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| **Wilkes Honors College of Florida Atlantic University** | **Course Syllabus** |

1. **Chm 4294,** Honors Medicinal Chemistry**, 3 Credit hours**
2. **Prerequisite:** Minimum grade of “C” in CHM 2211, or permission of the instructor.
3. **Fall 2017**
4. **Professor:** Veljko Dragojlovic, Professor, Phone: 561-799-8012; email: [vdragojl@fau.edu](mailto:vdragojl@fau.edu); Office: RF 212;
5. **Office hours: TBA**
6. **TA Information:** There are no TAs in this course.
7. **Course Description**

This course will provide a comprehensive and balanced review to medicinal chemistry beginning with fundamental principles and progressing to principal methods used in drug design such as quantitative structure-activity relationships, computer-aided drug design, and combinatorial chemistry. Subsequent discussions of more specialized aspects of medicinal chemistry will involve pharmacokinetics and drug metabolism. These concepts will be discussed using numerous examples of drugs and drug action.

1. **Course objectives/student learning outcomes**

The objectives of the course are to provide chemists with a broad introduction to the background, concepts, and tools of medicinal chemistry. At the end of the course, the students should be able to solve medicinal chemistry-related problems in their principal fields of study

1. **Course evaluation method**

Test 1 20% (200 points)

Test 2 20% (200 points)

Test 3 20% (200 points)

Multiple Choice Quizzes 10% (100 points)

Assignment 10% (100 points)

Final Exam 20% (220 points)

1. **Course grading scale**

A 90.0-100%

A- 83.0-89.9%

B+ 78.0-82.9%

B 74.0-73.9%

B- 70.0-73.9%

C+ 66.0-69.9%

C 62.0-65.9%

C- 58.0-61.9

D+ 53.0-57.9%

D 50.0-52.9%

F 0-49.9%

1. **Honors Distinction Information**

This course differs substantially from the non-Honors version.  Students will be exposed to vocabulary of a specifically theoretical nature and will be expected to comprehend these new concepts and to deploy these new terms in their own critical thinking and writing. Most importantly, this course will reflect the interdisciplinary nature of Honors education and will inculcate critical attitudes and skills that will teach you how to learn for yourself. Honors students will have to do an additional assignment that may include either a literature survey and a written report, or a modeling study. The assignment will be worth 10% of the course grade.

1. **Class Policies**

***Please read the following policies carefully. Students are expected to be familiar with and to adhere to the course policies. Ignorance of the course policies is not an excuse for not following them.***

**Important note: Work or personal travel are not valid reasons to postpone, or be excused, from any of the class related activities.**

**Attendance:**

It is the student’s responsibility to monitor, read and understand all announcements and course documents that are posted on the course Blackboard site (accessible at <https://blackboard.fau.edu/> or [http://bb.fau.edu](https://exchange.fau.edu/owa/redir.aspx?C=4e69ede38b654241a5dd4886076a805b&URL=http%3a%2f%2fbb.fau.edu)). Any corrections or additions to this syllabus will be posted at the course Blackboard site and are understood to be part of the syllabus.

A student is required to keep up with the course load. The student is responsible for informing me ***in advance*** of any unavoidable absences, other than illness. Missed assignments must be completed.

Student who misses course work with a valid excuse should contact me immediately upon return to school. Students who miss course work without a valid reason will be accommodated on “best effort” basis (if time permits).

**Exams:**

A student has to wait for at least 24 hours after receiving the graded exam before he/she can discuss it with me. It is the students’ responsibility to make clear whether the purpose of the consultation is to discuss the course material covered by the test, or to appeal the test grade. A deadline to appeal a test grade is two weeks after that grade was received, but no later than one week after the final exam.

There will be no make-up exams. In the case of an excused absence, the final grade will be computed based on the remaining course assignments. Examples of excused absences are:

1. Medical emergency or problem

2. Death in the immediate family

3. Participation in an FAU-sponsored academic or athletic activity/event

4. Required appearance in a civil or criminal court

5. Religious Holiday

If a mid-term test is missed it ***will not*** be rescheduled. Students who miss a test without a valid reason will receive a grade of zero on that test. If a test is missed for a valid reason (e.g. illness) than the grade from the final exam will be factored in to compensate for the missed exam (e.g. if the missed exam contributed 20% and the final exam 20% to the overall grade, than the final exam will be worth 40%).

**Cheating:** Student cheating on ***any*** of the tests or assignments will receive an F ***for the course***.

**Last Day to Withdraw from the Course:** In order to withdraw from a course, it is NOT sufficient simply to stop attending class or to inform the professor of your intention to withdraw. To determine the last day for withdrawal from this course please view the online schedule.

1. **Special Course Requirements**

Students must check the course on the Canvas at least twice a week for additional class materials, announcements and updates to the course syllabus.

