Biomechanics

(Code: 4864, 1st – 2nd year, 4 units)

(Course ID: GS－c4864－S)

1. Instructors

Name	Position	Department	Contact Information
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2. Classroom/Lab Lecture Location

Department of Bioinformation, Institute of Biomaterials and Bioengineering 4F

3. Course Purpose and Outline

The purpose of this course is to learn the basic technologies of biomechanics, which is based on the study of body movements/structure from mechanical and informational points of view. The course will cover the basics of robotics, control engineering and statistical analysis of human body. By the end of this course, students will be capable of advancing the research and development of medical devices, especially devices and systems for minimally invasive surgeries.

4. Course Objectives

Students will acquire fundamental knowledge of biomechanics, and learn how to research and develop medical devices, especially devices and systems for minimally invasive surgery.

5. Format

The class size will be kept small, in order to focus on the acquisition of fundamental knowledge and skills.

6. Course Details

Learn about mechanical design and control engineering for medical devices based on biomechanics. Master the basic skills to develop devices through seminars by researchers and engineers working on medical devices and systems. Acquire basic knowledge of risk analysis and statistical analysis, which is required for evaluating robotic surgery systems.

Seminar: Every Monday 14:00 – 16:00 PM

Check the schedule announced at the beginning of the academic year for journal clubs, lectures, special lectures and seminars.

7. Assessment

An overall assessment comprising of class participation (knowledge and understanding of the specialty field, content of presentations and Q&A) (50%) and involvement in research (50%) will be made.

8. Prerequisite Reading

Basic knowledge of robotic surgery, mechanical and control engineering is recommended.

9. Reference Materials

None.

10. Language Used

All classes are conducted in English.

11. Office Hours

Mon – Fri: 9:00 AM – 17:00 PM

Contact: NAKAJIMA Yoshikazu, Department of Biomedical Information
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Please contact the instructor regarding questions or consultations.

12. Note(s) to Students

All students interested in medical devices and robotics are welcome.