

Biomedical master (UNIL), specialization in 'Immunology and Cancer'

Module 3 ECTS credits: 15 (total of 2nd semester)

Responsible: S.Luther (slutsher@unil.ch); secretary: F.Flejszman (Francoise.Flejszman@unil.ch)

2nd semester

COURSE	RESPONSIBLE	TEACHER	SUBJECTS	C	S			
C Immunology II	S.Luther (SL)	S.Luther (SL) M.Thome (MT) W.Held (WH) F.Tacchini (FTC) P.-C.Ho (PCH)	Course introduction, Lymphoid organs	6h				
			Signaling in lymphocytes	5h	1h			
			NK-cells, Innate lymphoid cells	3h				
			Macr.,neutrophils, T cell differentiation	5h				
			Metabolism of T cells and macrophagi	3h	1h			
C Immunology III	S.Luther (SL)	D.Velin (DV) M.Perreau (MP) P.Broz (PB) T.Roger (TR) C.Pot (CP) C.Jandus (CJ)	Mucosal immunity and microbiome	5h	1h			
			Acute and chronic viral infections	4h	1h			
			Innate Immunity and bacterial infectio	4h				
			Sepsis	2h	1h			
			Autoimmunity and neuroinflammation	2h				
			Mouse models, immune monitoring	2h				
				Total	41h			
C Cancer II	P.Romero (PR)	D.Hanahan (DH) E.Misiaglia (EM) N.Riggi (NR) L.Fajas (LF)	Cancer: a summary	2h				
			Cancer genetics and heterogeneity	4h				
			Epigenetics of cancer	2h				
			Metabolism of cancer cells	2h				
			Tumor vessels and microenvironment	5h	1h			
C Cancer III	P.Romero (PR)	T.Petrova (TP) J.Joyce (JJ) D.Gfeller (DGF)	Tumor invasion and metastasis, gliom	5h	1h			
			Genetics of antitumoral immunity, omi	2h				
							Total	22h
							27h	
C Treatments	P.Romero (PR)	P.Romero (PR) L.Kandalafi (LK) M.-C.Vozenin (MV) C.Arber (CA) D.Golshayan (DGo) N.Collin (NC) D.Nardelli (DN) I.Knezevic (IK) D.Comte (DC)	Antitumor immunity/immunotherapy	4h	1h			
			Drug development	2h				
			Radio- and Chemotherapy	2h	1h			
			Leukemias and therapies	2h	1h			
			Immunology of organ transplantations	2h				
			Vaccines	3h	1h			
			HPV cancers and vaccines	3h	1h			
			Regulatory evaluation of vaccines	2h				
			Allergies and treatments	2h				
							Total	22h
				28h				

COURSE	RESPONSIBLE	TEACHER	SUBJECTS	C	PW
C Protein analysis	M.Quadroni (MQ)	MO, V.Zoete (VZ), C.Jandus (CJ), P.Baumgartner (PB), M.Bassari (MB)	Peptide-based assays, 3D modeling, proteomics	17h	
C Bioinformatics	D.Gfeller (DGF)	DGF	Bioinformatics	2h	
C Biostatistics	S.Luther (SL)	M. Robinson (MR)	Biostatistics	2h	
C Common courses O.Bonny				Clinical Medicine	22h

PRACTICAL WORK	RESPONSIBLE	TEACHER	SUBJECTS	C
PW Proteomics and 3-D modeling	M.Quadroni (MQ)	MQ, C.Jandus (CJ), P.Baumgartner (PB), L.Derre (LD)	Peptide-based assays, mass spectrometry, 3D modeling	6 days
PW Bioinformatics	D.Gfeller (DGF)	DGF	Basics of bioinformatics and biostatistics	4h
PW Biostatistics	S.Luther (SL)	M. Robinson (MR)	Biostatistics	13h

