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I. DESCRIPTION OF STUDY PROGRAMME FORM

BASIC INFORMATION	
Title of study programme	**Ultrasound in Obstetrics and Gynecology**
study programme coordinator	Medical School University of Rijeka
Study programme implementor	Medical School University of Rijeka
Type of study programme	University specialized fellowship program
Level of study programme	university
Academic/professional degree awarded upon completion of study	specialist of ultrasound in obstetrics and gynecology

1. INTRODUCTION

1.1 Reasons for launching the study programme

Postgraduate Fellowship Program on Ultrasound in Obstetrics and Gynecology is designed to train specialists in obstetrics and gynecology to efficiently use different forms of ultrasound. The objective of this specialized fellowship program is to foster the rapid acquisition, integration and application of clinical knowledge to the practice of diagnostic ultrasound in obstetrics and gynecology. This program offers extensive experience in the ultrasound assessment of high risk obstetric and gynecologic patients, as well as formal training and mentorship in clinical and translational research. Within the fellowship program in obstetrics and gynecology candidates have little opportunity to learn even the basics of ultrasound. The existing postgraduate programs of education in ultrasound in obstetrics and gynecology in Croatia are offering only basic knowledge in Croatian, while this course is offering specialized and comprehensive knowledge given in English by internationally recognized experts which is appropriate to the targeted group of students. Not many such programs exist at the international market.

1.2.Evaluation of purposefulness in respect to the market needs in public and private sector

Not many programs of such profile are available at the market. There are many specialists who are interested to attend this kind of postgraduate education especially in the Arab region. We have already successfully educated more than forty doctors in Doha, Qatar and there are many more doctors in the Middle East Region, Iran, Azerbaijan, Kazakhstan and other countries who are interested in application for the course.

1.2.1.Connection with the local community (economy, entrepreneurship, civil society)

Ultrasound training is not the part of fellowship program in obstetrics and gynecology in those countries which is the reason why knowledge and skills in ultrasound are rather sparse. Therefore there is a need for such specialized fellowship program in order to improve women healthcare. It will enable clinicians to rely on their own findings and interpretations which recently have been performed by radiologists who lack clinical knowledge on the subject.

1.2.2.Compliance with professional association's requirements (recommendations)

Many local hospitals want their specialists to be trained, and many private practitioners are interested in that kind of training. This kind of education will improve skills of professionals and expand the list of offers on the market of medical services in the region and improve the quality of already existing services.

1.2.3. Name possible partners outside higher education system that showed interest in the study programme

Welcare Hospital Dubai, **www.ehl.ae/WH/**

1.3 Comparability of the study programme with similar programmes of accredited higher education institutions in the Republic of Croatia and the EU (name and explain comparability of the proposed programme with two programmes, whereas at least one of which should be from the EU (provide their web sites))

There is a Basic postgraduate fellowship program on Ultrasound in Obstetrics and Gynecology at the Medical School University of Zagreb in Croatian language, while this fellowship program is only in English and dedicated to foreign students. There is no overlapping of the programs.
At Cardiff University is conducted THE OBSTETRIC AND/ OR GYNECOLOGICAL ULTRASOUND (MSC / PGDIP / PGCERT) offering six options regarding the duration of the study, with two options for getting 120 or 60 credits by the end of the study with MSc disertation of 20,000 words. The goal of this program is to produce clinically competent proffesionals of ultrasound in obstetrics and gynecology with reliable clinical knowledge and skills of basic scientific research in ultrasound. http://medicine.cf.ac.uk/graduate-studies/az-

programmes/obstetrics-gynaecology-pgt/

Postgraduate study of "Medical ultrasound" is run by the University of London, offering education in the field of ultrasound in obstetrics and gynecology and the abdomen. Students receive 60 or 120 credits, depending on the level they choose, and the study can be completed by MSc thesis. It is designed for a wide range of health care professionals with applicable interest in the field covering midwives, ultrasound professionals, nurses, gynecologists, obstetricians and residents http://www.city.ac.uk/courses/postgraduate/medical-ultrasound.

Both programs are compatible with programme offered here. However expectedly these two programmes are adapted to the British model of education, and may end up with a master's degree thesis and MSc title. Both programs are based on the system of compulsory and elective modules. Besides offering a wide knowledge of familiarization with the methodology of scientific work, also offers distance learning with well-developed system of mentors.

1.4. Openness of the study programme towards horizontal and vertical mobility of students within national and international higher education area

Students of the postgraduate fellowship program should complete 6 mandatory modules (57 ECTS). Points from the mandatory modules of common competences and additional points of elective module the students are free to acquire at other postgraduate fellowship programs at the University of Rijeka and other universities in the Republic of Croatia, the European Union or elsewhere with prior approval and agreement of the fellowship leaders.

1.5. Alignment with the Mission and the Strategy of the University of Rijeka

The proposed study programme fits in the Strategy of University of Rijeka 2007 – 2013, with the aim to increase the number of students outside the gravitational area of the University of Rijeka by 50% and to increase the number of studies in one of the world's languages to ten. In addition, this program fits in the task 7 of the Strategy which predicts at least 10 joint graduate studies at the University, including at least two with foreign universities, and at least five postgraduate programmes, including at least two with foreign universities.
The proposed programme of study fits in the Strategy of the Medical School, University of Rijeka from 2010 to 2015 which is projected to increase international cooperation by 25%. The mentioned programme is also in accordance with the annex of the Strategy of DIU Libertas International University by 2015, which declares establishment of the School of Health Science with postgraduate programmes dedicated to foreigners.

1.6 .Institutional strategy for study programmes development

DIU Libertas International University has the possibility to engage internationally recognized professors of the highest possible quality and competencies. Faculty of Medicine in Rijeka will include the professors and assistants in the educational process, which will be of mutual interest. Welcare Hospital from Dubai is interested in supporting such educational activities having a good infrastructure to enable teaching of theoretical and/or practical skills of the highest possible quality.

1.7. Other important data – according to the coordinator's opinion

This program will not bring any financial burden to the Medical Faculty of Rijeka University, because DIU Libertas International University has signed a contract on financial support with the Welcare Hospital in Dubai. After finishing the program the students will be offered to continue the doctoral studies at Rijeka University. This program offers extensive experience in the ultrasound assessment of high risk obstetric and gynecologic patients, as well as formal training and mentorship in clinical and translational research.

2. GENERAL PART

2.1. Title of study programme

University specialized Fellowship study on Ultrasound in Obstetrics and Gynecology

2.1.1. Type of study programme

university

2.1.2. Level of study programme

postgraduate specialized program

2.1.3. Area of study programme (scientific/artistic) – indicate the title

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Area of biomedicine and health, scientific field of clinical medicine and research, scientific branch obstetrics and gynecology

2.2. Study programme coordinator(s)

Medical School University of Rijeka

2.3. Implementor/s of study programme

prof. dr. sc. Herman Haller, Medical School University of Rijeka; prof. dr. Asim Kurjak, DIU Libertas International University

2.4. Duration of study programme (indicate possibilities of part-time study, long distance study)

One academic year (two semesters)

2.4.1. ECTS credits – minimal number of credits required for completion of study programme

60 ECTS credits

2.5. Enrolment requirements and selection procedure

University diploma of completed medical school education, valid license for clinical work, residents or specialists of OB/GYN

2.6. Study programme learning outcomes

2.6.1. Competences which student gains upon completion of study (according to CROQF (HKO): knowledge, skills and competences in a restricted sense –independence and responsibility)

Theoretical knowledge in obstetrics

- Physics and Technology, Ultrasound Techniques and Administration
- Dating of pregnancy
- Weight estimation and fetal growth
- Normal fetal anatomy
- Common fetal anomalies
- Multiple pregnancy
- Placenta, amniotic fluid
- Screening for fetal chromosomal anomalies: soft markers, nuchal translucency
- Invasive procedures: amniocentesis, chorionic villus biopsy
- Psychosocial aspects
- Ethical aspects
- Safety of ultrasound
- Literature search, internet databases, etc
- Fetal malformations (more advanced than level 1)
- Role of ultrasound compared to other imaging modalities, e.g., magnetic resonance imaging
- Fetal echocardiography
- Fetal Doppler
- Soft markers
- Diagnosis of syndromes
- Genetics
- Quality control
- Psychology, counselling

Practical knowledge – competencies in obstetrics

At the end of the training the trainee should be able to

- Perform a systematic abdominal ultrasound examination of the pregnant uterus, placenta, amniotic fluid and fetus
- Optimize and correctly orientate the ultrasound image
- Obtain accurate measurements of the fetal biparietal diameter, femur length and abdominal diameter or circumference for dating and/or weight estimation
- Evaluate fetal anatomy, rerognizing the following structures and discriminating normal from abnormal findings in these structures:
  - Skull/brain
  - Midline echo in brain
  - Cavum septum pellucidum

