

# BSC 6926-U02 METABOLOMICS WORKSHOP

Florida International University  
Dept. of Biological Sciences

(SPRING 2018)

## GENERAL INFORMATION

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### PROFESSOR INFORMATION

**Instructor:** Dr. Diego Salazar Amoretti  
**Phone:** (305) 348-7316  
**Office:** OE-244  
**Office Hours:** Tuesday from 9:00 am to 12:20 pm  
*If you cannot make it to this hours please make an appointment via email*  
**E-mail:** dsalazar@fiu.edu

### HOW TO CONTACT ME

Use email as much as possible. Most importantly, use the following format to compose the subject of your email: Course Number, Issue or topic. For example: **BSC6926-U02, Office Hours appointment**. I aim to respond propyl to your questions nevertheless, you need to consider that I am likely inundated with emails from different classes. Therefore, if you do not use the email subject format showed above, it is very likely your email will be buried amongst the mountain of other emails I get every day.

### PROFESSIONAL CODE OF ETIQUETTE FOR ASKING QUESTIONS

In a professional environment, if you what to ask a question from someone at a higher level (supervisor, boss, coordinator, professor, etc.), you should always try to go through the following steps **before** you ask the question. (1) Look for the answer yourself. (2) If you cannot find the answer, or you are unsure of the answer you found, ask a peer to see if he or she knows the answer. (3) If this does not answer the question, take a few minutes to make sure you know what is exactly your question and then ask someone at a higher level in a concise and specific manner. Following this etiquette shows everyone around you that (1) you have motivation and enterprise, (2) that you can work as a team member and value your peers. And most importantly, (3) you value everyone's time. All great qualities of a TRUE professional.

### COURSE DESCRIPTION AND PURPOSE

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Description:

Chemistry is the interface by which species interact, the machinery by which genes are expressed. Today, new advances in instrumentation, computational power, and statistical approaches have allowed studying the relationship between biology and chemistry at a scale that was not possible a few years ago. Metabolomics is a holistic tool that can be applied to a plethora of fields and questions in biology.

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This workshop will give a comprehensive overview of current metabolomic approaches in biology. At the end of the workshop, students will be able to select the right combination of sampling, extraction, analysis, and statistics to answer specific research questions.

Using a hands-on approach, the students will learn:

- Advantages and shortcomings of the different sampling, extraction, and analytical techniques.
- The different kinds of data used for metabolomics (both qualitative and quantitative).
- The analytical and statistical workflow.
- The approaches and goals of data pre-processing.
- Targeted vs. untargeted metabolomics.
- Assisted vs. unassisted statistical approaches.
- Current computational statistical tools for metabolomics (e.g.: machine learning).
- Using Public, private libraries, and how to building in-house libraries.

Maximum number of students: 12

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## POLICIES

### **Rules, Policies, and Academic Misconduct**

A major objective of higher education is to develop self-reliance, critical thinking, problem-solving, and creative thinking therefore, it is expected that students will be responsible for the completion of their own academic work.

If appropriate, the use of literature, notes, aids, or assistance from other primary or secondary sources should be clearly identified and disclosed. In addition, students are expected to use all resources, including books, journals, and computers only in legal and authorized ways. They should also refrain from falsification of records, attend class as required, and participate in the educational process without disrupting the orderly processes and functions of the University. Students are expected to abide by the CODE OF ACADEMIC INTEGRITY (<http://integrity.fiu.edu/misconducts.html>).

It is the Responsibility of all students, faculty and administration to conduct all academic and scholarly activities in Truth which means the honest pursuit, generation, dissemination and application of knowledge. All students should respect the right of others to have an equitable opportunity to learn and honestly to demonstrate the quality of their learning. Therefore, all students are expected to adhere to a standard of academic conduct, which demonstrates respect for themselves, their fellow students, and the educational mission of Florida International University.

As a student of this university:

I will be honest in my academic endeavors.

I will not represent someone else's work as my own.

I will not cheat, nor will I aid in another's cheating.

All students are deemed by the University to understand that if they are found responsible for academic misconduct, they will be subject to the Academic Misconduct procedures and sanctions.

### **Disability Notice**

There is a Disability Resource Center available to you should you need it. It is your responsibility to contact them to process your request to have your needs met. You must follow their procedures as to properly notify the instructor.

Diversity Statement: The School of Journalism and Mass Communication (SJMC) fosters an environment of inclusivity and respect for diversity and multiculturalism. The SJMC educates students to embrace diversity and understand the root causes of discrimination, as well as social, ethnic, sexual, disability and gender-based exclusion.

### **Religious Holy Days**

The University's policy on religious holy days as stated in the University Catalog and Student Handbook will be followed in this class. Any student may request to be excused from class to observe a religious holy day of his or her faith.

## Attendance & Participation

Class attendance is essential for your understanding and comprehension of the course material. Given that this class in particular does not follow a textbook word by word, attendance is mandatory.

## Discrepancies

In the event that there is a discrepancy with your grades – whether it was not posted with the rest of the class or if there are questions that you would like to review with your instructor – it is your responsibility to communicate with your instructor in a timely manner in order for changes to be made or office hours to be arranged.

## Electronic Devices

I discourage the use of any electronic devices including phones, laptops, and tablets to class. Please, if you must bring these devices to class, set all electronic devices, including cell phones, to silent mode so that they cannot be heard. Additionally, if you must take a call or text, please quietly leave the classroom to complete the discussion. Please, do not engage in texting inside the classroom.

## COURSE DETAIL

### COURSE COMMUNICATION

At the end of each lecture, by e-mail, and/or through appointments.

### DISCUSSION FORUMS

Keep in mind that your discussion forum postings will likely be seen by other members of the course. Care should be taken when determining what to post.

### ACADEMIC GRIEVANCE

I aim to provide academic instruction in a way that is nondiscriminatory and fair to all students. Nevertheless, if you believe that you have not been dealt with fairly or that the instruction has been inadequate, procedures exist for handling grievances. First, speak with the instructor (that is Me). I could be unaware that a problem exists and your grievance might help me make the class better for you and your fellow students. Speaking with the instructor is likely to yield a satisfactory explanation, or resolve the problem by making adjustments to accommodate special needs. Second, if the problem is not or cannot be resolved with the instructor, speak with the department head or chairperson. Finally, if the problem still cannot be resolved, speak with the Dean of Students.

Course Requirements		Number of Items	Points for Each	Total Points Available	Weight
Theory participation		1	50	50	50%
Practice participation		1	50	50	50%
<b>Total</b>		<b>2</b>	<b>N/A</b>	<b>100</b>	<b>100%</b>

  

Letter	Range (%)	Letter	Range (%)	Letter	Range (%)
A	95 or above	B	83 - 86	C	70 - 76
A-	90 - 94	B-	80 - 82	D	60 - 69
B+	87 - 89	C+	77 - 79	F	59 or less