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## [Course aims]

Today, cancer is considered a multifactorial genetic disorder and a lifestyle-related disease. In addition, important discoveries and developments continue to be made in the field of cancer treatment, including explaining the cellular genetics and increasing the five-year survival rate of individuals diagnosed with cancer through molecular biological studies of cancer cells. On the other hand, there are no effective treatments for advanced cancer, and in fact, cancer is the number one cause of death in Japan.

In this course, we will take into consideration these circumstances related to cancer treatment and study the natural history of cancer, the biological characteristics of cancer, cancer and immunity, the causes and prevention of cancer, and the characteristics of cancer patients from a pathophysiological perspective, as knowledge of oncology and the pathophysiology of cancer are needed in order to practice specialized cancer care.

## [Course objectives]

To understand the process of cancer development, the characteristics of cancer, the mechanisms of metastasis, and the diagnosis/treatment of cancer.

## [Course content]

Class	Theme	Content	Academics
1 { 4	Proliferation, differentiation, and death of ordinary cells	1) Proliferation and differentiation of ordinary cells 2) Death of ordinary cells	Masanobu Kobayashi Noriko Hira
5 { 8	Development and characteristics of cancer cells	1) What is cancer? 2) How do cancer cells arise? Genetic defects 3) Causes of cancer	Masanobu Kobayashi Rena Morita
9 { 11	The causes of death due to cancer-Metastasis	1) What is metastasis? 2) The mechanism of metastasis	Junichi Hamada
12 { 13	Clinical treatment for cancer	1) Diagnosis and treatment 2) Multimodal treatment (surgery, radiation, chemotherapy, immunotherapy) and palliative care	Masanobu Kobayashi Rena Morita
14 { 15		1) Cancer prevention	Masanobu Kobayashi Noriko Hira Rena Morita

## [Class implementation method]

Combination of face-to-face learning and distance learning

Class implementation depends on the implementation policy of each department (graduate school) or school.

## [Grading policies]

Comprehensive evaluation from Q&As, investigation of assigned problems, and presentations with Q&As (100%).

## [Textbook]

Kobayashi, Masanobu: Easy Oncology. Nankodo Co., Ltd.

## [Reference book]

Kobayashi, Hiroshi: Cancer Prevention. New Edition, Iwanami Shoten, Publishers.

## [Preparation for course]

Read "Cancer Topics" on the National Cancer Institute website.