  - Cerebellum
  - Cisterna magna
  - Cerebral ventricles
  - Neck
  - Thorax
  - Four chamber view of heart plus outflow tracts
  - Stomach
  - Umbilical cord insertion
  - Kidneys
  - Urinary bladder
  - Spine
  - Extremities (arms, legs, hands and feet)
  - The ability to communicate both normal and abnormal findings to the pregnant woman
- Diagnose common fetal malformations and have knowledge of their management
- Diagnose intrauterine growth restriction and have knowledge of its management
- Diagnose complications in twin pregnancies and have knowledge of their management

Theoretical knowledge in gynaecology

- Physics and Technology, Ultrasound Techniques and Administration
- Normal gynaecological ultrasound findings in non-pregnant women
- Normal ultrasound findings in early pregnancy (4–12 gestational weeks)
- Ultrasound based management of early pregnancy complications
- Common abnormal ultrasound findings in the uterus, e.g. fibroids and their most important differential diagnoses (e.g.,sarcomas, adenomyosis, and uterine malformations)
- Ultrasound based management of pre- and post-menopausal bleeding (measurement of endometrial thickness, saline infusion sonography, etc)
- Common abnormal ultrasound findings in the adnexae, e.g. corpus luteum cysts, endometriomas, dermoid cysts, hydrosalpinges, para-ovarian cysts, peritoneal inclusion cysts, abscesses.
- Ultrasound characteristics of benign and malignant pelvic masses.
- Management of incidentally detected ovarian cysts in postmenopausal women.
- New ultrasound modalities, e.g. ultrasound contrast agents
- The role of ultrasound in relationship to other imaging modalities, e.g., magnetic resonance imaging and computed tomography
- Uterine pathology including the use of Doppler and three-dimensional (3D) imaging
- Fibroids, sarcoma
- Adenomyosis/adenomyomas
- Uterine malformations
- Endometrial pathology: ultrasound based management of bleeding disturbances
- Cervical pathology including cancer
- Screening for ovarian and endometrial cancer
- Gynaecological oncology – Staging, recurrence, response to treatment
- Extragenital pelvic pathology (Bowel, appendix, urinary bladder)
- Pelvic inflammatory disease (PID)
- Infertility – HysteroContrastSalpingography (HyCoSy), Saline Infusion Sonography (SIS), Follicle aspiration, Hyperstimulation Syndrome
- Early pregnancy complications – molar pregnancy and choriocarcinoma, all types of ectopic pregnancy (including both diagnosis and management)
- Use of ultrasound in the evaluation of women with pelvic pain including adnexal torsion, pelvic inflammatory disease, endometriosis and extragenital causes (eg appendicitis, diverticulitis)
- Pediatric and adolescent gynaecology

– Assessment of normal development of the genital organs
– Common findings in precocious puberty, adrenarche, thelarche, virilisation and primary amenorrhoea
– diagnosis and management of adnexal masses in children

Practical knowledge in gynaecology

- Perform a systematic examination of the pelvic organs, both transvaginally and transabdominally
- Obtain optimal images of the uterus and adnexa
- Obtain accurate measurements of the uterus, endometrium and ovaries

- Recognize physiological changes in the uterus and ovaries during the normal menstrual cycle.
- Locate an intrauterine contraceptive device in the uterus.
- Discriminate between normal and abnormal ultrasound findings in a non-pregnant woman
- Recognize, measure and locate uterine fibroids
- Detect an intrauterine gestational sac of at least 5 mm in mean diameter
- Detect heart activity in an embryo of at least 10 mm in
- Uterus

– reliably discriminate between fibroids and adenomyosis
– recognize the features of endometrial cancer
– use ultrasound correctly in the management of bleeding
– disturbances including postmenopausal bleeding

- Adnexa

– reliably discriminate between benign and malignant adnexal masses
– reliably diagnose endometrioma, dermoid cyst, hydrosalpinx, peritoneal pseudocysts, paraovarian cysts, and benign solid adnexal masses
– recognize acute and chronic pelvic inflammatory disease
– assess by ultrasound the status of ectopic pregnancies of all kinds and plan treatment
– assess the likelihood of torsion of normal adnexal structures and adnexal masses
– use ultrasound in infertility workup (for trainees working in this area)
– use ultrasound to monitor ovulation induction

- Interventional ultrasound

– aspirate and/or drain pelvic cysts, abnormal fluid collections, abscesses etc under transabdominal and transvaginal ultrasound guidance
– perform saline infusion sonography (SIH)
– assess tubal patency with Hystero Contrast Salpingography (HyCoSy) – not obligatory

- Have knowledge of

– the common findings in children with precocious puberty, menarche
– thelarche, adrenarche and virilisation possible findings in primary and secondary amenorrhoea
– the role of ovarian and endometrial cancer screening
– the principles of oocyte collection by transvaginal ultrasound guided follicular aspiration

2.6.2. Employment possibility (list of possible employers and compliance with professional association's requirements)

Hospital department and outpatient clinic

2.6.3. Possibility of continuation of study on higher level

After successful completion of the modules and satisfactory performance on final exam, the fellow receives a certificate that he/she has successfully completed a Fellowship program of Ultrasound in Obstetrics and Gynecology, and become a Specialist of Ultrasound in Obstetrics and Gynecology. After receiving the diploma, the fellow may continue the doctoral course to obtain PhD degree.

2.7. Upon applying for graduate studies list proposer's or other Croatian institution's undergraduate study programmes which enable enrolment to the proposed study programme

M.D. degree

2.8. Upon application of integrated studies - name reasons for integration of undergraduate and graduate level of study programme

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3. PROGRAMME DESCRIPTION

3.1. List of compulsory and elective subjects and/or modules (if existing) with the number of active teaching hours required for their implementation and number of ECTS-credits (appendix: Table 1)

Data included to the Table 1

3.2. Description of each subject (appendix: Table 2)

Data included to the Table 2

3.3. Structure of study programme, dynamic of study and students' obligations

The program is carried out through two semesters with the total load of 60 ECTS credits, 30.0 in the first and 30 in the second semester. The first and the second semester, students enroll 57 ECTS from obligatory modules and 3 ECTS credits from elective module. Students enrolled full academic year or two semesters at a time. Students are required upon registration obligatory and elective modules to attend lectures, seminars and exercises to gain the requirements for the final exam.

3.3.1. Enrolment requirements for the next semester or trimester (course title)

Each candidate is expected to complete his/her log book and present it at the end of each module. A comprehensive end of module exam will be given at the end of each module. After completion of each module, the fellow should present or send via e-mail the certificate proving attendance, which qualifies him/her to take the summative (final) exam.

3.4. List of courses and/or modules student can choose from other study programmes

Students of postgraduate course can choose elective courses from other postgraduate programs of Medical School of Rijeka University, DIU Libertas International University including Quality Management in Health. Upon completion of the curricula of postgraduate specialist studies from other areas of medicine, students will also be able to enter some of the offered elective courses.

3.5. List of courses and/or modules that can be implemented in a foreign language (specify the language)

All the program will be presented in English language

3.6. Allocated ECTS credits that enable national and international mobility

Leaders of the postgraduate course may authorize the transfer of ECTS credits from other studies at the University or other higher education institutions according to the criteria that one working week of 40 hours of student workload, is 1.5 ECTS credits. In direct teaching that is 15 - 25 contact hours, depending on whether it is hours of lectures, seminars or exercises.

3.7. Multidisciplinarity/interdisciplinarity of study programme

3.8. Mode of study programme completion

University specialized Fellowship study program on Ultrasound in Obstetrics and Gynecology finishes with final exam which includes practical ultrasound skills exam, written essay and theoretical oral exam with committee of three examiners.

3.8.1. Conditions of approval of final work /thesis and/or final/thesis exam application

Attendance to all compulsory and one elective module according to the study program and presentation of the logbook signed by mentors.

3.8.2. Composing and furnishing of final work/thesis

3.8.3. Final work/thesis assessment procedure and evaluation and defense of final work/thesis

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Table 1.

List of compulsory and elective courses and/or modules with the number of hours of active teaching required for their implementation and the number of ECTS credits

LIST OF MODULES/COURSES							
Study year: 1							
Semester: 1							
MODULE 1 USC 1	COURSE	COORDINATOR	L	E	S	ECTS	STATUS[1]
Module 1. Basics of ultrasound in obstetrics and gynecology	Introduction to ultrasound diagnostics in obstetrics and gynecology	Asim Kurjak Herman Haller	4	6	0	1	C
	Basics of ultrasound in obstetrics	Aleks Finderle Alan Šustić	7	24	4	4	C
	Basics of ultrasound in gynecology	Herman Haller	5	20	4	3	C
	Basics of ultrasound in infertility	Biserka Funduk Kurjak	4	20	2	2	C
	Total		20	70	10	10	

LIST OF MODULES/ COURSES							
Study year: 1							
Semester: 1							
MODULE 2 USC 2	COURSE	COORDINATOR	L	E	S	ECTS	STATUS[2]
Module 2. Conventional ultrasound in obstetrics	Sonoembryology	Asim Kurjak, Aleks Finderle	4	4	0	1	C
	Ultrasound in early pregnancy	Aleks Finderle	6	24	4	3,5	C
	Ultrasound in the second and the third trimester	Asim Kurjak, Aleks Finderle	6	24	4	3,5	C
	Multiple pregnancies	Aleks Finderle	4	20	2	2	C
	Total		20	70	10	10	

[2] **IMPORTANT:** For the compulsory module/ course, letter O is entered, and letter E for the elective one.

