Module Code	21349053	Course Term
Course Subject Name	**Bioorganic Chemistry**	Autumn Semester
Course Tutor	**Douglas Drummond**	
Credit	2	Taught Day
Schools	School of Agriculture	THU-1
Taught Year	3rd year	
Campus	Ito campus	
Subject Area	Lecture	
Course Subject Classification	Common Basic Subject	Thursday, 1st period (8:40-10:10)
Course Requirements		
Course Requirement (Pre-requisite)	Basic knowledge of organic chemistry	

Course Outline

This course provides an overview of the molecules and molecular transformations in living organisms.

key words

Bioorganic chemistry, metabolism

Study Objectives (General)

To understand the fundamental organic chemistry that determines the structure and chemical reactions of molecules in living organisms.

Study Objectives (Specific)

To understand the organic chemistry of biochemical transformations.
To learn the structures, reactions and organic chemistry of :
amino acids and proteins
simple and complex carbohydrates
lipids
nucleic acids
secondary metabolites that form important natural products

Course Plan

Weekly schedule (may be subject to revision)

1. Functional groups and common mechanisms in bioorganic chemistry I
2. Functional groups and common mechanisms in bioorganic chemistry II
3. Carbohydrates - structure and reactions (Quiz: functional groups and mechanisms)
4. carbohydrates - metabolism
5. lipids - structure and reactions (Quiz: carbohydrates)
6. lipids - metabolism
7. Exam 1 (lectures 1-6)
8. nucleic acids - structure and reactions
9. nucleotide - metabolism
10. amino acids and proteins - structure and reactions (Quiz: nucleic acids)
11. amino acids - metabolism
12. Exam 2 (lectures 8-11)
13. natural product chemistry and biosynthesis I
14. natural product chemistry and biosynthesis II
15. Oral presentations of report topics in natural product chemistry and biosynthesis I
16. (Depending class size) Oral presentations of report topics in natural product chemistry and biosynthesis II

Course Approaches	Lectures and research and presentation of report and oral presentation
Textbooks	Introduction to Organic Chemistry by W.H. Brown and T. Poon 4th ed (2010) The Organic Chemistry of Biological Pathways by John McMurry and Tadhg Begley 1st ed. (2005)
Reference Books	
Study consultation (office hour)	Office: Rm.679 Bldg. West-5 Faculty of Agriculture, Kyushu University, Ito Campus Office Hours: 09:00 - 18:00 Email: d.drummond@agr.kyushu-u.ac.jp Phone: (092)-802-4768
Exams/Results Evaluation Method	short quizes: 15% short exams: 60% written report: 15% oral presentation to class: 10%
Others	A minimum of 80% attendance is mandatory.