

Course Title	Advanced Animal Cell Engineering		
Instructor	Takuya KANAZAWA		
Code	MA051500	Semester	2nd (Oct-)
Credit(s)	1	Day/Period	Wed, 1
Description Code	A-BIS-611		
Outline	Molecular mechanisms for growth and differentiation of mammalian cells, and organogenesis of animals, will be lectured. Molecules involved in controls of growth and differentiation, cell to cell interactions for organogenesis will be explained. Students are required to present orally the related themes, using prepared power point projections.		
Keywords	Cyclins, Cyclin-dependent kinase (cdk), MAP kinase, Tumor-suppressor proteins, Mitotic spindle, Tissue-specific gene expression, Rudiment-mesenchyme interactions, Morphogenetic genes		
Goals	Can explain molecular mechanisms for growth and differentiation of cells and mammalian organogenesis, using relevant key words. Diploma policy: 1 Academic and research skills in the specialized field		
Course Plan	<ol style="list-style-type: none"> <li>1. Introduction to growth and differentiation of mammalian cells, and organogenesis</li> <li>2. Molecular mechanisms for cell cycle and its control 1</li> <li>3. Molecular mechanisms for cell cycle and its control 2</li> <li>4. Molecular mechanisms for cell differentiation 1</li> <li>5. Molecular mechanisms for cell differentiation 2</li> <li>6. Molecular mechanisms for organogenesis 1</li> <li>7. Molecular mechanisms for organogenesis 2</li> <li>8. Oral presentation by students of a related theme</li> </ol>		
Advice for Preview and Review	Review documents that are distributed during class. For oral presentations by enrollees, survey first original and review literatures which related to the theme, and then prepare a power point file for presentation.		
Prerequisite	Registration shall send e-mail to Prof. Kanazawa at least 3 days in advance to the beginning day. Students are prerequisite to have studied Cell Biology and Developmental Biology at a beginners level. Course plan may change for reasons. Questions of related matters will be accepted orally during class-time and by e-mail during off-class time.		
Grading Criteria	Based on quality of presented power point file (50%) and oral presentation (50%).		
Texts/References	No particular text books or references are indicated, but reference documents are distributed during class.		