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LIST OF MODULES/ COURSES							
Year study: 1							
Semester: 1							
MODULE 3 USC 3	COURSE	COORDINATOR	L	E	S	ECTS	STATUS[3]
Module 3. Conventional ultrasound in gynaecology	Basics of child and adolescent gyecology	Biserka Funduk Kurjak	4	2	0	1	C
	Utrasound in women of generative age	Herman Haller	8	34	4	4,5	C
	Ultrasound oncology and ultrasound in menopause and postmenopause	Herman Haller Asim Kurjak	8	34	6	4,5	C
	Total		20	70	10	10	

LIST OF MODULES/ COURSES							
Study year: 1							
Semester: 2							
MODULE 4 USC 4	COURSE	COORDINATOR	P	V	S	ECTS	STATUS[4]
Module 4. Conventional ultrasound in infertility	Public health and medical aspects of infertility	Herman Haller	10	8	4	4,5	C
	Ultrasound in diagnosis and treatment of infertility	Herman Haller Asim Kurjak	10	42	6	5,5	C
	Total		20	70	10	10	

[4] **IMPORTANT:** For the compulsory module/ course, letter O is entered, and letter E for the elective one

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LIST OF MODULES/ COURSES							
Study year: 1							
Semester: 2							
MODULE 5 USC 5	COURSE	COORDINATOR	L	E	S	ECTS	STATUS[5]
Module 5. Three dimensional (3D), fourdimensional (4D) ultrasound and doppler in obstetrics and gynaecology	Doppler and 3D/4D ultrasound in obstetrics	Asim Kurjak,	7	22	3	3	C
	Doppler and 3D/4D ultrasound in gynecology and infertility	Eberhard Merz	7	28	3	4	C
	Total		14	50	6	7	

LIST OF MODULES/ COURSES							
Year study: 1							
Semester: 2							
MODULE 6 USC 6	COURSE	COORDINATOR	L	E	S	ECTS	STATUS[6]
Module 6. Invasive ultrasound diagnostics	Invasive ultrasound diagnostics in obstetrics	Aleks Finderle	10	30	5	4,5	C
	Invasive ultrasound diagnostics in gynaecology and infertility	Herman Haller	10	40	5	5,5	C
	Total		20	70	10	10	

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LIST OF MODULES/ COURSES							
Study year: 1							
Semester: 2							
MODULE 7 USE 7	COURSE	COORDINATOR	L	E	S	ECTS	STATUS[7]
Module 7. How to write scientific paper	Scientific way of thinking	Amir Muzur	4	5	1	1	E
	Structure of scientific paper	Amir Muzur	4	16	0	2	E
	Total		8	21	1	3	

[7] **IMPORTANT:** For the compulsory module/ course, letter O is entered, and letter E for the elective one.

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Table 2

Course description Module 1

LIST OF MODULES/ COURSES							
Study year: 1							
Semester: 1							
MODULE 1 USO 1	COURSE	COORDINATOR	L	E	S	ECTS	STATUS[8]
Module 1. Basics of ultrasound in gynecology and obstetrics	Introduction to ultrasound diagnostics in obstetrics and gynecology	Asim Kurjak Herman Haller	4	6	0	1	C
	Basics of ultrasound in obstetrics	Aleks Finderle Alan Šustić	7	24	4	4	C
	Basics of ultrasound in gynecology	Herman Haller	5	20	4	3	C
	Basics of ultrasound in infertility	Biserka Funduk Kurjak	4	20	2	2	C
	Total		20	70	10	10	

Course description M1C1

Basic description		
Course coordinator	**Asim Kurjak, Herman Haller**	
Course title	**Introduction to ultrasound diagnostics in obstetrics and gynecology**	
Study programme	**Ultrasound in Obstetrics and Gynecology**	
Course status	compulsory	
Year	**1**	
ECTS credits and teaching	ECTS student 's workload coefficient	1,0
	Number of hours (L+E+S)	4+6+0

1. COURSE DESCRIPTION

1.1. Course objectives

The aim of the course is to introduce students with the basics of ultrasound physics, ultrasound techniques and methods of their application. It is also intended to talk about the safety of diagnostic ultrasound in obstetrics and gynecology (the ALARA principle), the ethical aspects of the application of ultrasound in gynecology and obstetrics and ultrasound imaging compared with other imaging methods such as magnetic resonance imaging and other radiological imaging.

1.2. Course enrolment requirements

Enrolment to the university postgraduate study of Ultrasound in obstetrics and gynecology

1.3. Expected course learning outcomes

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After finishing this course, participants will know the basic physics of diagnostic ultrasound with the application of existing theoretical knowledge in practical use of ultrasound machines and obtaining the optimal ultrasound images in gynecology and obstetrics. In addition, students will know the basic ethical dilemmas associated with the use of ultrasound in obstetrics and gynecology, together with the medical and legal aspects of ultrasound in obstetrics and gynecology.

1.4. Course content

Physics of ultrasound, basic knowledge of ultrasound equipment, types of ultrasound probes, selection of parameters to obtain optimal images considering diagnosis. Application of basic two-dimensional ultrasound techniques , three-dimensional (3D) and four-dimensional ultrasound, Doppler ultrasound methods such as pulse Doppler, colour and power Doppler imaging and some new techniques of 3D ultrasound such as the so-called "High-definition " (HD) technique, "tomography ultrasound imaging“ (TUI), „Spatio - Temporal Image Correlation (STIC) etc. In addition, participants will be familiar with the safety of diagnostic ultrasound and ultrasound policies of the most important international associations. Equipment for ultrasound diagnostics must meet all safety standards as required by the Food and Drug Administration (FDA) in the United States, the International Electrotechnical Commission (IEC) , the American Institute of Ultrasound in Medicine(AIUM) and the World Federation for Ultrasound in Medicine and Biology (WFUMB) . Students will be introduced to the following safety indicators of diagnostic ultrasound: ISPTA3 (spatial peak temporal average intensity - a measure of the biological effects of warming), ISPPA3 (spatial peak pulse average intensity - a measure of the biological effects of cavitation) and mechanical index - MI (biological effect of cavitation). Artefacts and difficulties in the interpretation of ultrasound images. Basics of ethical ultrasound diagnostics in gynecology and obstetrics with possible medical legal aspects of diagnostic ultrasound in the diagnosis of conditions in gynecology and obstetrics. Ultrasound as a screening method in obstetrics and gynecology.

1.5. Teaching methods	x☐ lectures x☐ seminars and workshops x☐ exercises ☐ long distance education ☐ fieldwork	x☐ individual assignment ☐ multimedia and network ☐ laboratories ☐ mentorship ☐ other
1.6. Comments		

1.7. Student's obligations

Each student must submit their diary at the end of each course when the exam from the above items will be held. Upon completion of each course the candidate must send an e-mail or provide proof of attendance, which will be one of the approval criteria for access to the final exam.

1.8. Evaluation of student's work

Course attendance	0,10	Activity/Participation	0,15	Seminar paper	0,15	Experimental work	
Written exam	0,25	Oral exam		Essay	0,10	Research	
Project		Sustained knowledge check		Report		Practice	0,25
Portfolio							

1.9. Assessment and evaluation of student's work during classes and on final exam

Assessment of student's work will be performed according to the activities during teaching, teaching attendance, writing test in the form of essay on the subject and based on the activity during exercises. Final exam will be from one of the three offered subjects.

1.10. Assigned reading (at the time of the submission of study programme proposal)

Kurjak A, Chervenak FA. Donald School Textbook of Ultrasound in Obstetrics and Gynecology, 3rdedition. Jaypee Brothers, New Delhi, 2011.
Kupesic S. Color Doppler, 3D and 4D Ultrasound in Gynecology, Infertility and Obstetrics, Jaypee Brothers, New Delhi, 2011.
Ahmed B, Adra A, Nese Kavak Z. Donald School BasicTextbook of Ultrasound in Obstetrics and Gynecology, Jaypee Brothers, New Delhi, 2008.
Kupesic S. Donald School video on Ultrasound in Obstetrics and Gynecology, Jaypee Brothers, New Delhi, 2011.

1.11. Optional / additional reading (at the time of proposing study programme)

Kurjak A, Bajo Arenas J. Donald School Textbook of Transvaginal Sonography, Jaypee Brothers, New Delhi, 2004.
Carrera JM, Kurjak A. Donald School Atlas of Clinical Application of Ultrasound in Obstetrics and Gynecology. Jaypee Brothers, New Delhi, 2006.
Kurjak A. Donald School Atlas of Fetal Anomalies. Jaypee Brothers, New Delhi, 2006.

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Antsaklis A, Troyano JM. Donald School Textbook of Interventional Ultrasound. Jaypee Brothers, New Delhi, 2008.
Each student will be subscribed to Donald School Journal of Ultrasound in Obstetrics and Gynecology.

