**Teaching plan for Fall 2020**

**Org. Chem. I Lab (CHEM245)**

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In this teaching plan I will try to explain how the Organic Chemistry II Laboratory will be taught in the next semester Fall 2020. Depending on the situation of the Coronavirus, we have developed these two options.

### Option 1: If the UAEU allow the gradual return of students to the lab as small groups, the laboratory teaching mode will be conducted as follow:

* 1. **Laboratory Conducting mode:**
* **The theoretical part** of the experiment will be giving to students online by using the Blackboard Ultra.
* **The experimental part** will be giving in normal lab time in reduced number of students. But by conducting two experiments per lab. Students will do the experiment only, they take the results and they go. The analysis of results will be done in their home.
  1. **Assessment and test:**
* **Tests:** Quizzes & Pre-lab questions and any additional exam will be conducted on Blackboard system.
* **Assessment:** Lab reports will be posted on Blackboard and asking students to submit them to the BB within one week to be corrected.
  1. **Lab manual:**
* The updated Lab manual will be sent to students in the beginning of the semester. Soft copies con obtained in the library of the university.
  1. **Office hours:**
* Students will be attended online in the same office hours’ time that will be advised to students in the beginning of the semester.
  1. **Attendance:**
* Attendance will be taking in the lab and immediately submitted to the system
  1. **Final exams**

Both exams (Theory and practical) will be conducted during the lab time.

**Theory exams** will beconducted on Blackboard by using the options (Multiple choice, fill in blank, Short answer, …), introducing images and tables in each question if needed. And using the option Randomize the questions and answers. Students must bring their laptop to the Lab. And a password will provide to them

**Practical exams:** Students will do the practical exam in the lab in small groups. Lab technicians will prepare all materials for the exams. They are also serving as proctors.

Both theory and practical exams **will be proctored** using **LockDown Browsers** with **Respondus Monitor**

### Option 2: If students are not allow to come to the campus, the laboratory teaching mode will carried out online and will be conducted as follow:

* 1. **Online Teaching**
* **Live Sessions:**  Sessions will be held during the normal class timings using Blackboard Ultra.
* **Lab Manual & PPT** will be provided to students.
* **Recording the video of all experiments:** All experiments will be recorded, giving step by step procedure, as if students were to conduct them in the lab.
* **YouTube Channel:** I created a YouTube channel, and I am posting all videos on it and giving to students the links of those videos.
* **Sharing other videos** **with the students:** There are many other videos on YouTube that can help students to understand better the experiments.
* **Record the Blackboard session** by checking “Allow Recording downloads”.
  1. **Assessment and test:**
* **Tests:** Quizzes & Pre-lab questions and any additional exam will be conducted on Blackboard system.
* **Assessment:** Lab reports will be posted on Blackboard and asking students to answer it and submit it to the BB within one week to be corrected.
  1. **Attendance:**
* Attendance will be generated upon completion of the session by downloading the excel sheet file.
  1. **Final Online exams**

1. Both theory and practical exams will be conducted on **May 4th (Monday)** at the same day and the same hour for all my Organic labs in order to avoid any communication between students.
2. **Theory exam**: Questions will be prepared previously on BB by using the options (Multiple choice, Fill in blank, Short answer, … ), introducing images and tables in each question if needed. And using the option Randomize the questions and answers.
3. **Practical exam**: I will give students the experiment (Identification of functional groups) as the previous semesters. I will give them pictures of different tests of two unknown samples showing colors and precipitations and ask students to identify the type of functional group exist in the unknown sample, based on their observations.
4. Both theory and practical exams **will be proctored** using **LockDown Browsers** with **Respondus Monitor** 
   1. **Software used to create/edit videos:**

