JOHN JAY COLLEGE OF CRIMINAL JUSTICE
The City University of New York
524 W. 59th Street, New York, NY 10019

NSC 107 LECTURE SYLLABUS **Science in Modern Society**
SPR 2013 ⇨ M/W 3rd Period for Sects. 01-04 ◆ 4th Period for Sects. 05-08 ◆ 6th Period for Sects. 09-11
Text: Natural Science Revised (2010) 5th Edition **Web Site: http://jjcweb.jjay.cuny.edu/wbailey**
Lecturer: W. Bailey (wbailey@jjay.cuny.edu) Rm. 03.77A ✆ (212) 237-8943 / Office Hrs. By Appointment M/W 2 pm to 4 pm

NSC 107 – Introduction to Science in Society

Credits/hours: 6 hours: 3 hours lecture, 1 1/2 hours recitation, 1 1/2 hours laboratory; 4 credits
Course Summary: A course in the basic principles of atomic and molecular physical science, including concepts of measurement and data collection, the scientific method, the structure of matter and living organisms, with emphasis on the relationships between science and society.

Learning Outcomes

Reasoning

- Explain the basic steps of problem solving.
- Critically evaluate statements of "fact" or discovery in the media.
- Recognize science as a creative process.
- Differentiate between data analysis and interpretation.
- Discriminate between scientific and non-scientific resources.
- Judge the merit of scientific vs. pseudo-scientific conclusions.

Knowledge

- Collect, analyze and interpret data.
- Quantify uncertainty in measurements.
- Describe the basic components of a scientific investigation, and contrast this with non-scientific statements.
- Correctly use basic terminology in chemistry and biology.
- Recognize basic concepts in the physical and/or biological sciences toward interpreting the nature of scientific discoveries.

Practical skills

- Demonstrate safe lab practices.
- Outline the basic modes of measurement.
- Identify basic laboratory equipment and practice methods of experimentation and investigation.

Communication

- Practice forms of written and/or oral communication in the laboratory.
- Differentiate between popular and scientific writing and communication.

Prerequisites: MAT 104 or MAT 105 or the equivalent. May not be taken after CHE 108, ENV 108, FOS 108 or PHY 108.

Requirements/Course Policies

LECTURE

☑ STUDENTS ARE EXPECTED TO BE RESPECTFUL AND RESPONSIBLE IN THE CLASSROOM AT ALL TIMES.
☑ All beepers, cell phones, I-pods and other electronic devices MUST be turned off before all classes.
☑ All technical information presented in the research paper must be cited appropriately in the text and in the references section at the end of the paper. References should conform to the APA style, which can be found on the John Jay Library Web site (http://www.lib.jjay.cuny.edu/research/apastyle.pdf) or ask for a copy at the library reference desk. **For help with referencing and writing style please visit the College Writing Center located at 524 W. 59th Street on the first floor (01.68.00 to 01.68-05NB).**
☑ **THERE WILL BE NO MAKE-UP EXAMS.** IF A STUDENT MISSES EITHER EXAM 1 OR 2, THE REMAINING GRADES WILL BE CONVERTED TO **33⅓** POINTS EACH. ONLY STUDENTS TAKING THE FIRST TWO LECTURE EXAMS WILL RECEIVE AN ADDITIONAL BONUS OF 10 POINTS ON THE FINAL EXAM SCORE.

- ☑ **YOUR** PERSONAL **JOHN JAY PHOTO ID** MUST BE PRESENTED AT *ALL* LECTURE EXAMS. FAILURE TO SHOW A CURRENT **JOHN JAY PHOTO ID** OR PHOTO ID ACCEPTABLE TO THE INSTRUCTOR RESULTS IN DEDUCTED POINTS.
- ☑ STUDENTS ARE REQUIRED TO USE **#2 PENCILS** FOR ALL LECTURE EXAMS. PENCILS WILL **NOT** BE PROVIDED. POINTS WILL BE DEDUCTED IF THE INSTRUCTOR HAS TO GRADE THE SCANTRON BY HAND.
- ☑ **NO** PROGRAMMABLE CALCULATORS, CELL PHONES, iPADS, OR POCKET P.C.s (includes PDAs) ARE TO BE USED DURING EXAMS OR LAB QUIZZES.
- ☑ TO AVOID A SEVERE POINT DEDUCTION PENALTY, PLEASE ATTEND YOUR SCHEDULED LECTURE EXAM.