1.12. Number of assigned reading copies with regard to the number of students currently attending the course

Title	*Number of copies*	*Number of students*
Kurjak A, Chervenak FA. Donald School Textbook of Ultrasound in Obstetrics and Gynecology, 3rd edition. Jaypee Brothers, New Delhi, 2011	2	12
Kupesic S. Color Doppler, 3D and 4D Ultrasound in Gynecology, Infertility and Obstetrics, Jaypee Brothers, New Delhi, 2011	2	12
Kupesic S. Donald School video on Ultrasound in Obstetrics and Gynecology, Jaypee Brothers, New Delhi, 2011.	2	12

1.13. Quality monitoring methods which ensure acquirement of output knowledge, skills and competences

Conducting and regular analysis of survey among students and evaluation of data on the effectiveness of the study programme and its implementation. Each student has a mentor who monitors his attainments during the study. We act according to the Ordinance about the system and the quality improvement of the University of Rijeka, the Code of Ethics of the University of Rijeka and the Code of Ethics of teachers, associates and scientists of School of Medicine, University of Rijeka, Code of Ethics of students, School of Medicine, University of Rijeka, the Regulation on the students' evaluation at the School of Medicine in Rijeka.

Course description M1C2

Basic description		
Course coordinator	**Aleks Finderle, Alan Šustić**	
Course title	**Basics of ultrasound in obstetrics**	
Study programme	**Ultrasound in Obstetrics and Gynecology**	
Course status	compulsory	
Year	**1**	
ECTS credits and teaching	ECTS student 's workload coefficient	4,0
	Number of hours (L+E+S)	7+24+4

1. COURSE DESCRIPTION

1.1. Course objectives

The aim of the course is that students gain the basic theoretical and practical knowledge of obstetric ultrasound which will form the basis for the later extension of knowledge in this area. Basic knowledge is concerning: the anatomy of the foetus, placenta, amniotic fluid, the determination of gestational age, foetal growth and weight, multiple pregnancy, ultrasound basics of intrauterine dysmorphology, the most common invasive procedures during pregnancy, as well as the issue of ethical and psychosocial aspects of prenatal ultrasound protection and issues with the quality control.

1.2. Course enrolment requirements

Enrolment to the university postgraduate study of Ultrasound in obstetrics and gynecology

1.3. Expected course learning outcomes

After the completion of this course participants will know to recognize using ultrasound normal anatomy of the fetus, placenta and fetal membranes, pregnant uterus, amniotic fluid, to orient the fetus in the womb, to recognize the proper ultrasound image of the anatomical structures of the fetus that is used to determine the gestational age and weight assessment, to recognize early multiple pregnancy and the ultrasound signs of early multiple pregnancy with the determination of chorionicity and amnionicity, know the indications for invasive obstetric procedures for screening and their theoretical performance. Apart from that, they will know the basic ethical dilemmas associated with the use of ultrasound in obstetrics as well as the most important psychosocial aspects of ultrasound

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in obstetrics.

1.4. Course content

Basics of anatomy of embryo/fetus from early to late pregnancy through trimesters. Anatomy of the uterus, placenta and fetal membranes along with methods of determining the gestational age, fetal growth and weight. Participants will learn the basics of dysmorphology, common markers of chromosomopathies and congenital anomalies and nuchal translucency as well as the manner of its measurements. They will become familiar with the normal anatomy and pathologic findings of the fetus in order to distinguish normal results from malformations. They will be introduced to the differentiation of multiple pregnancies with early signs of multiple pregnancy and multiple pregnancy types and ways of their follow-up compared with singleton pregnancies. At the end, they will discuss the psychosocial and ethical aspects of ultrasound in obstetrics and quality control in performing ultrasound tests in pregnancy. Students will be informed of basics of differentiation of ultrasound and other imaging methods in the evaluation of pregnancy, types of ultrasound examination depending on the stage of pregnancy (transabdominal, transvaginal, two-dimensional, three-dimensional, Doppler tests, etc).

1.5. Teaching methods	x☐ lectures x☐ seminars and workshops x☐ exercises ☐ long distance education ☐ fieldwork	☐ individual assignment ☐ multimedia and network ☐ laboratories ☐ mentorship ☐ other
1.6. Comments		

1.7. Student's obligations

Each student must submit their diary at the end of each course when the exam from the above items will be held. Upon completion of each course the candidate must send an e-mail or provide proof of attendance, which will be one of the approval criteria for access to the final exam.

1.8. Evaluation of student's work

Course attendance	0,25	Activity/Participation	0,25	Seminar paper	0,5	Experimental work	
Written exam	1,0	Oral exam	0,5	Essay	0,5	Research	
Project		Sustained knowledge check		Report		Practice	1,0
Portfolio							

1.9. Assessment and evaluation of student's work during classes and on final exam

Assessment of student's work will be performed according to the activities during teaching, teaching attendance, writing test in the form of essay on the subject and based on the activity during exercises. Final exam will be from one of the three offered subjects.

1.10. Assigned reading (at the time of the submission of study programme proposal)

Kurjak A, Chervenak FA. Donald School Textbook of Ultrasound in Obstetrics and Gynecology, 3rdedition. Jaypee Brothers, New Delhi, 2011.
Kupesic S. Color Doppler, 3D and 4D Ultrasound in Gynecology, Infertility and Obstetrics, Jaypee Brothers, New Delhi, 2011.
Ahmed B, Adra A, Nese Kavak Z. Donald School BasicTextbook of Ultrasound in Obstetrics and Gynecology, Jaypee Brothers, New Delhi, 2008.
Kupesic S. Donald School video on Ultrasound in Obstetrics and Gynecology, Jaypee Brothers, New Delhi, 2011.

1.11. Optional / additional reading (at the time of proposing study programme)

Kurjak A, Bajo Arenas J. Donald School Textbook of Transvaginal Sonography, Jaypee Brothers, New Delhi, 2004.
Carrera JM, Kurjak A. Donald School Atlas of Clinical Application of Ultrasound in Obstetrics and Gynecology. Jaypee Brothers, New Delhi, 2006.
Kurjak A. Donald School Atlas of Fetal Anomalies. Jaypee Brothers, New Delhi, 2006.
Antsaklis A, Troyano JM. Donald School Textbook of Interventional Ultrasound. Jaypee Brothers, New Delhi, 2008.
Each student will be subscribed to Donald School Journal of Ultrasound in Obstetrics and Gynecology.

1.12. Number of assigned reading copies with regard to the number of students currently attending the course

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Title	*Number of copies*	*Number of students*
Kurjak A, Chervenak FA. Donald School Textbook of Ultrasound in Obstetrics and Gynecology, 3rd edition. Jaypee Brothers, New Delhi, 2011	2	12
Kupesic S. Color Doppler, 3D and 4D Ultrasound in Gynecology, Infertility and Obstetrics, Jaypee Brothers, New Delhi, 2011	2	12
Kupesic S. Donald School video on Ultrasound in Obstetrics and Gynecology, Jaypee Brothers, New Delhi, 2011.	2	12

1.13. Quality monitoring methods which ensure acquirement of output knowledge, skills and competences

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Description of course M1C3

Basic description		
Course coordinator	**Herman Haller**	
Course title	**Basics of ultrasound in gynecology**	
Study programme	**Ultrasound in Obstetrics and Gynecology**	
Course status	compulsory	
Year	**1**	
ECTS credits and teaching	ECTS student 's workload coefficient	3,0
	Number of hours (L+E+S)	5+20+4

1. COURSE DESCRIPTION

1.1. Course objectives

The aim of the course is that students gain basic theoretical and practical knowledge of gynecologic ultrasound, which will form the basis for the extension of knowledge in this area later. Basic knowledge includes: the anatomy of small pelvis, ultrasound anatomy and normal display of pelvic organs using transabdominal and transvaginal probe, gaining the optimal picture of the uterus and adnexa, to accurately measure the size of uterus, endometrium and ovaries, recognizing the normal physiological changes in the uterus and ovaries during the normal menstrual cycle, distinguishing between normal and abnormal ultrasound findings in women who are not pregnant, localize and show intrauterine device, display uterine myoma and determine their localization, and show a gestational sac in diameter of 5 mm as well as show fetal heartbeat in the embryo of 10 mm.
A special attention will be paid to issues of ethical and psychosocial aspects of ultrasound in gynecology, as well as the issue of quality control.

1.2. Course enrolment requirements

Enrolment to the university postgraduate study of Ultrasound in obstetrics and gynecology

1.3. Expected course learning outcomes

After the completion of this course, participants will know to identify normal pelvic anatomy using ultrasound, with the display by transabdominal and transvaginal ultrasound. They will be able to show the optimal ultrasound image of the uterus and adnexa in different sections, with the proper orientation of the ultrasound images, and proper measurement of the uterus and adnexa. Ultrasound monitoring of changes during the normal menstrual cycle, the localization of intrauterine devices and differentiating normal from pathological ultrasound findings of the uterus and adnexa in women who are not pregnant. Diagnosis, localization and measurement of uterine myoma, as well as the correlation of clinical and ultrasound findings. It is expected that participants will successfully discover early gestational sac and heartbeat of the embryo at the stage when at least 10 mm long. In addition, they will be aware of potential

ethical dilemmas that are associated with the use of ultrasound in gynecology as well as the most important psychosocial aspects of ultrasound in gynecology and the modes of monitoring the quality of work.

