<table>
<tr><td>Name of the course</td><td colspan="3">Hello kidney</td><td>Code</td><td></td></tr>
<tr><td>Type of study program
Cycle</td><td colspan="3">Integrated studies – Medicine</td><td>Year of study</td><td>2</td></tr>
<tr><td>Credits (ECTS) :</td><td>2</td><td>Semester</td><td>4</td><td>Number of hours per semester (l+e+s)</td><td>15+0+10</td></tr>
<tr><td>Status of the course:</td><td>elective</td><td>Preconditions:</td><td colspan="2">Comparative conditions:</td><td></td></tr>
<tr><td>Access to course:</td><td colspan="3">2nd year students</td><td>Hours of instructions:</td><td></td></tr>
<tr><td colspan="2">Course teacher:</td><td colspan="4">Professor Katarina Vukojevic MD PhD MSc
Assistant Anita Racetin</td></tr>
<tr><td colspan="2">Consultations:</td><td colspan="4"></td></tr>
<tr><td colspan="2">E-mail address and phone number:</td><td colspan="4">katarina.vukojevic@mef.sum.ba</td></tr>
<tr><td colspan="2">Associate teachers</td><td colspan="4">Assistant professor Sandra Kostić, PhD</td></tr>
<tr><td colspan="2">Consultations:</td><td colspan="4"></td></tr>
<tr><td colspan="2">E-mail address and phone number:</td><td colspan="4"></td></tr>
<tr><td>The aims of the course:</td><td colspan="5">Objective of Hello Kidney is to teach student about normal kidney development, anatomy, physiology and congenital anomalies of genitourinary tract.</td></tr>
<tr><td>Learning outcomes (general and specific competences):</td><td colspan="5">Identify, describe and explain the most important characteristics of genitourinary system development, anatomy, physiology and structures at the level of the tissue, organ and whole body.
Name and explain changes that occur in genitourinary system because of developmental anomalies.
Critically judge educational materials (articles and lectures), participate in argumentative discussions and construct opinions.
Apply adopted knowledge to predict function of genitourinary system in health and diseases.
Use acquired theoretical knowledge for solving practical problems.</td></tr>
<tr><td>Course content (Syllabus):</td><td colspan="5"><u>Lectures (15 hours):</u> <u>Number of hours:</u>
Development of genitourinary tract 3
Factors involved in normal kidney development 3
Congenital anomalies of kidney and urinary tract (CAKUT) 3
Genetic background of CAKUT
3
Kidney anatomy and physiology 3
<u>Seminars (10 hours):</u> <u>Number of hours:</u>
New diagnostic approaches to CAKUT 2
Critical review of CAKUT literature
3
Histological analysis of human and mouse development</td></tr>
</table>

	of lower urinary tract 2 Histological analysis of human and mouse kidney development 2 Laboratory practice and methodology overview 1			
Format of instruction (mark in bold)	**Lectures**	**Exercises**	**Seminars**	**Independent assignments**
	Consultations	Work with mentor	Field work	Other
	Remark: Quality control analysis by the students and peers, Passing exams proportion analysis, University of Split Committee for the teaching quality control report, Extramural evaluation (National agency team for quality control, TEEP)			
Student responsibilities	written exam quiz after each module (in total 5 quizzes)			
Screening student work (mark in bold)	**Class attendance**	**Class participations**	**Seminar essay**	Practical training
	Oral exam	**Written exam**	Continous assesment	Essay

Detailed evaluation within a *European system of points*

STUDENTS RESPONSIBILITIES	**HOURS**	**PROPORTIONS OF ECTS CREDITS**	**PROPORTIONS OF MARK**
Class attendance and participations		0,5	30%
Seminar essay		0,5	30%
Written exam		0,5	40%
Oral exam			

Further clarification:
Assessment of students' performance will be based on their general activity during the course. It will include active participation in the debates. Students will have an quiz assignment after each module.