Required Text (includes the lab manual): *Natural Science* Revised 5th Ed. by Carpi, A. & Egger, A., Kendall Hunt, Inc., Iowa (2010). Sold at the John Jay bookstore.
TEXT ISBN: 978-0-7575-6971-5 and **LAB MANUAL ISBN:** 978-0-7575-6970-8
Course Web Site: http://www.visionlearning.com/myclassroom

GRADING SCALE:				**Score Calculation** ↓
	LECTURE EXAM 1	=	20 POINTS	**or**, your score #1 _____ × 0.20
	LECTURE EXAM 2	=	20 POINTS	**or**, score #2 _____ × 0.20
	FINAL EXAM	=	25 POINTS	**or**, final score _____ × 0.25
	LAB GRADE	=	35 POINTS	**or**, lab score _____ × 0.35
	TOTAL	=	100 POINTS	↗ **add** for total points out of 100

COURSE CALENDAR

Date	**Lecture Outline**	**Reading Assignment**
M 1/28, W 1/30 & M 2/4	The Practice of Science – Matter and Energy	▪ **Lesson 1** ⇨ pp. 1-10, **Lesson 3** ⇨ pp. 15-18, **Lesson 5** ⇨ pp. 23-25, **Lesson 6** ⇨ pp. 26-34 & **Lesson 7** ⇨ pp. 35-40 ◆ Do quizzes at the end of each lesson.
W 2/6 & M 2/11	Atomic Structure	▪ **Lesson 9** ⇨ pp. 45-48 & **Lesson 10** ⇨ pp. 49-52 ◆ Include quizzes. **Note** Quiz 10: Ques. 11 (p. 52) is on-line interactive.
W 2/13 & W 2/20 **(Follows Monday schedule)**	The Periodic Table and Chemical Reactions	▪ **Lesson 11** ⇨ pp. 53-57 & **Lesson 12** ⇨ pp. 58-61 ◆ Include quizzes.
M 2/25, W 2/27 & M 3/4	Chemical Bonding	▪ **Lesson 13** ⇨ pp. 62-68 ◆ Include quiz.
W 3/6	**EXAM 1**	
M 3/11, W 3/13 & M 3/18	Acids, Bases and The Concept of pH	▪ **Lesson 16** ⇨ pp. 77-80 ◆ Include quiz.
W 3/20 & W 4/3	Balancing Chemical Equations	▪ **Lesson 8** ⇨ pp. 41-44 & **Lesson 14** ⇨ pp. 69-72 ◆ Include quizzes. **Omit Questions 4 through 7 on p. 44 and Question 8 on p. 72.**
M 4/8 & W 4/10	Nuclear Chemistry	▪ **Lesson 17** ⇨ pp. 81-85 ◆ Include quiz. Omit Questions 6 and 7 on p. 85.
M 4/15 & W 4/17	Organic Chemistry	▪ **Lesson 24** ⇨ pp. 126-131 ◆ Include quiz.
M 4/22	**EXAM 2**	
W 4/24, M 4/29 & W 5/1	Biochemistry – The Energy Nutrients	▪ **Lesson 25** ⇨ pp. 132-135 & **Lesson 26** ⇨ pp. 136-140 ◆ Include quizzes.
M 5/6 & W 5/8	Nucleic Acids and Protein Synthesis	▪ **Lesson 28** ⇨ pp. 148-156 ◆ Include quiz.
M 5/13 & W 5/15	The Immune System and AIDS	▪ **Lecture Notes** also See on-line **Module 29** ⇨ **Immune Cells & HIV (Science Daily) link**.