1.4. Course content

Basics of anatomy of a small pelvis with different ultrasound techniques in its monitoring. Ultrasound anatomy of the small pelvis and the most important anatomical relations with surrounding organs with the ways of obtaining the optimal ultrasound image of the uterus and adnexa for the purpose of diagnosing and determining their size. Normal ultrasound changes during the menstrual cycle in women of childbearing age as well as in perimenopausal and postmenopausal women. The most common tumours of the uterus and adnexa and ways of ultrasound screening. Diagnosis of early uterine and extrauterine pregnancy.

1.5. Teaching methods	x☐ lectures x☐ seminars and workshops x☐ exercises ☐ long distance education ☐ fieldwork	☐ individual assignment ☐ multimedia and network ☐ laboratories ☐ mentorship ☐ other
1.6. Comments		

1.7. Student's obligations

Each student must submit their diary at the end of each course when the exam from the above items will be held. Upon completion of each course the candidate must send an e-mail or provide proof of attendance, which will be one of the approval criteria for access to the final exam.

1.8. Evaluation of student's work

Course attendance	0,25	Activity/Participation	0,25	Seminar paper		Experimental work	
Written exam	0,75	Oral exam	0,75	Essay	0,25	Research	
Project		Sustained knowledge check		Report		Practice	0,75
Portfolio							

1.9. Assessment and evaluation of student's work during classes and on final exam

Assessment of student's work will be performed according to the activities during teaching, teaching attendance, writing test in the form of essay on the subject and based on the activity during exercises. Final exam will be from one of the three offered subjects.

1.10. Assigned reading (at the time of the submission of study programme proposal)

Kurjak A, Chervenak FA. Donald School Textbook of Ultrasound in Obstetrics and Gynecology, 3rdedition. Jaypee Brothers, New Delhi, 2011.
Kupesic S. Color Doppler, 3D and 4D Ultrasound in Gynecology, Infertility and Obstetrics, Jaypee Brothers, New Delhi, 2011.
Ahmed B, Adra A, Nese Kavak Z. Donald School BasicTextbook of Ultrasound in Obstetrics and Gynecology, Jaypee Brothers, New Delhi, 2008.
Kupesic S. Donald School video on Ultrasound in Obstetrics and Gynecology, Jaypee Brothers, New Delhi, 2011.

1.11. Optional / additional reading (at the time of proposing study programme)

Kurjak A, Bajo Arenas J. Donald School Textbook of Transvaginal Sonography, Jaypee Brothers, New Delhi, 2004.
Carrera JM, Kurjak A. Donald School Atlas of Clinical Application of Ultrasound in Obstetrics and Gynecology. Jaypee Brothers, New Delhi, 2006.
Kurjak A. Donald School Atlas of Fetal Anomalies. Jaypee Brothers, New Delhi, 2006.
Antsaklis A, Troyano JM. Donald School Textbook of Interventional Ultrasound. Jaypee Brothers, New Delhi, 2008.
Each student will be subscribed to Donald School Journal of Ultrasound in Obstetrics and Gynecology.

1.12. Number of assigned reading copies with regard to the number of students currently attending the course

Title	*Number of copies*	*Number of students*
Kurjak A, Chervenak FA. Donald School Textbook of Ultrasound in Obstetrics and Gynecology, 3rdedition. Jaypee Brothers, New Delhi, 2011	2	12

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Kupesic S. Color Doppler, 3D and 4D Ultrasound in Gynecology, Infertility and Obstetrics, Jaypee Brothers, New Delhi, 2011	2	12
Kupesic S. Donald School video on Ultrasound in Obstetrics and Gynecology, Jaypee Brothers, New Delhi, 2011.	2	12

1.13. Quality monitoring methods which ensure acquirement of output knowledge, skills and competences

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Description of course M1C4

Basic description		
Course coordinator	**Biserka Funduk Kurjak**	
Course title	**Basics of ultrasound in infertility**	
Study programme	**Ultrasound in Obstetrics and Gynecology**	
Course status	compulsory	
Year	**1**	
ECTS credits and teaching	ECTS student 's workload coefficient	2,0
	Number of hours (L+E+S)	4+20+2

1. COURSE DESCRIPTION

1.1. Course objectives

The aim of the course is that students gain basic theoretical and practical knowledge of gynecologic ultrasound in infertile women who will form the basis for the further extension of knowledge in this area. Basic knowledge is concerning: epidemiology and causes of infertility in women, normal menstrual cycle and ultrasound endocrinology with monitoring of changes in the ovaries and endometrium before and during physiological pregnancy, modes to stimulate ovulation with ultrasound monitoring, invasive procedures in infertility (follicle puncture), ultrasound monitoring of early pregnancy, the most common pelvic pathologies that cause infertility, ultrasound imaging of the most common congenital anomalies of internal female sex organs, the most common pathological conditions during the realization of artificial insemination procedures and their ultrasound monitoring. A special attention will be put to the issues of ethical and psychosocial aspects of ultrasound in infertility as well as the issue of quality control.

1.2. Course enrolment requirements

Enrolment to the university postgraduate study of Ultrasound in obstetrics and gynecology

1.3. Expected course learning outcomes

After the completion of course, the participants know to identify normal pelvic anatomy using ultrasound, with its display by transabdominal and transvaginalprobe. They will be able to show the optimal ultrasound image of the uterus and adnexa in different phases of the menstrual cycle and during ovulation stimulation, using intersections with the proper orientation of the ultrasound image, and the corresponding measurement of changes in the uterus lining and adnexal follicles. The most common causes of infertility in women (congenital defects in development, endometriosis, pelvic inflammatory disease, polycystic ovaries) and invasive and non-invasive ultrasound. The most common surgery in infertile women under ultrasound (follicular puncture, aspiration of ovarian cysts, embryo transfer). Diagnostic monitoring of earlypregnancy and the most common complications during assisted reproduction procedures, such as hyperstimulation syndrome. Distinguishing the extrauterine from the uterine pregnancy, and multiple pregnancies. In addition, they will be aware of potential ethical dilemmas that are associated with the use of ultrasound in infertility as well as the most important psychosocial aspects of ultrasound in infertility, and ways of monitoring the quality of work.

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1.4. Course content

Epidemiology and aetiology of infertility in women, and the role of various ultrasound techniques in the diagnostics of female infertility. Basics of adolescent gynecology and development of sexorgans in women with special emphasis on endocrinology and the role of ultrasound in monitoringchanges in the normal menstrual cycle of women. The most common causes of infertility in women with possibilities of invasive and non-invasive ultrasound. The most common ultrasound guided procedures in infertile women, and ultrasound monitoring of ovulation induction, follicular puncture and aspiration of oocytes, and the role of ultrasound in embryo transfer. Endometriosis, pelvic inflammatory disease, congenital defects in the development of the uterus and other less common causes of infertility and their ultrasonic detection. Ovarian hyperstimulation syndrome and the role of ultrasound in the diagnosis and monitoring.

1.5. Teaching methods	x☐ lectures x☐ seminars and workshops x☐ exercises ☐ long distance education ☐ fieldwork	☐ individual assignment ☐ multimedia and network ☐ laboratories ☐ mentorship ☐ other
1.6. Comments		

1.7. Student's obligations

Each student must submit their diary at the end of each course when the exam from the above items will be held. Upon completion of each course the candidate must send an e-mail or provide proof of attendance, which will be one of the approval criteria for access to the final exam.

1.8. Evaluation of student's work

Course attendance	0,25	Activity/Participation	0,25	Seminar paper		Experimental work	
Written exam	0,5	Oral exam	0,5	Essay		Research	
Project		Sustained knowledge check		Report		Practice	0,5
Portfolio							

1.9. Assessment and evaluation of student's work during classes and on final exam

Assessment of student's work will be performed according to the activities during teaching, teaching attendance, writing test in the form of essay on the subject and based on the activity during exercises. Final exam will be from one of the three offered subjects.

1.10. Assigned reading (at the time of the submission of study programme proposal)

Kurjak A, Chervenak FA. Donald School Textbook of Ultrasound in Obstetrics and Gynecology, 3rdedition. Jaypee Brothers, New Delhi, 2011.
Kupesic S. Color Doppler, 3D and 4D Ultrasound in Gynecology, Infertility and Obstetrics, Jaypee Brothers, New Delhi, 2011.
Ahmed B, Adra A, Nese Kavak Z. Donald School BasicTextbook of Ultrasound in Obstetrics and Gynecology, Jaypee Brothers, New Delhi, 2008.
Kupesic S. Donald School video on Ultrasound in Obstetrics and Gynecology, Jaypee Brothers, New Delhi, 2011.