PW: Immunology /Cancer	RESPONSIBLE	TEACHER	SUBJECTS	C
	S.Luther (SL)	SL	Histology (Immunology)	4.5 days
		A.Nobile (AN)	Histology (Cancer)	
	A.Wilson (AW)	AW	Flow cytometry	4.5 days

E-learning exercises	RESPONSIBLE	TEACHER	SUBJECTS	C
E-learning Intro	N.Debard (ND)	ND	Introduction	1h
ABL proteomics	M.Quadroni (MQ)	MQ + K.Zaman (KZ)	Omics of cancer	4h
ABL immunology	S.Luther (SL)	SL + MP + M.Descatoire (MD)	Experimental design	2h
gr CBL cancer	P.Romero (PR)	O.Naveiras (ON)	Clinical case	2h

S/E Grant writing and defense	RESPONSIBLE	TEACHER	SUBJECTS	C
	SL			2h

Master thesis	RESPONSIBLE	TEACHER	SUBJECTS	C
	S.Luther (SL)	Group leaders		1.5 Semesters

C: Course (lecture) S: Seminar / journal club (JC) PW: Practical Work (TP) CBL: Case-Based Learning ABL: Article-Based Learning

Important: all courses and lecture pdf's are to be given in English!

WEEK 1: 18.02 to 22.02

	mo 18	tu 19	we 20	th 21	fr 22
8H	C-Immunology II overview (SL)	C-Immunology II SL	C-Immunology II SL	C-Immunology II MT	C-Immunology II MT
9H					
10H	C-Cancer II DH	C-Cancer II EM	C-Cancer II EM	C-Treatments PR	C-Treatments MV
11H					
12H					
13H	Common courses Clinical Medicine	C-Cancer II NR	C-Immunol.II MT	C-Immunology III CJ	C-Immunology II FTC
14H			C-Treatments PR	C-Treatments NC	
15H		prepare JC/grant			prepare JC/grant
16H					
17H					
	F308, then CHUV	F308	F308	F308	F308

WEEK 2: 25.02 to 01.03

	mo 25	tu 26	we 27	th 28	fr 01
8H	C-Treatments NC	C-Protein analysis (MQ)	C-Proteomics by MS (MQ)	C-Proteomics by MS (MQ)	C-Protein analysis (MQ)
9H					
10H	C-Immunology II FTC	intro e-learning	PW Proteomics	PW Proteomics	PW Proteomics
11H		C-Immunol.II FTC			
12H					
13H	Common courses Clinical Medicine	C-Protein analysis (MQ)		PW Proteomics	PW report writing
14H				PW Proteomics	
15H		prepare JC/grant			PW report writing
16H					PW Q&A
17H					
	F308, then CHUV	F308	F308/library	F308/library	F308/library

WEEK 3: 04.03 to 08.03

	mo 04	tu 05	we 06	th 07	fr 08
8H		PW Peptide-based assays	PW Peptide-based assays	PW report writing	C-Proteomics by MS (MQ)
9H	PW Intro (PB)				
10H	C-Cancer III DGF	C-Protein analysis (CJ/PB)	PW report writing	PW Peptide-based assays	C-Protein analysis (VZ)
11H					
12H					
13H	Common courses Clinical Medicine	PW Peptide-based assays	PW Peptide-based assays	PW Peptide-based assays	C-Prot. analy (VZ)
14H					PW-3D modelling (VZ)
15H					prepare JC/grant
16H					
17H					
	F302, then CHUV	F302/F304/library	F302/F304/library	F302/ library	F302/ library

WEEK 4: 11.03 to 15.03

	mo 11	tu 12	we 13	th 14	fr 15
8H					C-Cancer III TP
9H	C-Bioinformatics DGF	PW/Bioinformatics DGF	ABL preparation	ABL preparation	
10H					S-Treatments PR
11H					S-Immunol.II MT
12H					
13H	Common courses Clinical Medicine	meet master supervisor			C-Immunology II WH
14H		ABL preparation	ABL preparation	E-Proteomics: ABL	
15H					
16H					
17H					
	F302, then CHUV	F302/ library	library / F302	library	F302

