. Clickers may be obtained at the University Bookstore for a nominal price and will be unique for each student. Please be certain to purchase the clicker manufactured by **eInstruction**. Over the course of the semester, responses will be collected and used to assess student performance in relation to various topics discussed in the class.

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### **CLICKER POLICIES**

Please read and note well the clicker policies that will be in effect for C118 during the Fall 2009 semester:

1. **It is the responsibility of the student to ensure proper clicker operation.** It is strongly advisable to carry a spare set of batteries (the clickers use standard AA batteries that may be purchased at the Union) and to be aware of battery life. Students are required to be familiar with clicker operation and registration – this information is included with your clicker upon purchase.
2. **Do not lose or damage your clicker!** These devices are easily misplaced, so take great care to keep track of its location at all times. In general, the clickers are quite robust and will function properly for a long period of time if treated well. Avoid rough treatment to keep it operating correctly. *In the event of loss, the student will be required to obtain another device from the IU Bookstore and register the new clicker via the eInstruction website.*
3. **Students are responsible for correct login procedures.** Answers submitted on alternate channels cannot be collected or graded, and students will NOT be granted credit for these responses after the conclusion of the lecture period for any reason. *Turn your clicker on a few minutes before class begins to allow ample time for your device to properly join.*
4. **Responses will be GRADED and posted on CALM.** Questions from each lecture will be graded for correctness – *simply entering a response will not guarantee credit.* Lecture participation points will be posted periodically on the CALM website.
5. **Questions will be TIMED.** Many questions will have a response time limit. Be diligent and aware of time constraints – responses entered after the timer expires will NOT be recorded or graded.
6. **Questions will be posed at EACH lecture.** For this reason, attendance is imperative!
7. **If a clicker malfunctions DURING LECTURE:** A student may submit answers on paper for grading, but *MUST SHOW ALL WORK* toward solution of the problem. *Submissions showing no logical path to the final answer will NOT BE GRADED. This is intended as a stopgap measure and not as a routine procedure spanning the entire semester.* The student should inform the instructor at the conclusion of the lecture in which the clicker has malfunctioned .
8. **Academic Misconduct applies to clicker use in this class.** Students found to be using multiple clickers will be guilty of academic misconduct and will be dealt with SEVERELY. ***Misuse of clickers runs the risk of FAILURE IN THIS COURSE.***

## **CLICKER REGISTRATION**

The following section covers correct registration of the clicker. Be certain to read and follow the steps carefully:

Class name: C118Fall09

Class key: **J52932J461**

### **You will need:**

- ✦ Class Key (provided above)
- ✦ Connection to the Internet
- ✦ Enrollment Code/coupon (from your *new* McGraw Hill textbook or your school bookstore) **OR**
- ✦ Method of Payment (Credit card or personal check)

### ***Enrolling through CPSONline***

If you enroll through CPSONline, you will first need to set up a CPSONline account. ***It is cheaper to register online with a credit card rather than purchase an activation code from the IU Bookstore.***

#### **Create an Account**


1. Go to [www.einstruction.com](http://www.einstruction.com).
2. Click on the **Students** link at the top left of the window.
3. Select your school or university from the drop-down menu.
4. Click **Choose Site**.
5. Enter your serial number in the space provided. You can find your serial number on your LCD screen when you turn on your pad: if your pad does not have an LCD screen, your serial number is on the back of the pad, under the battery cover.
6. Click **Create Your Account**.
7. Create a CPSONline Username (can be anything you wish) and Password and fill in your contact information. Click **Submit** to create your account.

You've now created a CPSONline account. You can use your CPSONline username and password to login anytime to CPSONline. Now you can enroll your pad in your class.

#### **Enroll in a Class**

1. Click **Yes** to enroll immediately in your class.
2. Enter your **Class Key** in the space provided. If you have a Code, enter it in the **Code** box. Note that a Code is not required.
3. ***IMPORTANT: The student ID field MUST be filled in with your IU email address MINUS the "@indiana.edu" string. For example, the student ID for Professor Robinson would be jirobins. DO NOT use your 10 digit IU student ID number!!!***

### Helpful Information

- » Don't see your pad's serial number? [Add a pad to your account.](#)
- » [Where's my serial number?](#)
- » If you have purchased a new McGraw-Hill textbook for use with CPS, your code will be packaged with your textbook.
- » Coupon and Enrollment Codes appear in your textbook like this ...  