* **Camtasia Studio Software,** I am fully using the Camtasia Studio Software in order to eliminate background noises of the Fume Hood appeared during recording videos of the experiments in the lab. I am using also this sobtwares **Wondershare Filmora9, Adobe Promiere Pro CS6.**
* **Screen Recorder CyberLink 16 Software:** Generate videos of the theoretical part (PPT) by using the Screen Recorder CyberLink 16 Software. Then, I upload those videos to students.
  1. **Experiments & Available Resources:**

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| **EXPERIMENT 1:** Melting Point Determination of Chemical Solids | |
| Virtual Resource | * Our experiment video will be recorded * YouTube: <https://www.youtube.com/watch?v=c-_N8grg-OY> |
| Teaching Tools | Blackboard Collaborate Ultra, |

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| **EXPERIMENT 2:** Thin Layer Chromatography (TLC) | |
| Virtual Resource | * Our experiment video will be recorded * YouTube: <https://www.youtube.com/watch?v=U2BKeT8toLQ&t=239s> |
| Teaching Tools | Blackboard Collaborate Ultra, |

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| **EXPERIMENT 3:** Crystallization of Acetanilide | |
| Virtual Resource | * Our experiment video will be recorded * YouTube: Crystallization of benzoic acid <https://www.youtube.com/watch?v=FMKtzr0ZoaI> |
| Teaching Tools | Blackboard Collaborate Ultra, |

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| **EXPERIMENT 4:** Synthesis of Aspirin: An Application of TLC | |
| Virtual Resource | * Our experiment video will be recorded * YouTube: <https://www.youtube.com/watch?v=Y4NMpO1xI8U> |
| Teaching Tools | Blackboard Collaborate Ultra, |

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| **EXPERIMENT 5:** [Distillation](#_TOC_250003) | |
| Virtual Resource | * Our experiment video will be recorded * YouTube: <https://www.youtube.com/watch?v=mrA1OawpeNk> |
| Teaching Tools | Blackboard Collaborate Ultra, |

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| **EXPERIMENT 6:** [Extraction of Caffeine from Tea](#_TOC_250002) | |
| Virtual Resource | * Our experiment video will be recorded * YouTube: <https://www.youtube.com/watch?v=RIbff5iD0GQ> |
| Teaching Tools | Blackboard Collaborate Ultra, |

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| **EXPERIMENT 7:** [Infrared Spectroscopy](#_TOC_250001) | |
| Virtual Resource | * Our recorded video: <https://www.youtube.com/watch?v=ZoWkyQEfQP0&t=47s> * YouTube: <https://www.youtube.com/watch?v=_TmevMf-Zgs> |
| Teaching Tools | Blackboard Collaborate Ultra, |

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| **EXPERIMENT 8:** [Ultraviolet Spectroscopy](#_TOC_250000) | |
| Virtual Resource | * Our recorded video: <https://www.youtube.com/watch?v=Y8NX8FMfJGg&t=8s> * YouTube: <https://www.youtube.com/watch?v=s5uIVQGFDE4> |
| Teaching Tools | Blackboard Collaborate Ultra, |

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| **EXPERIMENT 9:** Analysis of Caffeine using GC-MS | |
| Virtual Resource | * Our recorded video: <https://www.youtube.com/watch?v=Y8NX8FMfJGg&t=8s> * YouTube: <https://www.youtube.com/watch?v=s5uIVQGFDE4> |
| Teaching Tools | Blackboard Collaborate Ultra, |

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| **EXPERIMENT 10:** Identification of Organic Functional Groups | |
| Virtual Resource | * Our experiment was recorded and submitted to students. * YouTube: there are many interesting experiments in YouTube.   1. Iodoform test for CH3CH(OH)-R (Test for alcohols) : <https://www.youtube.com/watch?v=iOeDDme-Tl0>   2. Lucas test : <https://www.youtube.com/watch?v=4yPjkRLcauI>   3. Iodoform test for CH3COR structures (Test for ketones). <https://www.youtube.com/watch?v=Xuc4q0XHGsg> |
| Teaching Tools | Blackboard Collaborate Ultra, |