1.11. Optional / additional reading (at the time of proposing study programme)

Kurjak A, Bajo Arenas J. Donald School Textbook of Transvaginal Sonography, Jaypee Brothers, New Delhi, 2004.
Carrera JM, Kurjak A. Donald School Atlas of Clinical Application of Ultrasound in Obstetrics and Gynecology. Jaypee Brothers, New Delhi, 2006.
Kurjak A. Donald School Atlas of Fetal Anomalies. Jaypee Brothers, New Delhi, 2006.
Antsaklis A, Troyano JM. Donald School Textbook of Interventional Ultrasound. Jaypee Brothers, New Delhi, 2008.
Each student will be subscribed to Donald School Journal of Ultrasound in Obstetrics and Gynecology.

1.12. Number of assigned reading copies with regard to the number of students currently attending the course

Title	*Number of copies*	*Number of students*
Kurjak A, Chervenak FA. Donald School Textbook of Ultrasound in Obstetrics and Gynecology, 3rdedition. Jaypee Brothers, New Delhi, 2011	2	12
Kupesic S. Color Doppler, 3D and 4D Ultrasound in Gynecology, Infertility and	2	12

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Obstetrics, Jaypee Brothers, New Delhi, 2011		
Kupesic S. Donald School video on Ultrasound in Obstetrics and Gynecology, Jaypee Brothers, New Delhi, 2011.	2	12

1.13. Quality monitoring methods which ensure acquirement of output knowledge, skills and competences

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Course description Module 2

LIST OF MODULES/ COURSES							
Study year: 1							
Semester: 1							
MODULE 2 USC 2	COURSE	COORDINATOR	L	E	S	ECTS	STATUS[9]
Module 2. Conventional ultrasound in obstetrics	Sonoembryology	Asim Kurjak, Aleks Finderle	4	4	0	1	C
	Ultrasound in early pregnancy	Aleks Finderle	6	24	4	3,5	C
	Ultrasound in the second and the third trimester	Asim Kurjak, Aleks Finderle	6	24	4	3,5	C
	Multiple pregnancies	Aleks Finderle	4	20	2	2	C
	Total		20	70	10	10	

Description of course M2C1

Basic description		
Course coordinator	**Asim Kurjak, Aleks Finderle**	
Course title	**Sonoembryology**	
Study programme	**Ultrasound in Obstetrics and Gynecology**	
Course status	compulsory	
Year	**1**	
ECTS credits and teaching	ECTS student 's workload coefficient	1,0
	Number of hours (L+E+S)	4+4+0

1. COURSE DESCRIPTION

1.1. Course objectives

The aim of the course is to familiarize students with the role of ultrasound in monitoring normal and pathological development of the embryo compared with the existing theoretical basis of the development of the human embryo and fetus. It is possible to show by the ultrasound the normal development of a human being very early in pregnancy and to compare it with the Carnegie stages of embryonic development, which will then allow easier understanding of the occurrence of congenital anomalies of different organs and systems in embryonic and fetal development.

1.2. Course enrolment requirements

Enrolment to the university postgraduate study of Ultrasound in obstetrics and gynecology

1.3. Expected course learning outcomes

[9] **IMPORTANT:** For the compulsory module/ course, letter O is entered, and letter E for the elective one.

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After the end of this course participants will know the basics of ultrasound embryology of the human embryo and fetus, with special emphasis on large organ systems such as the central nervous system, heart and circulatory system, lungs, urinary system, reproductive organs, locomotor system, senses, the anterior abdominal wall etc. It is expected for participants to know to distinguish normal from pathological development, and to be able to apply this knowledge in their daily work.

1.4. Course content

By applying so-called "Time-lapse cinematography" there will be revealed "in live" the earliest development of the human embryo and Carnegie earliest stages of development. Later Carnegie stages of development of a human being with a demonstration of three-dimensional ultrasound in the view of normal embryonic development. Pathological development of a human by the systems, with epidemiology and possible etiology of congenital anomalies.

1.5. Teaching methods	x☐ lectures x☐ seminars and workshops x☐ exercises ☐ long distance education ☐ fieldwork	☐ individual assignment ☐ multimedia and network ☐ laboratories ☐ mentorship ☐ other
1.6. Comments		

1.7. Student's obligations

Each student must submit their diary at the end of each course when the exam from the above items will be held. Upon completion of each course the candidate must send an e-mail or provide proof of attendance, which will be one of the approval criteria for access to the final exam.

1.8. Evaluation of student's work

Course attendance	0,2	Activity/Participation	0,2	Seminar paper		Experimental work	
Written exam	0,3	Oral exam	0,3	Essay		Research	
Project		Sustained knowledge check		Report		Practice	
Portfolio							

1.9. Assessment and evaluation of student's work during classes and on final exam

Assessment of student's work will be performed according to the activities during teaching, teaching attendance, writing test in the form of essay on the subject and based on the activity during exercises. Final exam will be from one of the three offered subjects.

1.10. Assigned reading (at the time of the submission of study programme proposal)

Pooh RK, Shiota K, Kurjak A. Imaging of the human embryo with magnetic resonance imaging microscopy and high-resolution transvaginal 3-dimensional sonography: human embryology in the21st century. Am J Obstet Gynecol 2011;204(1):77.e1-16. doi: 10.1016/j.ajog.2010.07.028.
Kurjak A, Chervenak FA. Donald School Textbook of Ultrasound in Obstetrics and Gynecology, 3rd edition. Jaypee Brothers, New Delhi, 2011.
Kupesic S. Color Doppler, 3D and 4D Ultrasound in Gynecology, Infertility and Obstetrics, Jaypee Brothers, New Delhi, 2011.
Ahmed B, Adra A, Nese Kavak Z. Donald School Basic Textbook of Ultrasound in Obstetrics and Gynecology, Jaypee Brothers, New Delhi, 2008.
Kupesic S. Donald School video on Ultrasound in Obstetrics and Gynecology, Jaypee Brothers, New Delhi, 2011.

1.11. Optional / additional reading (at the time of proposing study programme)

Mio Y, Maeda K. Time-lapse cinematography of dynamic changes occurring during in vitro development of human embryos. Am J Obstet Gynecol. 2008 Dec;1999(6):660.e1-5. doi: 10.1016/j.ajog.2008.07.023.
Kurjak A, Bajo Arenas J. Donald School Textbook of Transvaginal Sonography, Jaypee Brothers, New Delhi, 2004.
Carrera JM, Kurjak A. Donald School Atlas of Clinical Application of Ultrasound in Obstetrics and Gynecology. Jaypee Brothers, New Delhi, 2006.
Kurjak A. Donald School Atlas of Fetal Anomalies. Jaypee Brothers, New Delhi, 2006.
Antsaklis A, Troyano JM. Donald School Textbook of Interventional Ultrasound. Jaypee Brothers, New Delhi, 2008.
Each student will be subscribed to Donald School Journal of Ultrasound in Obstetrics and Gynecology.

1.12. Number of assigned reading copies with regard to the number of students currently attending the course

Title	*Number of copies*	*Number of students*

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Kupesic S. Color Doppler, 3D and 4D Ultrasound in Gynecology, Infertility and Obstetrics, Jaypee Brothers, New Delhi, 2011	2	12
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Course description M2C2

Basic description		
Course coordinator	**Aleks Finderle**	
Course title	**Ultrasound in early pregnancy**	
Study programme	**Ultrasound in Obstetrics and Gynecology**	
Course status	compulsory	
Year	**1**	
ECTS credits and teaching	ECTS student 's workload coefficient	3,5
	Number of hours (L+E+S)	6+24+4

1. COURSE DESCRIPTION

1.1. Course objectives

The aim of the course is that students gain basic theoretical and practical knowledge about the application of ultrasound in the first trimester of pregnancy, and the evaluation of normal and pathological pregnancy using ultrasound, basic knowledge of ultrasound markers for chromosomal and other congenital anomalies. There will be also talk about the monitoring of trophoblastic disease of extrauterine pregnancy.

1.2. Course enrolment requirements

Enrolment to the university postgraduate study of Ultrasound in obstetrics and gynecology

1.3. Expected course learning outcomes

After the completion of this course participants will know to recognize the early pregnancy using ultrasound and distinguish normal from abnormal pregnancy, to determine the most common ultrasound markers for congenital anomalies with practical knowledge of proper display and measurement of nuchal translucency and its clinical significance. They will particularly learn to display and understand the most common congenital defects in the development of the central nervous system, particularly the brain, then neck, and thorax. They will become familiar with the ultrasound image of the fetal lungs and the most common malformations as well as the ability to evaluate fetal heart screening for fetal congenital heart defects in development. They will become familiar with the epidemiology and significance of congenital heart defects and their detection capabilities in the first trimester. Students will be able to recognize the most common congenital defects in the developing digestive system and differentiating physiological from pathological omphalocele. They will be able to display the "double- bubble" sign in duodenal atresia as signs of some other rare congenital anomalies of the digestive system. Genitourinary malformations and measurement of kidney size and size of the channel system of the kidneys, and display of urinary bladder are also the part of the learning program. There will be also teaching about the disorders in the development of muscular skeletal system.