According to the regulations of the study, final grade is obtained:
A = 91-100% 5
B = 79 to 90% 4
C = 67 to 78% 3
D = 55 to 66% 2
F = 0 to 54% 1

Required literature:	Junqueira LC, Carneiro J, Kelley RO. Basic Histology, 13th Edition: Text and Atlas Sadler TW. Langman's Medical Embryology, 12th Edition Sapunar D, Saraga Babić M. Puljak L, Vukojevic K, Lovric-

	Kojundzić S, Carev D. Histology atlas on CD. University of Split School of Medicine, Split, Croatia Sobotta – Histology atlas Moore KL, Dalley AF, Agur, AMR. Clinically oriented anatomy (sixth edition or seven edition). Philadelphia: Lippincott Williams & Wilkins, 2000 Netter FH. Atlas of human anatomy. Basel: Novartis, 1998 Handouts from lectures
Optional literature:	Mutations in DSTYK and Dominant Urinary Tract Malformations S. Sanna-Cherchi, R.V. Sampogna, N. Papeta M. Bodria, Y. Liu, P.L. Weng, V.J. Lozanovski, M. Verbitsky, F. Lugani, R. D. Kosuljandic Vukic, K. Vukojevic, M. Saraga-Babic, M. Saraga F. Scolari, R. Ravazzolo, K. Kiryluk, Q. Al-Awqati, V.D. D'Agati, I.A. Drummond, V. Tasic, R.P. Lifton, G.M. Ghiggeri, and A.G. Gharavi Copy number variation analysis identifies novel CAKUT candidate genes in children with a solitary functioning kidney. Westland R, Verbitsky M, Vukojevic K, Perry BJ, Fasel DA, Zwijnenburg PJ, Bökenkamp A, Gille JJ, Saraga-Babic M, Ghiggeri GM, D'Agati VD, Schreuder MF, Gharavi AG, van Wijk JA, Sanna-Cherchi S.
Additional information about the course	CAKUT genetics in mice and men Georgina Caruana and John F. Bertram
	Review Congenital Anomalies of the Kidney and Urinary Tract: An Embryogenetic Review Augusto Cesar Soares dos Santos Junior, Debora Marques de Miranda, and Ana Cristina Sim~oes e Silva
	To bud or not to bud: the RET perspective in CAKUT T. Keefe Davis & Masato Hoshi & Sanjay Jain
	Congenital anomalies of the kidney and urinary tract (CAKUT) associated with Hirschsprung's disease: a systematic review Alejandro D. Hofmann, Johannes W. Duess, Prem Puri
	Ureter growth and differentiation Tobias Bohnenpoll, Andreas Kispert
	Next-generation sequencing for research and diagnostics in kidney disease Kirsten Y. Renkema, Marijn F. Stokman, Rachel H. Giles and Nine V. A. M. Knoers
	Congenital Anomalies of the Kidney and the Urinary Tract (CAKUT) Maria M. Rodriguez
	Functional Models for Congenital Anomalies of the Kidney and Urinary Tract Glenn van de Hoek, Nayia Nicolaou, Rachel H. Giles, Nine V.A.M. Knoers, Kirsten Y. Renkema, Ernie M.H.F. Bongers
	Single-gene causes of congenital anomalies of the kidney

	and urinary tract (CAKUT) in humans Asaf Vivante & Stefan Kohl & Daw-Yang Hwang & Gabriel C. Dworschak & Friedhelm Hildebrandt
	Renal Complications in 6p Duplication Syndrome: Microarray-Based Investigation of the Candidate Gene(s) for the Development of Congenital Anomalies of the Kidney and Urinary Tract (CAKUT) and Focal Segmental Glomerular Sclerosis (FSGS) Megumi Yoshimura-Furuhata

Annexes: calendar classes

The number of teaching units	TOPICS AND LITERATURE
I.	Title: Development of genitourinary tract
	Short description: Definition and basic concepts about kidney and urinary tract development
	Literature: required and optional
II.	Title: Factors involved in normal kidney development
	Short description: Development of kidney and urinary tract in the lights of gene expression patterns
	Literature: required and optional
III.	Title: Congenital anomalies of kidney and urinary tract (CAKUT)
	Short description: genital tract malformation; application of therapeutic potential in science and every-day life
	Literature: required and optional
IV.	Title: Genetic background of CAKUT
	Short description: genetic mutations in kidney and urinary tract malformations
	Literature: required and optional
V.	Title: Kidney anatomy and physiology
	Short description: basic anatomical description
	Literature: required and optional