WEEK 5: 18.03 to 22.03

	mo 18	tu 19	we 20	th 21	fr 22
8H	C-Immunol.II WH	C-Cancer III TP	C-Immunology III MP	C-Immunology III DV	C-Treatments LK
9H	C-Cancer III TP	S-Cancer III TP			
10H	C-Immunology III TP	C-Immunology III MP	C-Cancer III JJ	C-Cancer III JJ	C-Immunol.III DV
11H				S-Cancer III JJ	S-Immunol.III DV
12H				S-treatments MV	
13H	Common courses Clinical Medicine	C-Cancer III JJ	C-Immunology III DV		C-Treatments DGo
14H					
15H			S-Immunol.III MP		
16H					Rencontres carrières' à Dorigny
17H					
	F302, then CHUV	F302	F302	F302	F302

WEEK 6: 25.03 to 29.03

	mo 25	tu 26	we 27	th 28	fr 29
8H	C-Cancer III LF	C-Treatments DN	C-Treatments CA	C-Treatments IK	C-Treatments DN
9H					
10H	C-Immunology III PB	S-Immunol.III TR	C-Immunology II PCH	C-Immunol.II PCH	S-Treatments DN
11H		S-Treatments NC		S-Immunol.II PCH	S-Treatments CA
12H					
13H	Common courses Clinical Medicine	C-Immunology III PB	C-Immunology III CP	C-Immunology III TR	C-Treatments DC
14H					
15H					
16H					
17H					
	F302, then CHUV	F302	F302	F302	F302

WEEK 7: 01.04 to 05.04

	mo 01	tu 02	we 03	th 04	fr 05
8H					PW Histology
9H	ABL/CBL preparation	ABL/CBL preparation	ABL/CBL preparation	histology course preparation	PW Histology
10H			E-Immunology: ABL		
11H					
12H					
13H	Common courses Clinical Medicine		C Histology: introduction	histology course preparation	PW Histology
14H			ABL/CBL preparation		
15H				E-Cancer: CBL	
16H					
17H					
	library, then CHUV	library (F302)	library/ F302	library/ F302	library

WEEK 8: 08.04 to 12.04

	mo 08	tu 09	we 10	th 11	fr 12
8H			PW FACS: acquisition	report writing (Histo) or FACS acquisition	PW FACS: analysis
9H	prepare histology presentation	S histology: presentations	PW FACS: acquisition		PW FACS: analysis
10H					
11H					
12H					
13H	PW Histology: help with reports	C FACS: introduction	PW FACS: acquisition	report writing (Histo) or FACS acquisition	PW FACS: analysis
14H					
15H	prepare histology presentation	FACS prep.	PW FACS: acquisition		PW FACS: analysis
16H					
17H					
	library (F302)	F302/ library	F304/2 (or library)	library (or F304/2)	library (F302)

EASTER HOLIDAYS APRIL 19 TO APRIL 26, 2019

Master of Science in Medical Biology - Study path in Immunology and Cancer - Spring 2019

WEEK 9: 15.04 to 19.04

	mo 15	tu 16	we 17	th 18	fr 19
8H	FACS report writing	FACS report writing	exam preparation	exam preparation	Easter holidays 19 - 26.4.19
9H					
10H	PW FACS: help with reports				
11H					
12H					
13H	C-FACS&more AW	FACS report writing			
14H	C-Histo&more SL				
15H	C Feedback session / Apéro				
16H					
17H	library / F302	library / F302			

WEEK 10: 29.04 to 03.05

	mo 29	tu 30	we 01	th 02	fr 03
8H					
9H					
10H					
11H					
12H	exam preparation	exam preparation	exam preparation	exam preparation	exam preparation
13H					
14H					
15H					
16H					
17H					

