Course title [Subtitle]	Advisor in charge [Affiliation]
Topics of Drug Discovery and Medical	Yukihiro Tanaka [UGS-DDMIS] Kaori Tanaka [UGS-DDMIS] Hirohisa Oda [Gifu University] Hiroshi Ueda [UGS-DDMIS] Kazuo Kuwata [UGS-DDMIS] Yukihiro Akao [UGS-DDMIS] Yukio Kitade [UGS-DDMIS] Yasutomi Knosada [UGS-DDMIS]

Academic year		2013
Graduate school		UGS-DDMIS
Division		Required Basic Subject
Course category	Subject category	Basic Subject
	Classification	Required Basic Subject
	Category for grading subject	
Year of study		ALL
Limitations on registration		
Term		Spring
Timetable		
Remarks for timetable		
Type of class		
Number of credits		1
Required / elective subject		
Classroom		
Course title		Topics of Drug Discovery and Medical Information
Subtitle		
Course title [English]		Topics of Drug Discovery and Medical Information
Subtitle [English]		

Registration code	Subject number	Curriculum
SKH00100	0010	連合創薬医療情報 2007

1. Aims of the class (aims of the class, goals, learning objectives)

The academic fields of drug discovery and medical informatics include a broad range of life sciences, and these fields are expanding more and more each day.

The aim of this course is to provide students with an understanding of the general concepts related to drug discovery, as well as a general understanding of the fields that will form the foundation for future research activities, such as genomics, structural biology, biomolecular chemistry, personalized medicine, and preventive medicine. The course will touch on a broad range of information that is required to decide on a specialty and to carry out special research. The goal is for students to understand the most current

situation in these fields.

An additional aim of this course is to nurture creativity, activity, and independence in students.

２．Schedule of the class (type of class, prerequisites, etc.)

２－２．Requirements (prerequisites, etc.) (up to 200 Japanese characters or xx English words)

３．Textbook(s), references, etc.

５－１．Message to students (up to 200 Japanese characters or xx English words)

５－２．Office hours (up to 100 Japanese characters or xx English words)

５－３．Contact information

[Room] 2nd floor of Medical Building

[Tel] 230-6620

[Mail] ykns@gifu-u.ac.jp

５－４．Expenses (up to 100 Japanese characters or xx English words)

Course title [Subtitle]	Advisor in charge [Affiliation]
Clinical Data Mining	Yasutomi Kinosada [UGS-DDMIS]

Academic year		2013
Graduate school		UGS-DDMIS
Division		Required Basic Subject
Course category	Subject category	Basic Subject
	Classification	Required Basic Subject
	Category for grading subject	
Year of study		ALL
Limitations on registration		
Term		Spring
Timetable		
Remarks for timetable		
Type of class		
Number of credits		1
Required / elective subject		
Classroom		
Course title		Clinical Data Mining
Subtitle		
Course title [English]		Clinical Data Mining
Subtitle [English]		

Registration code	Subject number	Curriculum
SKH0020	0020	

1. Aims of the class (aims of the class, goals, learning objectives)

Now that the human genome has been deciphered, the focus of genome research is slowly moving to the issue of how best to integrate and analyze the vast amount of diverse information that has been acquired. Moreover, new technology and techniques need to be developed in order to utilize the information obtained, and the information also needs to be applied to translational research or order-made medicine where drugs or treatment is tailored to individual patients.

The course provides lectures on data mining methods, which are garnering attention as methods to acquire new information. In particular, the lectures will cover techniques to extract information from the academic literature, text mining methods, and data mining methods to discover new information from the large quantities of medical information and information on adverse drug reactions currently available. The lectures will also introduce information processing methods that can be used to ensure effective

clinical application of predictive information that can be inferred from genomic, lifestyle, and environmental information.

2． Schedule of the class (type of class, prerequisites, etc.)

Students must be sufficiently able to apply mathematical knowledge (e.g., statistics, set theory, differential calculus, and integral calculus). The course will involve lectures on the methodology used in the various types of methods employed to discover new information or regularity within a large datasets. In particular, there will be detailed lectures on the mathematical significance and interpretation of individual methods of data mining in wide use, such as outlier tests, data classification and stratification, correlation and discrimination between data sets, and forecasting.

In order to utilize data mining methods practically, we must not only take a mathematical approach to vast quantities of data, but also have a deep understanding of data semantics and data expression methods. Therefore, the goal of this course is for students to acquire knowledge in computer science in a broad sense, and of ontology and XML in a narrow sense.

2－2． Requirements (prerequisites, etc.) (up to 200 Japanese characters or xx English words)

There are no particular requirements. However, students should already have general knowledge of computer science and mathematics to analyze data.

3． Textbook(s), references, etc.

Lecture materials will be distributed during each lecture.

You are recommended to bring a dictionary since the lecture material would be in English.

5－1． Message to students (up to 200 Japanese characters or xx English words)

Data mining requires reasoning (to take a strategic approach to data analysis) as well as the courage to patiently repeat processes of trial and error. Students are expected to be active participants in this course.

5－2． Office hours (up to 100 Japanese characters or xx English words)

Every Monday (6:00 pm to 8:00pm)

Pls come to my room at Medical Building

5－3． Contact information

[Room] Medical Building “2 S 37”

[Tel] 230-6620

[Mail] ykns@gifu-u.ac.jp

5－4． Expenses (up to 100 Japanese characters or xx English words)

There are no particular expenses, but notebook PC should be useful in this lecture.

