June 23rd 2003

AB 03-49

THE COLLEGE OF THE BAHAMAS
SCHOOL OF NATURAL SCIENCES AND ENVIRONMENTAL STUDIES
DEPARTMENT OF CHEMISTRY

4 hours

CHLB 330 – ORGANIC CHEMISTRY II LABORATORY

2 semester hour credits

Course Description

This laboratory course complements the theory introduced in CHEM 330 – Organic Chemistry II. It focuses on the development of skills in extraction and purification procedures, syntheses, analysis and identification of organic compounds.

Specific Objectives

Upon successful completion of this course, students will be able to

1. perform experimental procedures such as solvent extraction, thin layer chromatography; melting point determination, fractional distillation;
2. identify, through laboratory tests, the presence of specific functional groups; and
3. analyse results obtained from various experimental procedures.

Course Content

1. Selective reduction of 3-nitroacetophenone
2. Synthesis of aspirin
3. Preparation and saponification of methyl benzoate
4. Preparation of oil of wintergreen
5. Isolation of caffeine from tea
6. Isolation of eugenol from cloves
7. Separation of enantiomers
8. A Diels-Alder synthesis
9. Preparation of sulfanilide from acetanilide
10. Preparation of benzoic acid from three different starting materials

Assessment

Tests / laboratory reports 100%

Required Text

The College of The Bahamas Chemistry Department Laboratory Manual

Supplementary Readings

Bruice, P. Y. (2001). *Organic chemistry* (3rd ed.). New York: Prentice Hall. ISBN 0-13-017858-6

****Durst, H. D., & Gokel, G. W.** (1986). *Experimental organic chemistry* (2nd ed.). New York: McGraw Hill, Inc. ISBN 0-07-018398-8

****Fieser, L. F., & Williamson, K. L.** (1992). *Organic experiments* (7th ed.). New York: D.C. Heath & Co. ISBN 0-669-24344-2

Hornback, J. M. (1998). *Organic chemistry*. Toronto: Brooks/Cole Publishing Company. ISBN 0-534-35254-5

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Jurgen-Hinrich, F., Guantao, L., & Corey, E. J. (2003). *Organic synthesis: Concepts and methods* (3rd ed.). New York: John Wiley & Sons Inc. ISBN 3-527-30272-7

Morrison, R.T., & Boyd, R.N. (1992). Organic chemistry (6th ed.). New York: Allyn Bacon Publishers. ISBN 0132678160

Solomons, T. W. G. (1996). *Organic chemistry* (6th ed.). New York: John Wiley & Sons Inc. ISBN 0-417-01342-0

Journals

**Education in Chemistry: The Royal Society of Chemistry ISSN 0013-1350
**Journal of Chemical Education ISSN 0021-9584
**Journal of Research in Science Teaching: John Wiley and Sons Inc. ISSN 0022-4308
**Scientific American: Scientific American Inc. ISSN 0036-8733

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