

A Master Course	Class Style	Practice	FB : Compulsory 3 credits AM : Free elective 3 credits GM : Compulsory 3 credits	Fiscal year	2020
Course Title	Biological Science Practicum	Numbering code	FB : GMDMFB1010 AM : GMDMAM1013 GM : GMDMG1004		
Objectives	Clinical medicine research on surgical therapy and pharmacotherapy through experience in actual medical settings				
Semester	Second half of the 1st year				
Location					
Couse Director	Atsuro Miyata (email address : amiyata@m3.kufm.kagoshima-u.ac.jp)				
G I O	1	Understand deeply laboratory techniques to be required for medical science research by getting the fundamental knowledge and by performing experiments directly.			
S B O	1 2 3 4 5 6 7 8 9 10 11 12	<p>1 Be able to handle experimental animals properly</p> <p>2 Understand the analysis methods by using tissues or animals for drug action.</p> <p>3 Be able to understand the principles of column chromatography and perform the protein analysis.</p> <p>4 Understand the principles of the enzymatic reaction and immunological reaction.</p> <p>5 Be able to measure the nutrients (amino acids, sugar, free fatty acids)</p> <p>6 Understand the principles of mass spectrometry and be able to identify peptides promptly</p> <p>7 To be able to explain the outlines of recombinant DNA experiments and perform basic experiments (PCR, ligation, transformation, gel electrophoresis and so on)</p> <p>8 Understand the principles of live imaging and image processing.</p> <p>9 To be able to explain the methods of transgene to cultured cells and perform it</p> <p>10 Understand the functions of cardiovascular, respiratory, and nervous systems by experiments</p> <p>11 Understand the fundamental process of tissue preparation for microscopy and electro-microscopy</p> <p>12 Understand and perform tissue staining including HE staining and immunoreactive staining</p>			
Outline				Instructor	
1~2	Pharmacological experiments			Atsuro Miyata et al	
3~4	Biomedical experiments			Shosei Kishida et al	
5~6	Nutritional experiments			Masahisa Horiuchi et al	
7~8	Molecular biological techniques for gene transfer into cells and tissues			Hiroyuki Okuno et al	
9~10	Physiological experiments			Tomoyuki Kuwaki et al	
11~12	Histological experiments			Ken-ichiro Kosai et al	
Teaching Materials	They will be introduced during practical training				
Grading Methods	Active participation in practical training: 70%; contents of questions and answers: 30%				
Contact	Office hours	Contact the medical department/section in charge.			
	E-mail	amiyata@m.kufm.kagoshima-u.ac.jp			
		Contact the medical department/section in charge.			
Others	Nothing in particular				