- » The ISBN number is not your code.
- » Questions or problems? Please contact [Technical Support.](#)

## Enroll in a class

Please enter the following pieces of information:

\* **Class Key :**

\* **Confirm Class Key:**

\* **Serial Number :**

**Student ID:**

If you have an **enrollment code** or a **coupon code**, please enter it below. These codes can be found in McGraw-Hill text books or may be purchased through your campus bookstore.

**Code (optional):**

I have read and agree with the [Student Refund Policy](#).

\* required

[Back to Account Information](#)

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Note that this **IS NOT** the 10 digit IU student ID number!!

4. Click **Submit** and choose your payment options. Click **Continue**.
5. Fill in your billing information and click **Continue**.
6. To join an additional CPSONline class, click the **Enroll in a class** button from the main menu.
7. Once you have joined the class, you should be able to view your enrollment to double check your entries:

### Helpful Information

» Questions or problems? Please contact [Technical Support.](#)

## Account Information

### My Current Classes

Choose your class below to login. If you need to enroll into a class, click on 'Enroll In A Class' below.

(INDIANA UNIVERSITY)

Class Name	Online Class Ends	Pad ID	Pad Serial Number	Student ID
<a href="#">Demo</a>	08/11/2007	1	r107da7 <a href="#">change</a>	tstone <a href="#">change</a>

[Update My Profile](#) | [Manage My Pads](#) | [Enroll In A Class](#) | [Change University](#) | [Logout](#)

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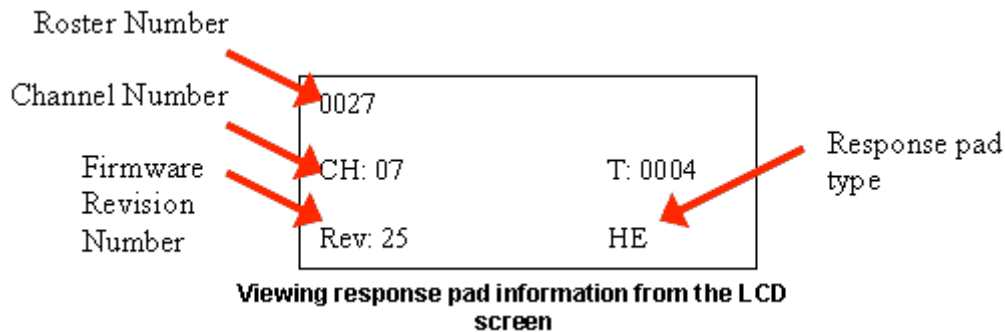
8. Once you have finished enrolling in all of your classes, click **Log Out**. So that CPSONline properly records your information, log out of CPSONline.

**NOTE:** If you enroll in more than one class using CPS, your response pad may have a different assigned number for each class. Note your assigned response pad number after you enroll for each class, and use the reminder emails from eInstruction to keep track of your information.

### Using CPS<sub>RF</sub> in your class

The eInstruction response pad is easy to use with CPS. Use the information below to learn how to use the buttons on the pad. If you have any questions, log onto [www.einstruction.com](http://www.einstruction.com) and use the **Customer Support** menu option. Type in your name and enter the live chat room for immediate help. You can also reach Technical Support at 888.333.7532.

- ✦ **Power** – turn the response pad on or off by pressing the **PWR/JOIN** button.
- ✦ **Join** – the response pads automatically search for a class roster to join whenever you turn on the pad.
  - **Initiate Join** – to have the response pad begin searching for a class roster to join, turn on the response pad and press the **PWR/JOIN** button.
  - **Manually Join** – to manually join a class, turn on the response pad and press the **PWR/JOIN** button twice. *Join:* appears on the LCD screen. Type in the channel number for the class roster you would like to join, and press **Send**.
- ✦ **Use Negative Numbers** – make a numeric response positive or negative by pressing the **+/-** button.
- ✦ **Enter Equations** – create equations by entering symbols into your response with the **Sym** button. You can include the following symbols: X, Y, =, (, ), . (decimal), + (plus operator), - (minus operator), / (division operator), \* (multiplication operator), (space)
- ✦ **View Response Pad Information** – to view the response pad channel, roster number, and firmware version, turn the pad on and press the **<** button.



- ✦ **View Serial Number** – to view the serial number for your response pad, simply press the **PWR/Join** button to turn on the response pad. The serial number displays in the LCD screen as your response pad searches for a class roster to join. Your serial number will begin with “r1...”.
- ✦ **Adjust LCD Screen Contrast** – to adjust the LCD screen contrast, press the **>** button. Use the **A1** button to decrease the contrast and the **C3** button to increase contrast.