1. **Classroom etiquette policy**

* Taking photographs, or videotaping the class is not permitted.
* Please turn off the cell phones.
* Food, drinks, chewing gum and similar items are not permitted.
* Please do not interrupt the class with your questions. Wait until I ask if there are any questions to ask one. As the time is limited, only a few questions can be answered in the class. You may need to come to the office hours with you questions, or send me an email.
* It is OK to walk in late or to walk out early provided that the student does not disturb the rest of the class. Walking in late or walking out early will NOT count as an absence from the class. In case of a student abusing this policy (for example, repeatedly both walking in late and walking out early), such student will be notified that his/hers behavior is not acceptable. If it continues, the student may be assigned missed class penalty as outlined above.
* Bringing in visitors to the class is not acceptable. However, a student may do so with permission of the instructor.
* In general, bringing in children to the class is not acceptable.

1. **Disability policy statement**

In compliance with the Americans with Disabilities Act (ADA), students who require reasonable accommodations to properly execute coursework must register with Student Accessibility Services (SAS)  -- in Boca Raton, SU 131 (561-297-3880); in Davie, LA 131 (954-236-1222); in Jupiter and all Northern Campuses, SR 111F (561-799-8585) – and follow all SAS procedures.

1. **Code of Academic Integrity policy statement**

*Students at Florida Atlantic University are expected to maintain the highest ethical standards. Academic dishonesty is considered a serious breach of these ethical standards, because it interferes with the University mission to provide a high quality education in which no student enjoys an unfair advantage over any other. Academic dishonesty is also destructive of the University community, which is grounded in a system of mutual trust and places high value on personal integrity and individual responsibility. Harsh penalties are associated with academic dishonesty. For more information, see the Code of Academic Integrity in the University Regulations at* [*http://www.fau.edu/regulations/chapter4/4.001\_Code\_of\_Academic\_Integrity.pdf*](http://www.fau.edu/regulations/chapter4/4.001_Code_of_Academic_Integrity.pdf)*.*

*In addition, students taking courses at the Wilkes Honors College agree to adhere to the honor code, available at* [*http://www.fau.edu/divdept/honcol/academics\_honor\_code.htm*](http://www.fau.edu/divdept/honcol/academics_honor_code.htm)

1. **Policy on Recording in Class**

The Honors College of FAU prohibits the audio and/or video recording of class lectures and discussions without the express permission of the instructor. Students who record class lectures or discussions without express permission may be subject to disciplinary action under the FAU Student Code of Conduct, Regulation 4.007; the FAU Code of Academic Integrity, Regulation 4.001; or the Honors College Honor Code.

Unless otherwise expressly permitted by the instructor, permission to record class lectures or discussions applied exclusively to the individual student who receives such permission from the instructor whose class is to be recorded. In no case shall recording occur without notice to all students in the class that the lecture and discussions may be recorded. The recording may not be replicated, accessed, utilized by, or made available to any other student or individual without the permission of the instructor.

Students who request recording of class lectures or discussions under the Americans with Disabilities Act must contact the Student Accessibility Services (SAS) to obtain such permission or accommodation, and must otherwise comply with the requirements of SAS.

This policy remains subject to existing policies, procedures, and regulations of FAU, all of which shall continue to apply.

1. **Required Course Materials**

Richard B. Silverman and Mark W. Holladay, The Organic Chemistry of Drug Design and Drug Action, 3rd Edition, Academic Press, 2014.

A molecular model set. ChemSketch (free download) is an acceptable alternative.

1. **Supplementary Course Materials**

Additional materials, including practice exams, will be posted on the Blackboard. It is student’s responsibility to check the course on the Blackboard at least twice a week.

1. **Course Content**

Dates are approximate and subject to change.

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| Week | Topic |
| **Module I** (four weeks) – 1 MC quiz | |
| 1 | Review of Organic Chemistry. Role of intermolecular interactions in biological systems |
| 2 | Introduction to Medicinal Chemistry |
| 3 | Molecular Modeling, Structure-Activity Relationship and Drug Discovery |
| 4 | Lead Discovery and Lead Modificaiton, **Exam 1** |
| **Module II** (four weeks) – 1 MC quiz | |
| 5 | Receptors |
| 6 | Enzymes |
| 7 | Enzyme Inhibition and Inactivation |
| 8 | DNA-Interactive Agents, **Exam 2** |
| **Module III** (four weeks) – 1 MC quiz | |
| 9 | Drug Resistance and Drug Sinergism |
| 10 | Drug Metabolism |
| 11 | Prodrugs and Drug Delivery Systems, **Exam 3** |
| 12 | **Final Exam** |

**Bibliography**

1. Richard B. Silverman and Mark W. Holladay, *The Organic Chemistry of Drug Design and Drug Action*, 3rd Edition, Academic Press, 2014.
2. Gareth Thomas, *Medicinal Chemistry: An Introduction,* 2nd Edition,Wiley, 2007.
3. T. Nogrady and D.W. Weaver, *Medicinal Chemistry*, 3rd Edition, Oxford University Press, 2005.
4. P.M. Dewick, *Medicinal Natural Products*, 3rd Edition,Wiley, 2009.
5. E.V. Anslyn, *Modern Physical Organic Chemistry*, University Science, 2005.
6. N.S. Isaacs, *Physical Organic Chemistry*, Prentice Hall, 2nd Edition 2005.
7. J.-H. Fuhrhop, G. Li, *Organic Synthesis*, Wiley-VCH; 3rd Edition, 2003.