# SYLLABUS

**Directed Research – 29921 – UNIV 4000-13**  
Mentor: Debasish Bandyopadhyay  
E-mail: debasish.bandyopadhyay@utrgv.edu  
Office location & hours: ESCNE 3.320 & MTR: 7:30-8:30 pm.

Date and Time will be determined based on convenience of the Student & the Mentor (ESCNE 3.492)

During Research Hours you will find me in the Lab (ESCNE 3.492). My 24/7 Schedule is displayed there.

## Course Description

This zero-credit directed research course (UNIV 4000) is designed to provide students with an opportunity to conduct faculty-supervised research in an area of mutual interest. The course will provide an opportunity to obtain hands-on research experience. May be repeated for up to six hours credit.

## Prerequisites

Consent of Instructor.

**Students must attend HAZCOM training as required for research students. This must be documented with UTRGV’s Department Environmental Health and Safety Department.**

This course is not part of the UTRGV core curriculum inventory. The course objectives include critical thinking skills, communication skills, empirical and quantitative skills.

## Course Requirements

1. Each research student will maintain a research journal, documenting the dates and time spent on laboratory work, literature study and meetings with mentors. The journal will be a bound notebook containing data, pertinent observations and notes. Accurate and complete notes are essential in any type of research. Students are expected to keep this journal up to date, neat and organized. Students are expected to show this notebook to me and have my initial the notebook once a month.

2. A final written report using the ACS style (e.g. Tetrahedron) or style suitable for Biochemistry that is reviewed by the mentor prior to submission.
   a. The report should be written double spaced with size 12 font and 1 inch margins all around.
   b. Text (introduction, methods, results and discussion) is expected to be at least 10 pages not including charts, graphs, and figures which should be placed at the end. Spectra should be reduced to a single page size and placed at the end.
   c. A Title page and table of contents should be included at the beginning of the report.

## Learning Objectives/Outcomes for the Course

- To understand the core basic concepts in Organic Chemistry
- To have deeper understanding of the mechanistic details in Organic Chemistry
- To learn various functional groups and their reactivity
- To understand the acid-base chemistry
- To learn various aspects of spectroscopy
- To correlate Organic Chemistry in day-to-day life
- To learn the art and logic in organic syntheses and/or Natural Drug Development Strategy
- To demonstrate the use of Organic Chemistry in Medicine

## Learning Objectives for Core Curriculum Requirements

- Graduates will have both broad knowledge and skills of critical thinking in the chemical sciences.
- Graduates will be prepared to conduct (either as individual or as a team) or participate in research.
- Graduates will demonstrate the ability to communicate chemical knowledge.
- Graduates will be prepared to enroll themselves for the upper level Organic Chemistry study (e.g. Advanced Organic Chemistry/Medicinal Chemistry lecture courses) to develop empirical and quantitative skills.
Graduates are prepared to search for employment (including graduate or professional school) to meet social and personal responsibilities.

**Grading Policies:**
This is a zero-credit course.

**Tentative Schedule**
The written report is due on Wednesday (May 02, 2018).

**Other Course Information**

**Goals:**
1. To earn hands-on research experience.
2. To publish Research Articles in Internationally reputed peer-reviewed Journal.
3. To present your findings in Local/State/Regional conferences.
4. To present your findings in American Chemical Society (ACS) National Meetings.

**DOs**
- This is your lab, take care of it.
- Submit your Research Schedule.
- Maintain research hours (19 hrs./week on average)
- Collect a Notebook from me at the beginning of the semester.
- Maintain your Research Notebook properly. Write EVERYTHING that you are doing in Lab.
- Study for your class/test, if you have available time between two subsequent research activities.
- Watch videos (made by Alondra and Others) to learn some techniques. If you have question, I’m here to help you.
- Submit your (i) Research Notebook (journal) (ii) Compounds and (iii) Spectra folder to my hand; before you leave the Lab (ESCNE 3.492) permanently.
- Be organized.
- Please be Courteous to others.
- Please be Respectful to others’ Research.
- Refrain from talking Loudly/Continuously.
- Refrain yourself from using Slangs.
- Help to protect the “academic freedom” of other students.