1.4. Course content

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Ultrasound in the first trimester of pregnancy. Markers of chromosomal abnormalities in the first trimester of pregnancy. Showing the importance of nuchal translucency measuring. The most common congenital defects in development by the systems in the first trimester - the way of their recognition and treatment options. Ultrasound of umbilical cord, placenta and amniotic fluid monitoring. Fetal echocardiography- the role of ultrasound for screening in early pregnancy. Congenital defects in the developing fetus that should not be overlooked in the first trimester.

1.5. Teaching methods	x☐ lectures x☐ seminars and workshops x☐ exercises ☐ long distance education ☐ fieldwork	☐ individual assignment ☐ multimedia and network ☐ laboratories ☐ mentorship ☐ other
1.6. Comments		

1.7. Student's obligations

Each student must submit their diary at the end of each course when the exam from the above items will be held. Upon completion of each course the candidate must send an e-mail or provide proof of attendance, which will be one of the approval criteria for access to the final exam.

1.8. Evaluation of student's work

Course attendance	0,5	Activity/Participation	0,5	Seminar paper		Experimental work	
Written exam	1,0	Oral exam	1,0	Essay		Research	
Project		Sustained knowledge check		Report		Practice	0,5
Portfolio							

1.9. Assessment and evaluation of student's work during classes and on final exam

Assessment of student's work will be performed according to the activities during teaching, teaching attendance, writing test in the form of essay on the subject and based on the activity during exercises. Final exam will be from one of the three offered subjects.

1.10. Assigned reading (at the time of the submission of study programme proposal)

Kurjak A, Chervenak FA. Donald School Textbook of Ultrasound in Obstetrics and Gynecology, 3rd edition. Jaypee Brothers, New Delhi, 2011.
Kupesic S. Color Doppler, 3D and 4D Ultrasound in Gynecology, Infertility and Obstetrics, Jaypee Brothers, New Delhi, 2011.
Ahmed B, Adra A, Nese Kavak Z. Donald School Basic Textbook of Ultrasound in Obstetrics and Gynecology, Jaypee Brothers, New Delhi, 2008.
Kupesic S. Donald School video on Ultrasound in Obstetrics and Gynecology, Jaypee Brothers, New Delhi, 2011.

1.11. Optional / additional reading (at the time of proposing study programme)

Kurjak A, Bajo Arenas J. Donald School Textbook of Transvaginal Sonography, Jaypee Brothers, New Delhi, 2004.
Carrera JM, Kurjak A. Donald School Atlas of Clinical Application of Ultrasound in Obstetrics and Gynecology. Jaypee Brothers, New Delhi, 2006.
Kurjak A. Donald School Atlas of Fetal Anomalies. Jaypee Brothers, New Delhi, 2006.
Antsaklis A, Troyano JM. Donald School Textbook of Interventional Ultrasound. Jaypee Brothers, New Delhi, 2008.
Each student will be subscribed to Donald School Journal of Ultrasound in Obstetrics and Gynecology.

1.12. Number of assigned reading copies with regard to the number of students currently attending the course

Title	*Number of copies*	*Number of students*
Kurjak A, Chervenak FA. Donald School Textbook of Ultrasound in Obstetrics and Gynecology, 3rdedition. Jaypee Brothers, New Delhi, 2011	2	12
Kupesic S. Color Doppler, 3D and 4D Ultrasound in Gynecology, Infertility and Obstetrics, Jaypee Brothers, New Delhi, 2011	2	12
Kupesic S. Donald School video on Ultrasound in Obstetrics and Gynecology, Jaypee Brothers, New Delhi, 2011.	2	12

1.13. Quality monitoring methods which ensure acquirement of output knowledge, skills and competences

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Conducting and regular analysis of survey among students and evaluation of data on the effectiveness of the study programme and its implementation. Each student has a mentor who monitors his attainments during the study. We act according to the Ordinance about the system and the quality improvement of the University of Rijeka, the Code of Ethics of the University of Rijeka and the Code of Ethics of teachers, associates and scientists of School of Medicine, University of Rijeka, Code of Ethics of students, School of Medicine, University of Rijeka, the Regulation on the students' evaluation at the School of Medicine in Rijeka.

Course description M2C3

Basic description		
Course coordinator	**Asim Kurjak, Aleks Finderle**	
Course title	**Ultrasound in the second and the third trimester**	
Study programme	**Ultrasound in Obstetrics and Gynecology**	
Course status	compulsory	
Year	**1**	
ECTS credits and teaching	ECTS student 's workload coefficient	3,5
	Number of hours (L+E+S)	6+24+4

1. COURSE DESCRIPTION

1.1. Course objectives

The aim of the course is that students gain basic theoretical and practical knowledge in the application of ultrasound in the second and third trimesters of pregnancy, and the evaluation of normal and pathological pregnancy using ultrasound, and providing basic knowledge of ultrasound markers of chromosomal and other congenital anomalies, as well as the diagnosis and monitoring of fetus with intrauterine growth retardation, fetal diagnosis and treatment of immune and non-imune hydrops, the basics of fetal therapy. We will also talk about monitoring of trophoblastic disease in extrauterine pregnancy, and findings of cervix at threatening preterm delivery due to the cervical insufficiency.

1.2. Course enrolment requirements

Enrolment to the university postgraduate study of Ultrasound in obstetrics and gynecology

1.3. Expected course learning outcomes

After the completion of this course participants will know to recognize the early pregnancy using ultrasound and distinguish normal from abnormal pregnancy, to determine the most common ultrasound markers for congenital anomalies with practical knowledge of proper display and measurement of nuchal translucency and its clinical significance. They will particularly learn to display and understand the most common congenital defects in the development of the central nervous system, particularly the brain, then neck, and thorax. They will become familiar with the ultrasound image of the fetal lungs and the most common malformations as well as the ability to evaluate fetal heart screening for fetal congenital heart defects in development. They will become familiar with the epidemiology and significance of congenital heart defects and their detection capabilities in the first trimester. Students will be able to recognize the most common congenital defects in the developing digestive system and differentiating physiological from pathological omphalocele. They will be able to display the "double- bubble" sign in duodenal atresia as signs of some other rare congenital anomalies of the digestive system. Genitourinary malformations and measurement of kidney size and size of the channel system of the kidneys, and display of urinary bladder are also the part of the learning program. There will be also teaching about the disorders in the development of muscular skeletal system.

1.4. Course content

The aim of ultrasound in the second and third trimester of pregnancy. Markers of chromosomal abnormalities in pregnancy. Growth retardation of the fetus and its significance in assessing the outcome of pregnancy. The most common congenital defects in the developing fetus during the second and third trimester by systems - a way of recognizing and treatment options. Fetal hydrops and its treatment. Ultrasound umbilical cord, placenta and amniotic fluid monitoring. Fetal echocardiography - the role of ultrasound in screening at 20th week of pregnancy. Public health importance of ultrasound in pregnancy.

1.5. Teaching methods	x☐ lectures x☐ seminars and workshops x☐ exercises	☐ individual assignment ☐ multimedia and network ☐ laboratories

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	☐ long distance education ☐ fieldwork	☐ mentorship ☐ other
1.6. Comments		

1.7. Student's obligations

Each student must submit their diary at the end of each course when the exam from the above items will be held. Upon completion of each course the candidate must send an e-mail or provide proof of attendance, which will be one of the approval criteria for access to the final exam.

1.8. Evaluation of student's work

Course attendance	0,5	Activity/Participation	0,5	Seminar paper		Experimental work	
Written exam	1,0	Oral exam	1,0	Essay		Research	
Project		Sustained knowledge check		Report		Practice	0,5
Portfolio							

1.9. Assessment and evaluation of student's work during classes and on final exam

Assessment of student's work will be performed according to the activities during teaching, teaching attendance, writing test in the form of essay on the subject and based on the activity during exercises. Final exam will be from one of the three offered subjects.

1.10. Assigned reading (at the time of the submission of study programme proposal)

Kurjak A, Chervenak FA. Donald School Textbook of Ultrasound in Obstetrics and Gynecology, 3rd edition. Jaypee Brothers, New Delhi, 2011.
Kupesic S. Color Doppler, 3D and 4D Ultrasound in Gynecology, Infertility and Obstetrics, Jaypee Brothers, New Delhi, 2011.
Ahmed B, Adra A, Nese Kavak Z. Donald School Basic Textbook of Ultrasound in Obstetrics and Gynecology, Jaypee Brothers, New Delhi, 2008.
Kupesic S. Donald School video on Ultrasound in Obstetrics and Gynecology, Jaypee Brothers, New Delhi, 2011.

1.11. Optional / additional reading (at the time of proposing study programme)

Kurjak A, Bajo Arenas J. Donald School Textbook of Transvaginal Sonography, Jaypee Brothers, New Delhi, 2004.
Carrera JM, Kurjak A. Donald School Atlas of Clinical Application of Ultrasound in Obstetrics and Gynecology. Jaypee Brothers, New Delhi, 2006.
Kurjak A. Donald School Atlas of Fetal Anomalies. Jaypee Brothers, New Delhi, 2006.
Antsaklis A, Troyano JM. Donald School Textbook of Interventional Ultrasound. Jaypee Brothers, New Delhi, 2008.
Each student will be subscribed to Donald School Journal of Ultrasound in Obstetrics and Gynecology.