Course title [Subtitle]	Advisor in charge [Affiliation]
Regulatory Science	Atsushi Tamura ［Visiting Professor (PMDA)］

Academic year		2013
Graduate school		UGS-DDMIS
Division		Required Basic Subject
Course category	Subject category	Basic Subject
	Classification	Required Basic Subject
	Category for grading subject	
Year of study		ALL
Limitations on registration		
Term		Spring
Timetable		
Remarks for timetable		
Type of class		
Number of credits		1
Required / elective subject		
Classroom		
Course title		Regulatory Science
Subtitle		
Course title [English]		Regulatory Science
Subtitle [English]		

Registration code	Subject number	Curriculum
SKH00600	0060	

１．Aims of the class (aims of the class, goals, learning objectives)

Regulatory science refers to the science of evidence-based accurate prediction, evaluation and assessment of the fruits of science and technology in order to benefit people and society, using the fruits of science and technology in the most beneficial way to ensure balance between people and society.

２．Schedule of the class (type of class, prerequisites, etc.)

２－２．Requirements (prerequisites, etc.) (up to 200 Japanese characters or xx English words)

３．Textbook(s), references, etc.

５－１．Message to students (up to 200 Japanese characters or xx English words)

５－２．Office hours (up to 100 Japanese characters or xx English words)

５－３．Contact information

５－４．Expenses (up to 100 Japanese characters or xx English words)

Course title [Subtitle]	Advisor in charge [Affiliation]
Biomedical Ethics	Yasuo Bunai［Gifu University］ Yukiyoshi Tsukata［Gifu University］

Academic year		2013
Graduate school		UGS-DDMIS
Division		Required Basic Subject
Course category	Subject category	Basic Subject
	Classification	Required Basic Subject
	Category for grading subject	
Year of study		ALL
Limitations on registration		
Term		Spring
Timetable		
Remarks for timetable		
Type of class		
Number of credits		1
Required / elective subject		
Classroom		
Course title		Biomedical Ethics
Subtitle		
Course title [English]		Biomedical Ethics
Subtitle [English]		

Registration code	Subject number	Curriculum
SKH00400	0040	

1．Aims of the class (aims of the class, goals, learning objectives)

The course will include lectures introducing the basic issues in bioethics in medicine and pharmacology in general, such as:

① The social nature of medical treatment

② The intermediary/multi-layered relationship between “the sacredness of life” and “the quality of life”

③ The relationship between “public” and “private” in medical treatment

④ Recent bioethical issues in infertility treatments and organ transplantation

⑤ Medical/pharmacological research and bioethics

The course will also look at cutting-edge medicine and medical and pharmacological research (e.g., gene manipulation, organ regeneration, and drug discovery) from a new paradigm that considers historical bioethics.

２．Schedule of the class (type of class, prerequisites, etc.)

(Yasuo Bunai / 6 classes)

Introduction to bioethics related to medicine and pharmacology in general

(Yukiyoshi Tsukata / 9 classes)

Introduction to bioethics related to cutting-edge medicine and medical/pharmacological research

２－２．Requirements (prerequisites, etc.) (up to 200 Japanese characters or xx English words)

３. Textbook(s), references, etc.

Information on textbooks and other literature will be provided separately, such as during the lectures.

５－１．Message to students (up to 200 Japanese characters or xx English words)

５－２．Office hours (up to 100 Japanese characters or xx English words)

５－３．Contact information

[Room] Bunai Medical Building 6 S 37

Tsukata Medical Building 4 S 05

[Tel] Bunai 230-6416 / Tsukata 230-6530

[Mail] Bunai bunaiy@gifu-u.ac.jp / Tsukata tsukata@gifu-u.ac.jp

５－４．Expenses (up to 100 Japanese characters or xx English words)

Course title [Subtitle]	Advisor in charge [Affiliation]
Internship	Kazutoshi Kiuchi［UGS-DDMIS］

Academic year		2013
Graduate school		UGS-DDMIS
Division		Required Basic Subject
Course category	Subject category	Basic Subject
	Classification	Required Basic Subject
	Category for grading subject	
Year of study		ALL
Limitations on registration		
Term		Spring and Fall
Timetable		
Remarks for timetable		
Type of class		
Number of credits		1
Required / elective subject		
Classroom		
Course title		Internship
Subtitle		
Course title [English]		Internship
Subtitle [English]		

Registration code	Subject number	Curriculum
SKH00500	0050	

1. Aims of the class (aims of the class, goals, learning objectives)

Through training and practice in the company or laboratory related to drug discovery and medical information, a graduate student will directly contact with cutting-edge science and researcher's conception in these fields, providing him with opportunities to experience ~~the~~ technical skills, problem-solving capacities and real demands in the working-world.

2. Schedule of the class (type of class, prerequisites, etc.)

A graduate student should make a plan for hands-on training in the internship system and complete it within a time frame

２－２．Requirements (prerequisites, etc.) (up to 200 Japanese characters or xx English words)

There are no particular requirements.

３．Textbook(s), references, etc.

A graduate student should comply with ~~the~~ instructions provided from the company or laboratory in the internship system.

５－１．Message to students (up to 200 Japanese characters or xx English words)

５－２．Office hours (up to 100 Japanese characters or xx English words)

５－３．Contact information

[Room]　総合研究棟　601

[Tel]　058-293-2651

[Mail]　kiuchi@gifu-u.ac.jp

５－４．Expenses (up to 100 Japanese characters or xx English words)