**DON’Ts**
- Hesitate to ask any help.
- Do prolonged Non-Academic conversation over Telephone.
- Use phone while you are: (1) Cleaning glassware (2) Working with rotavapor and (iii) Running flash Column (Air).
- Leave your workstation DIRTY
- Leave your used (dirty) glassware
- Bring your food/drink/water bottle in Lab

Please Remember..........

**Do NOT watch Movie/Novelas de televise in Laboratory**
Lab is NOT a place for Meeting/Chatting
Please come to Lab ONLY if you have plan for serious research......NO EXCEPTION

**Regarding Projects:**
You are expected to complete one of these below criteria:
1. You can optimize a new reaction method and successfully complete at least THREE reactions (Medicinal Green Chemistry)

OR

2. On successful completion of at least ONE plant Extract like DEE or EtOH or Water (Natural Product Chemistry).
For both the cases, depending on results of your Column, subsequent small column(s) [rechromatography] might be needed. The bottom line is that “We need PURE compounds”.

Regarding Publications:
Please note that:
1. We only Publish in internationally reputed peer-viewed Journals
2. You must COMPLETE your project to have your Publication

“Completion of a project” means:
Optimization of a new reaction method and successful completion of a series of reactions [20] following the newly-developed route [Green Medicinal Chemistry]
OR
Complete chemical investigation of a Plant part that includes DEE, EtOH, and Water extracts [Natural Drug Development Research/ Natural Product Chemistry/Food Chemistry]

After successful completion of a project, the compounds shall be sent for biological evaluation and then the findings (manuscript) will be submitted to suitable Journal for publication.

Calendar of Activities
The UTRGV academic calendar can be found at https://my.utrgv.edu/home at the bottom of the screen, prior to login. Some important dates for fall 2018 include:

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>August 27</td>
<td>First day of classes</td>
</tr>
<tr>
<td>August 30</td>
<td>Last day to add a course or register for fall 2018</td>
</tr>
<tr>
<td>September 3</td>
<td>Labor Day – NO classes</td>
</tr>
<tr>
<td>November 14</td>
<td>Last day to drop a course; will count toward the 6-drop rule</td>
</tr>
<tr>
<td>November 22 - 24</td>
<td>Thanksgiving Holiday – NO classes</td>
</tr>
<tr>
<td>December 6</td>
<td>Study Day – NO classes</td>
</tr>
<tr>
<td>December 7 - 13</td>
<td>Final Exams</td>
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<tr>
<td>December 14 – 15</td>
<td>Commencement Exercises</td>
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UTRGV Policy Statements
The UTRGV disability accommodation, mandatory course evaluation statement and sexual harassment statement are required on all syllabi. Additional policy statements are optional, such as those covering attendance, academic integrity, and course drop policies.

STUDENTS WITH DISABILITIES:
Students with a documented disability (physical, psychological, learning, or other disability which affects academic performance) who would like to receive academic accommodations should contact Student Accessibility Services (SAS) as soon as possible to schedule an appointment to initiate services. Accommodations can be arranged through SAS at any time, but are not retroactive. Students who suffer a broken bone, severe injury or undergo surgery during the semester are eligible for temporary services.

Pregnancy, Pregnancy-related, and Parenting Accommodations
Title IX of the Education Amendments of 1972 prohibits sex discrimination, which includes discrimination based on pregnancy, marital status, or parental status. Students seeking accommodations related to pregnancy, pregnancy-related condition, or parenting (reasonably immediate postpartum period) are encouraged to contact Student Accessibility Services for additional information and to request accommodations.

