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| Category<br>(科目区分)  | Specialized subjects / Oncology Specialist Training System                       |                         |   |
| Course Title<br>(授業科目名)   | cancer genome and cancer biology   |                         |   |
| Instructors<br>(担当者名)   | Hiroyuki Shibata   | Academic Year<br>(配当年次) | All grades  |
| Required Course /<br>Elective Course<br>(必修/選択)   | Selective  | Credits<br>(単位数)        | 2   |
| Class Format<br>(授業形態)  | Web class  |                         |   |
| Schedule<br>(開講期間)  | 2023 April-2024 March  |                         |   |
| Class Date/Period<br>(開講曜日・時間)  | —  |                         |   |
| Course Outline/ Course Objectives (授業の概要・到達目標)  |  |                         |   |
| According to the progress in cancer biology, diagnosis of cancer genome analysis has evolutionary impact on cancer treatment. Cancer caregivers in the future should understand the underlying cancer biology. Further, they should make efforts to develop new strategy of cancer treatment by using these knowledges. In these classes, we will give the trainees the knowledges and skills to dissolve the problems in cancer. |  |                         |   |
| Course Planning (授業計画)  |  |                         |   |
|   | Course Outline/ Course Objectives(授業の概要及び到達目標)<br>(Contents of Class) ( (授業内容) ) | Instructor<br>(担当教員名)   | Department (講座名)<br>Class Room [実施場所]                           |
| 1   | Cancer Biology 1   | Yasufumi Omori          | Dept. Molecular Pathology                                       |
| 2   | Cancer Biology 2   | Yasufumi Omori          | Dept. Molecular Pathology                                       |
| 3   | Cancer cell growth and metastasis  | Yasufumi Omori          | Dept. Molecular Pathology                                       |
| 4   | Ethical issues in cancer treatment   | Yasufumi Omori          | Dept. Molecular Pathology                                       |
| 5   | cancer stem cells  | Yasufumi Omori          | Dept. Molecular Pathology                                       |
| 6   | hereditary cancer and cancer genome  | Hideki Shimodaira       | Tohoku Medical and<br>Pharmaceutical University                 |
| 7   | KEAP1-NRF2 system in cancer  | Masayuki Yamamoto       | Tohoku University   |
| 8   | Exosome in cancer treatment  | Kiyotaka Shiba          | Cancer Institute  |
| 9   | Nursing of research mind   | Okio Hino               | Juntendo University   |
| 10  | Macroimaging of cancer r   | Yoshio Bando            | Dept. Anatomy   |
| 11  | Liquid biopsy of cancer  | Takahiro Ochiya         | National Cancer Center  |
| 12  | Gene alteration and microenvironment of digestive organ cancer                   | Masanobu Ohshima        | Kanazawa University   |
| 13  | Endoplasmic reticulum transport and cancer                                       | Kota Saito              | Dept.Biological Informatics<br>and Experimental<br>Therapeutics |
| 14  | epithelial mesenchimal transition of cancer                                      | Masamitsu Tanaka        | Dept. Molecular Medicine<br>and Biochemistry                    |
| 15  | Genome Editing   | Keiji Kuba              | Dept. Biochemistry and<br>Metabolic Science                     |
| 16  | regulatory T cell and cancer   | Takashi Maruyama        | Dept. Immunology  |
| 17  | Cancer epidemiology  | Kyoko Nomura            | Dept. Public Health   |
| 18  | Carcinogenesis induced by viruses  | Teru Kanda              | Tohoku Medical and<br>Pharmaceutical University                 |
| 19  | Drug development for unmet medical needs   | Yoshiharu Iwabuchi      | Tohoku University   |
| 20  | Carcinogenesis induced by envrinmental factors                                   | Katsutoshi Murata       | Dept. Environmental<br>Health Sciences                          |
| Grading Criteria (成績評価の基準と方法)   |  |                         |   |

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| submission of the report                                    |
| <b>Contact Information</b> (問い合わせ先(氏名, メールアドレス等) )          |
| Name: Hiroyuki Shibata / E-mail: hiroyuki@med.akita-u.ac.jp |
| <b>Coment</b> (その他特記事項)                                     |
| Self education by using web classes                         |