ATTENDANCE
Students are expected to attend all class meetings as scheduled. Excessive absence may result in a failing grade for the course and may result in the loss of financial aid. The number of absences that constitute excessive absence is determined by the individual **lab** instructor, who announces attendance guidelines at the beginning of the semester in the syllabus for the course. Students who register during the Change of Program period after classes have begun are responsible for the individual course attendance policy.

There will be no make-up exams. If a student misses either exam 1 or 2, the remaining grades will be converted to **33⅓** points each. Only students taking the first two lecture exams will receive an additional bonus of 10 points on the final exam score.

Grade of INC (Incomplete)
An Incomplete Grade may be given only to those students who would pass the course if they were to satisfactorily complete course requirements. It is within the discretion of the faculty member as to whether or not to give the grade of Incomplete.

Accommodations for Students with Disabilities: Students with hearing, visual, or mobility impairments; learning disabilities and attention deficit disorders; chronic illnesses and psychological impairments may be entitled to special accommodations under the Americans with Disabilities Act (ADA). In order to receive accommodation, students must register with the Office of Accessibility Services (O.A.S., Room L.66.10NB, 212-237-8185, http://www.jjay.cuny.edu/2023.php) which will define, for both students and faculty, the appropriate accommodations. Faculty are not allowed to work directly with students to attempt to accommodate disabilities, and accommodations cannot be applied retroactively (after-the-fact).

Statement of the College Policy on Plagiarism: Plagiarism is the presentation of someone else's ideas, words, or artistic, scientific, or technical work as one's own creation. Using the ideas or work of another is permissible only when the original author is identified. Paraphrasing and summarizing, as well as direct quotations require citations to the original source. Plagiarism may be intentional or unintentional. Lack of dishonest intent does not necessarily absolve a student of responsibility for plagiarism. It is the student's responsibility to recognize the difference between statements that are common knowledge (which do not require documentations) and restatements of the ideas of others. Paraphrase, summary, and direct quotation are acceptable forms of restatement, as long as the source is cited. Students who are unsure how and when to provide documentation are advised to consult with their instructors. The library has free guides designed to help students with problems of documentation.

This course will utilize the services of **Turnitin.com**, a plagiarism prevention system approved by the College Council. All students must submit an **electronic copy** of their final paper using either the Word, WordPerfect, RTF, PDF or HTML format **(including the reference page)** to **Turnitin.com** for processing by the date listed. **In addition**, a **printed original** must be submitted to the lab instructor by the scheduled date (instructors may also require an electronic copy). All electronic files should be scanned for viruses before submission. Students transmitting electronic viruses will be **heavily** penalized.

Additional Services: Tutoring is available free of charge for this course in the **Mathematics & Science Resource Center (MSRC).** The center also has a computer lab with internet access and a room for quiet study.

How do you get the most out of a tutoring session?

i. *Start right away*. Students who begin tutoring from the beginning of the semester typically do better than those who wait.
ii. *Book your appointments early*. During peak times, you may need to book at least a week in advance to get the times you want. To book your own appointments over the web, first read the instructions on the MSRC web site, then log on to TutorTrac at the URL below.
iii. *Come prepared*. Please bring your class notes and textbook. Look over the reading and try the problems. If you can, bring a list of specific questions. The more you prepare, the more you will get out of the session.

(cont.)

iv. If you miss a class, please get notes from a classmate *before* your session. Tutoring is not a substitute for attending class.

v. If you are repeating the course (previous grade of "F" or "W"), you are eligible to participate in the Math Advancement Program (MAP) which provides weekly one-on-one tutoring with an experienced tutor. The deadline to sign up for the MAP program is Thursday*, January 31, 2013*. Please see Ms. Michele Doney in room 01.94 NB by *5:00 PM* on January 31, *2013* for details.