Student Accessibility Services:
Brownsville Campus: Student Accessibility Services is located in Cortez Hall Room 129 and can be contacted by phone at (956) 882-7374 (Voice) or via email at ability@utrgv.edu. Edinburg Campus: Student Accessibility Services is located in 108 University Center and can be contacted by phone at (956) 665-7005 (Voice), (956) 665-3840 (Fax), or via email at ability@utrgv.edu.
MANDATORY COURSE EVALUATION PERIOD:
Students are required to complete an ONLINE evaluation of this course, accessed through your UTRGV account (http://my.utrgv.edu); you will be contacted through email with further instructions. Online evaluations will be available Nov. 15 – Dec. 05 for the regular fall semester. Students who complete their evaluations will have priority access to their grades.

ATTENDANCE:
Students are expected to attend all scheduled classes and may be dropped from the course for excessive absences. UTRGV’s attendance policy excuses students from attending class if they are participating in officially sponsored university activities, such as athletics; for observance of religious holy days; or for military service. Students should contact the instructor in advance of the excused absence and arrange to make up missed work or examinations.

STUDENT WILL NOT BE ALLOWED TO ATTEND THE LAB IF S/HE ARRIVES MORE THAN 15 MINUTES LATE.

SCHOLASTIC INTEGRITY:
As members of a community dedicated to Honesty, Integrity and Respect, students are reminded that those who engage in scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and expulsion from the University. Scholastic dishonesty includes but is not limited to: cheating, plagiarism (including self-plagiarism), and collusion; submission for credit of any work or materials that are attributable in whole or in part to another person; taking an examination for another person; any act designed to give unfair advantage to a student; or the attempt to commit such acts. Since scholastic dishonesty harms the individual, all students and the integrity of the University, policies on scholastic dishonesty will be strictly enforced (Board of Regents Rules and Regulations and UTRGV Academic Integrity Guidelines). All scholastic dishonesty incidents will be reported to the Dean of Students.

SEXUAL HARASSMENT, DISCRIMINATION, and VIOLENCE:
In accordance with UT System regulations, your instructor is a “Responsible Employee” for reporting purposes under Title IX regulations and so must report any instance, occurring during a student’s time in college, of sexual assault, stalking, dating violence, domestic violence, or sexual harassment about which she/he becomes aware during this course through writing, discussion, or personal disclosure. More information can be found at www.utrgv.edu/equity, including confidential resources available on campus. The faculty and staff of UTRGV actively strive to provide a learning, working, and living environment that promotes personal integrity, civility, and mutual respect that is free from sexual misconduct and discrimination.

COURSE DROPS:
According to UTRGV policy, students may drop any class without penalty earning a grade of DR until the official drop date. Following that date, students must be assigned a letter grade and can no longer drop the class. Students considering dropping the class should be aware of the “3-peat rule” and the “6-drop” rule so they can recognize how dropped classes may affect their academic success. The 6-drop rule refers to Texas law that dictates that undergraduate students may not drop more than six courses during their undergraduate career. Courses dropped at other Texas public higher education institutions will count toward the six-course drop limit. The 3-peat rule refers to additional fees charged to students who take the same class for the third time.

STUDENT SERVICES:
Students who demonstrate financial need have a variety of options when it comes to paying for college costs, such as scholarships, grants, loans and work-study. Students should visit the Students Services Center (U Central) for additional information. U Central is located in BMAIN 1.100 (Brownsville) or ESSBL 1.145 (Edinburg) or can be reached by email (ucentral@utrgv.edu) or telephone: (888) 882-4026. In addition to financial aid, U Central can assist students with registration and admissions.

Students seeking academic help in their studies can use university resources in addition to an instructor’s office hours. University Resources include the Learning Center, Writing Center, Advising Center and Career Center. The centers provide services such as tutoring, writing help, critical thinking, study skills, degree planning, and student employment. Locations are:
• Learning center: BSTUN 2.10 (Brownsville) or ELCTR 100 (Edinburg)
• Writing center: BLIBR 3.206 (Brownsville) or ESTAC 3.119 (Edinburg)
• Advising center: BMAIN 1.400 (Brownsville) or ESWKH 101 (Edinburg)
• Career center: BCRTZ 129 (Brownsville) or ESSBL 2.101 (Edinburg)