<table>
<tr><td>授業科目名
Title of Course</td><td colspan="3">Pathologic Basis of Disease</td></tr>
<tr><td>対象学年
Eligible Students</td><td>Junior students of School of Medicine</td><td>単位
Credits</td><td>6</td></tr>
<tr><td rowspan="4">科目責任者
Responsible Instructor</td><td rowspan="2">YASUI WATARU</td><td>所属
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<tr><td rowspan="2">科目コーディネーター
Course Coordinator</td><td rowspan="2">Same as above responsible instructors</td><td>所属
Affiliation</td><td>(内線　Ext. Number　　)</td></tr>
<tr><td>メール
E-mail</td><td></td></tr>
<tr><td>授業方法
Lesson Style</td><td colspan="3">Style of lectures: Tutorial method (discussions, debates, presentations by students, and submission of reports), lectures, practical training in microscopic observation, submission of reports.
Audio-visual aids, such as PowerPoint and prepared histopathology specimens, will be used.

The tutorial method is mainly used, with key issues being covered by lectures in line with the Model Core Curriculum. Tutorial sessions will be linked with lectures and onsite training sessions. As for the histopathology of representative pathological conditions and diseases, practical sessions using prepared specimens and virtual slides will be provided.</td></tr>
<tr><td>概要
Overview</td><td colspan="3">The objective is to acquire basic knowledge and skills for the process from detecting pathomorphological lesions to identifying abnormalities at a genetic and molecular level in order to better understand the overview and pathogenesis of diseases and their diagnoses and treatment. The course will be mainly based on the student-led tutorial method and therefore students are expected to identify issues for learning and solve them on their own. Items to learn will change every week and therefore it is important for students to review and understand what they have learned during a week before the next week begins.
General instructional objective (GIO)
(1) [Cell injury] Understand causes and mechanisms of cell injury, responses to cell injury, and morphological changes from cell injury.</td></tr>
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	(2) [Circulatory disorders] Understand causes and conditions of circulatory disorders. (3) [Inflammation] Understand the overview and repair process of inflammation. (4) [Genetic abnormalities and disease/developmental abnormalities] Understand relationships between genetic/chromosomal abnormalities and the occurrence of developmental abnormalities and diseases. (To be studied mainly in lectures on Human Genetics) (5) [Tumors] Understand the overview of tumors, mechanisms of tumor development, pathophysiology, and pathological morphology of tumors, and their significance in diagnosis. (6) [Metabolic abnormalities] Understand diverse pathological conditions and morphological changes caused by metabolic abnormalities and storage diseases.
到達目標 Academic Goals	Explain the diversity, causes and significance of cell injury, degeneration and death. Explain the characteristics of morphological changes in injured, degenerated and dead cells and tissues. Explain differences between necrosis and apoptosis. Explain the pathology of abnormal carbohydrate metabolism. Explain the pathology of protein and amino acid metabolic disorders. Explain the pathology of lipid metabolism abnormality. Explain the pathology of abnormal nucleic acid/nucleotide metabolism. Explain the pathology of abnormal mineral metabolism. Explain differences between ischemia, hyperemia, congestion and stasis, and causes and pathology of each of them. Explain the causes of bleeding and the mechanisms of hemostasis. Explain the causes and pathology of thrombosis. Explain the types and pathways of emboli and the pathology of embolism. Explain the types and pathology of infarcts. Explain the definition of inflammation. Explain the classification, and morphological and temporal changes of inflammation. List the four types of allergies and give an outline of their developmental mechanisms and a morphological picture of representative diseases. Give an outline of representative autoimmune disorders. Explain inflammatory changes caused by infection. Give an outline of the process of wound healing.

	Explain the definition of tumors. Explain regeneration, repair, enlargement, hyperplasia, metaplasia, dysplasia, and anaplasia of tissues. Explain differences between benign and malignant tumors. Explain differences between epithelial and nonepithelial tumors. Explain heteromorphism and polymorphism of tumor cells. Give an outline of the relationships between tumors and chromosomal aberrations. Explain the local growth, local infiltration, and metastasis of tumors. Give an outline of genetic and external factors involved in oncogenesis. Give an outline of changes in cancer-related genes (oncogenes and tumor suppressor genes). Explain the objectives and significance of pathological diagnosis. Explain the objectives and significance of pathological autopsy.
講義日程 Class Schedule	See the attached schedule.
出席の取り扱い Class Attendance Policy	Attendance is taken every lecture using the Student Attendance Management System. A student whose attendance is less than two-thirds of all the classes is not eligible for taking the final examination.
評価項目 Evaluation Item	Achievement level of goals (basic understanding and application of knowledge) Presentation abilities
評価法 Evaluation Method	The grading will be evaluated based on tutorial-based attendance, the level of contribution to group discussions, the content of reports, the written examination and practical examination (virtual slide histopathology test) at the end of the course.
履修上の注意アドバイス Suggestions/Advice for Taking the Course	The course will be mainly based on the student-led tutorial method and therefore students are expected to identify issues for learning and solve them on their own. Items to learn will change every week and therefore it is important for students to review and understand what they have learned during a week before the next week begins. Students are required to have adequate knowledge of human anatomy, tissue and cell functions, and biological responses.
成績評価の基準 Basis of Performance Evaluation	The grading will be evaluated based on tutorial-based attendance, the contribution to group discussions, the contents of reports, and the written examination and practical examination (virtual slide histopathology test) at the end of the course.
推奨参考書 Recommended	1. *Hyojun Byorigaku*. Igakushoin 2. *New Essential Byorigaku (New Essentials of Pathology)* 6th ed. Ishiyaku

Reference Books	Publishing Inc. 3. *Rubin Byorigaku (Rubin's Pathology)*. Nishimura Shoten 4. *Kikan Byorigaku (Organ Pathology)*. Nanzando 5. Robbins: *Pathologic Basis of Disease* (Saunders) 6. Anderson, Kissane: *Pathology* (Mosby) 7. *Soshiki Byori Atlas (Atlas of Histopathology)*. Bunkodo 8. *Macro Byori Atlas (Atlas of Macropathology)*. Bunkodo