WEEK 11: 06.05 to 10.05

	mo 06	tu 07	we 08	th 09	fr 10
8H		written exam			oral exam
9H					
10H		written exam			oral exam
11H					
12H	exam preparation				
13H					oral exam
14H					
15H					oral exam
16H					
17H		F308			F308

WEEK 12: 13.05 to 17.05

	mo 13	tu 14	we 15	th 16	fr 17
8H					
9H					
10H					
11H					
12H	grant proposal	grant proposal	grant proposal	grant proposal	grant proposal
13H					
14H					
15H					
16H					
17H					

WEEK 13: 20.05 to 24.05

	mo 20	tu 21	we 22	th 23	fr 24
8H		grant proposal			Dies academicus
9H					
10H					
11H					
12H	grant proposal		preparation of grant defense	preparation of grant defense	
13H					
14H		preparation of grant defense			
15H					
16H					
17H					

WEEK 14: 27.05 to 31.05

	mo 27	tu 28	we 29	th 30	fr 31
8H				Ascension	day off
9H	preparation of grant defense	Master work	Master work		
10H					
11H					
12H					
13H	Defense of grant proposal				
14H		Master work	Master work		
15H					
16H					
17H	F302 / F308				

3rd semester

Master work all day, all semester

Hours: all lectures start 15 minutes after the hour (8h on schedule = 8.15h)
Lecture room: F308 / F302 (DB, Epalinges)
Computer room: F302 (DB, Epalinges)
Lab for practicals: F304 (DB, Epalinges)
Exams: F308 (DB, Epalinges)

Dates important for lecturers: Sport school holidays: 23.2.-3.3.2019
 Spring school holidays: 13.-28.4.2019
 SSAI (Lugano): 5-6.9.2019
 WIRM Davos: 6-9.4.2019
 Wolfsberg Immunology: 13-15.3.2019
 LS2 (USGEB; Zurich): 14-15.2.2019

Lecturers in Immunology:
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Lecturers in Cancer Biology:
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Lecturers in Protein analysis:
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 Michal Bassani <michal.bassani@chuv.ch>,
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Students: Easter Friday 19.04.2019
 Easter Monday 22.04.2019
 UNIL Easter holidays: 19-26.04.2019
 Ascension 30.05.2019
 Lundi de Pentecôte 10.06.2019
 First day of spring semester: Monday 18.02.2019
 Last day of spring semester: Friday 31.05.2019
 Dies academicus 24.05.2019
 Last day of autumn semester 20.12.2019
 Exam session 11.6.-6.7.2019
 Repeat exam session 19.8.-7.9.2019
 Submission of master work report 10.01.2020
 Defense of master work (last possible date) 31.01.2020

E-learning / website / HSeT:
 Nathalie Debard <nathalie.debard@hset.org>,
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Practicals
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Master students:	EMAIL	EMAIL	EMAIL

Exams	Semester	Grade				
2nd	practical	1/8	Journal club (oral presentation)	theoretical	50%	written exam
		1/8	PW report 'peptide-based assays'			4h (4 topics in immunology and 4 topics in cancer biology; topics announced at end of courses)
		1/8	PW report 'protein analysis by mass spectrometry'		50%	oral exam
		1/8	ABL 'proteomics' (oral presentation)			30' (15' preparation and 15' exam), mix of immunology and cancer questions
		1/8	PW report 'flow cytometric analysis of lymphoid organs'			
		1/8	1/16 PW report 'histology' and 1/16 PW oral presentation 'histology'			
		2/8	1/8 written grant proposal and 1/8 oral presentation of proposal			
		not graded	3D modeling, bioinformatics, CBL, ABL 'experimental design on Tfh'			
3rd	practical		master work:			
			33% practical work			
			33% written report			
			33% oral defense			
			All three grades need to be ≥ 4			

Both the practical and theoretical grade need to be ≥ 4