**Organic Chemistry Experiment type B (68 hours) Outline**

**A. Basic Information of Course**

1. Course Code: CA042

2. Course Name: Organic Experimental Chemistry-B

3. Period/ Credit Hour: 68 hours/2 Credit Hours

4. Prerequisite Course: Organic Chemistry

5. Object: Zhiyuan College

6. College: School of Chemistry & Chemical Technology

7. Reference Book:

 “Organic Experiment （I）” 谢小敏主编

**B. Character and Task of Course**

Organic chemistry is an important branch of chemistry. It is a course to examine the composition, structure, properties and the rules of changing of organic compounds. Organic chemistry experiment is a important part of Organic chemistry teaching, experimental teaching certification, and to consolidate and strengthen the most of the theoretical knowledge and accompany dependents students on the proper choice of synthetic organic compounds, the separation and identification methods, analysis and resolution of experimental problems encountered in the thinking and practical ability and train the students to the style of linking theory with practice, seeking truth from facts, rigorous serious scientific attitude and good work habits, training students to the basic skills of organic chemistry experiments and experimental methods and collated experimental data, the preparation of test reports the ability to lay a solid foundation for relevant professionals.

**C. Teaching content and requirements**

The experimental curriculum arrangements are to ensure that students master basic operations mainly. This curriculum-related theory courses separate commencement.

**D. Experiment (computer) content and requirements**

1. Experiment safety educationand test of refractive index

2. Purification of solid organic compound and the melting point testing.

3. Synthesis of 1-bromobutane

4. Synthesis of ethyl benzoate

5. Distillation of acetoacetic ester in vacuum and test the UV spectroscopy

6. Oxidation reaction: Synthesis of cyclohexanone

7. Grignard reaction: Synthesis of 2-methyl-2-butanol

8. Photochemical reactions and chromatographic separation

9. Extraction of natural products: Extract caffeine from tea

10. Microscale experiment and detected by TLC

Diels-Alder reaction, 9,10-dihydroanthracene-9,10-α,β-maleic anhydride

11. Cannizzaro reaction: Synthesis of phenyl methanol and benzoic acid

The experiments include three steps: Preparation, write test report, (including experimental phenomena, laboratory records, review, analysis, discussion). After more training in organic chemistry to enable students to review basic knowledge, master Organic Reactions basic operation and the training of scientific method and experimental research laboratory report writing ability. require students to do the following:

1. Preview Experiment content seriously, writing preview report which includes: experimental purpose, principle, raw materials and products of the physical constants, experimental steps outlined, the possible problems and their prevention. Teachers check preview report before class . The students without preview report were not allowed to experiment.

2. Carefully experiment, write down all records of experimental phenomena and the experimental data, positive thinking enhance classroom teaching content on experimental principle, understand the methods of operation.

3. When the experiment needs to be designed, students are required to consult the relevant books and literature, and to design programs, discuss with teachers.

4. Write the experimental report seriously, experimental phenomena interpretation and experimental analysis are needed in the report. To calculate yield, to discuss the reasons for success or failure of the experimental results.

**E. Capacity-building on the requirements of students**

These experiments are very important to train students for the ability of theory with practical hands and ability to operate, to train students the ability to think independently and sense of innovation. Combined the techniques of modern equipment analysis, and promote the organic combination of instruments, allowing students early exposure to modern analytical tools for future research work in laying a foundation.

F. Other information

1. Website: <http://organic.sjtu.edu.cn>

2. The requirements base on studying criterion (moral criterion, work criterion, experimental criterion)

Attend class on time and power off the cell phone during class

3. The final score include three parts: Test, Work and discuss

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