Contact Information for the MSRC, room 01.94 NB:
Phone: (646) 557-4635
Email: msrc@jjay.cuny.edu
MSRC Website: http://www.jjay.cuny.edu/academics/592.php
TutorTrac (for scheduling appointments): https://jjctutortrac.jjay.cuny.edu

REVISED 11-JAN-13 WB, SS

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NSC 107 LAB SYLLABUS – Spring 2013 **Section _____**

Revised (2010) 5th Ed. Lab Manual - Carpi & Bailey (downloading report pages requires Adobe Acrobat Reader)

Date	Lab #	Experiment
M 1/28 (R) & W 1/30 (L)	**Intro**	• Safety Rules p.vi • Introduction to the metric system: Units of Measure, Unit Conversion, and Problem Solving. Group work: Metric system, scientific notation and significant figures worksheets. Finish for homework. REQUIRES A **NON-PROGRAMMABLE** CALCULATOR
M 2/4 (R) & W 2/6 (L)	**1**	• Scientific Notation & Significant Figures ➞ The Metric System pp. 11-14 of lecture text. See also on-line *Further Exploration* section on *Basic Math: Scientific Notation* • The Metric System pp.1-3 **(Part 1)**
M 2/11(R) & W 2/13 (L)	**2a** **2b**	• Measuring Liquids p.5 **(Part 2)** • Density Determination pp.5-7 **(Part 3)**➞ Density pp. 19-22 of lecture text. See also **on-line** *Resources* and *Further Exploration* sections.
M 2/18 (No Class) & W 2/20 (Monday schedule) (L)	**5** **7**	• Model Building pp.17-22 • Formula Writing pp.27-29
M 2/25 (R) & W 2/27 (L)	**4** **6**	• **INSTRUCTOR DEMO:**Decomposition Reactions-Electrolysis of Water pp.13-15 • Conductivity pp.23-25
M 3/4 (R) & W 3/6 (L)	**3**	• Conservation of Mass in Chemical Reactions pp.9-11
M 3/11 (R) & W 3/13 (L)	**10a** **10b**	• pH of Common Substances p.39-41 **(Part 1– Labs 10a & b)** • pH of Over-the-Counter Drugs p.42
M 3/18 (R) & W 3/20 (L)	**11**	• Acid-Base Titration pp.43-45 **(Part 2)**
W 3/20	☑	**NATURAL SCIENCE REPORT DUE**
W 4/3	☑	**Lab Practical Quiz 1**
M 4/8 (R) & W 4/10 (L)	**13**	• Manufacturing Aspirin pp.51-55 **(Part 1)**
M 4/15 (R) & W 4/17 (L)	**14**	• Weighing dried **Lab #13** sample & determining % yield incl. in 11/5 (R) • Analgesics and Thin-Layer Chromatography pp. 57-59 **(Part 2)**
M 4/22 (R) & W 4/24 (L)	**16**	• Nutrients in Foods: **Part 1** – Carbohydrates & Proteins pp.65-70
M 4/29 (R) & W 5/1 (L)	**17**	• Nutrients in Foods: **Part 2** – Fats & Iodine Number pp.71-76
M 5/6 (R) & W 5/8 (L)	**18**	• The Cell pp.77-84
M 5/13 (R)	**19**	• DNA and Protein Sequencing pp.85-87
W 5/15	☑	**LAB Practical Quiz 2**

☑ **GRADING SCALE:** LAB GRADE REFLECTS **35%** OF LECTURE GRADE

① Mondays include recitation (R) **and** Wednesdays include lab (L) unless otherwise stated by your instructor. You must attend the specified days to receive full credit for lab.

② Lab participation includes adherence to safety rules, attendance, punctuality and lab station cleanup.

③ **Please do not bring food or beverages into the lab. Do not dispose of food in the waste receptacles.**

④ All labs will be performed on the scheduled day and time only. **NO MAKE-UP LABS.**

⑤ Each individual is responsible for lab station cleanup—not the lab technician!

⑥ **THERE WILL BE NO MAKE-UP QUIZZES.**

⑦ **NO PROGRAMMABLE CALCULATORS, CELL PHONES, iPADS, POCKET P.C.s (incl. PDAs) ARE ALLOWED FOR QUIZZES.**

REVISED 14-JAN-2013 TM