1.12. Number of assigned reading copies with regard to the number of students currently attending the course

Title	*Number of copies*	*Number of students*
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Kupesic S. Color Doppler, 3D and 4D Ultrasound in Gynecology, Infertility and Obstetrics, Jaypee Brothers, New Delhi, 2011	2	12
Kupesic S. Donald School video on Ultrasound in Obstetrics and Gynecology, Jaypee Brothers, New Delhi, 2011.	2	12

1.13. Quality monitoring methods which ensure acquirement of output knowledge, skills and competences

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Basic description		
Course coordinator	**Aleks Finderle**	
Course title	**Multiple pregnancies**	
Study programme	**Ultrasound in Obstetrics and Gynecology**	
Course status	compulsory	
Year	**1**	
ECTS credits and teaching	ECTS student 's workload coefficient	2,0
	Number of hours (L+E+S)	4+20+2

1. COURSE DESCRIPTION

1.1. Course objectives

The objective of the course is that students gain basic theoretical and practical knowledge of ultrasound diagnosis of multiple pregnanices. Early diagnosis of multiple pregnancies with the determination of lambda and mercedes sign and determination of chorionicity and amnionicity. The problem of discordant growth in multiple pregnancies, death of one twin and so called "Vanishing twin" phenomenon. The most common pathologic conditions that threaten foetuses in multiple pregnancies. Twin-to-twin transfusion syndrome - ultrasound diagnosis, treatment options and ultrasound monitoring. Diagnosis of congenital anomalies in multiple births. Syndrome of umbilical cord entanglement.

1.2. Course enrolment requirements

Enrolment to the university postgraduate study of Ultrasound in obstetrics and gynecology

1.3. Expected course learning outcomes

After the completion of this course students will know to recognize very early by ultrasound and to identify multiple fetuses using transvaginal or transabdominal ultrasound. Basic theory of the origin of multiple births, and the role of assisted reproductive methods in epidemiology and the emergence of multiple pregnancies. Participants will be able to determine chorionicity and amnionicity in multiple pregnancy, and to determine the biometrics of embryo/fetus with the comparison of their condition. Diagnosis of twin-to-twin transfusion syndrome, discordant growth of fetuses etc. Detection of congenital anomalies in multiple births, and many ethical and psychosocial dilemmas at different pathology in multiple pregnancies. Selective reduction in multiple pregnancies. The role of fetal behaviour in assessing neurological status of the fetuses in multiple pregnancies. Risk factors of neurodevelopmental outcome in multiple pregnancies and the role of ultrasound in its estimation**.**

1.4. Course content

Multiple pregnancies basic concepts, epidemiology and pathophysiology. The role of ultrasound in defining multiple pregnancies. The role of ultrasound in determining gestational age in multiple pregnancies, biometrics and determining the growth of fetus, and diagnosis of pathological states in multiple pregnancy, such as congenital defects in development, twin-to-twin transfusion syndrome, the death of one twin etc. Methods and frequency of ultrasound monitoring of fetuses in multiple pregnancies and the risks of pregnancy and delivery. The most common invasive procedures in multiple pregnancies using ultrasound.

1.5. Teaching methods	x☐ lectures x☐ seminars and workshops x☐ exercises ☐ long distance education ☐ fieldwork	☐ individual assignment ☐ multimedia and network ☐ laboratories ☐ mentorship ☐ other
1.6. Comments		

1.7. Student's obligations

Each student must submit their diary at the end of each course when the exam from the above items will be held. Upon completion of each course the candidate must send an e-mail or provide proof of attendance, which will be one of the approval criteria for access to the final exam.

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1.8. Evaluation of student's work

Course attendance	0,25	Activity/Participation	0,25	Seminar paper		Experimental work	
Written exam	0,5	Oral exam	0,5	Essay		Research	
Project		Sustained knowledge check		Report		Practice	0,5
Portfolio							

1.9. Assessment and evaluation of student's work during classes and on final exam

Assessment of student's work will be performed according to the activities during teaching, teaching attendance, writing test in the form of essay on the subject and based on the activity during exercises. Final exam will be from one of the three offered subjects.

1.10. Assigned reading (at the time of the submission of study programme proposal)

Kurjak A, Chervenak FA. Donald School Textbook of Ultrasound in Obstetrics and Gynecology, 3rd edition. Jaypee Brothers, New Delhi, 2011.
Kupesic S. Color Doppler, 3D and 4D Ultrasound in Gynecology, Infertility and Obstetrics, Jaypee Brothers, New Delhi, 2011.
Ahmed B, Adra A, Nese Kavak Z. Donald School Basic Textbook of Ultrasound in Obstetrics and Gynecology, Jaypee Brothers, New Delhi, 2008.
Kupesic S. Donald School video on Ultrasound in Obstetrics and Gynecology, Jaypee Brothers, New Delhi, 2011.

1.11. Optional / additional reading (at the time of proposing study programme)

Kurjak A, Bajo Arenas J. Donald School Textbook of Transvaginal Sonography, Jaypee Brothers, New Delhi, 2004.
Carrera JM, Kurjak A. Donald School Atlas of Clinical Application of Ultrasound in Obstetrics and Gynecology. Jaypee Brothers, New Delhi, 2006.
Kurjak A. Donald School Atlas of Fetal Anomalies. Jaypee Brothers, New Delhi, 2006.
Antsaklis A, Troyano JM. Donald School Textbook of Interventional Ultrasound. Jaypee Brothers, New Delhi, 2008.
Each student will be subscribed to Donald School Journal of Ultrasound in Obstetrics and Gynecology.

1.12. Number of assigned reading copies with regard to the number of students currently attending the course

Title	*Number of copies*	*Number of students*
Kurjak A, Chervenak FA. Donald School Textbook of Ultrasound in Obstetrics and Gynecology, 3rdedition. Jaypee Brothers, New Delhi, 2011	2	12
Kupesic S. Color Doppler, 3D and 4D Ultrasound in Gynecology, Infertility and Obstetrics, Jaypee Brothers, New Delhi, 2011	2	12
Kupesic S. Donald School video on Ultrasound in Obstetrics and Gynecology, Jaypee Brothers, New Delhi, 2011.	2	12

1.13. Quality monitoring methods which ensure acquirement of output knowledge, skills and competences

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Course description Module 3

LIST OF MODULES/ COURSES							
Year study: 1							
Semester: 1							
MODULE 3 USC 3	COURSE	COORDINATOR	L	E	S	ECTS	STATUS[10]
Module 3. Conventional ultrasound in gynaecology	Basics of child and adolescent gyecology	Biserka Funduk Kurjak	4	2	0	1	C
	Utrasound in women of generative age	Herman Haller	8	34	4	4,5	C
	Ultrasound oncology and ultrasound in menopause and postmenopause	Herman Haller Asim Kurjak	8	34	6	4,5	C
	Total		20	70	10	10	

Course description M3C1

Basic description		
Course coordinator	**Biserka Funduk Kurjak**	
Course title	**Basics of child and adolescent gyecology**	
Study programme	**Ultrasound in Obstetrics and Gynecology**	
Course status	compulsory	
Year	**1**	
ECTS credits and teaching	ECTS student 's workload coefficient	1,0
	Number of hours (L+E+S)	4+2+0

1. COURSE DESCRIPTION

1.1. Course objectives

The aim of the course is to familiarize students with the basics of the development of female sex organs, the possibility of errors in the development of internal and external genital organs in women, the term of ambiguous genitalia and possible causes, physiology of puberty with premature puberty and delayed puberty, amenorrhea in adolescents, dysfunctional bleeding in adolescence and the role of ultrasound, structural malformations of the sexual organs of women and the role of ultrasound in detecting benign and malignant ovarian tumours in childhood and adolescence, painful menstruation, acute and chronic pelvic pain, endometriosis, adolescent pregnancy. Sexual abuse in childhood and adolescence, and legal issues in pediatric and adolescent gynecology.

1.2. Course enrolment requirements

Enrolment to the university postgraduate study of Ultrasound in obstetrics and gynecology

[10] **IMPORTANT:** For the compulsory module/ course, letter O is entered, and letter E for the elective one.

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1.3. Expected course learning outcomes

Upon the completion of this course, student will know the basics of pediatric and adolescent gynecology, including the development of the sexual organs in humans, with routing to female or male direction. Development of internal and external genital organs in women with endocrine development processes, and possible congenital developmental and other pathological changes in the female genital organs from new born to adolescent period. The role of ultrasound in monitoring of physiological and pathological gynecological disorders in childhood and adolescence, and in the monitoring of adolescent pregnancy, sexual abuse and other pathologies characteristic of this age group.

1.4. Course content

The development of female sex organs, defects in the development of internal and external genital organs in women, the term of ambiguous genitalia and its possible causes, physiology of puberty, with premature puberty and delayed puberty, amenorrhea in adolescents, dysfunctional bleeding in adolescence and the role of ultrasound, structural malformations of the sexual organs in women and the role of ultrasound in their detection, benign and malignant ovarian tumours in childhood and adolescence, painful menstruation, acute and chronic pelvic pain, endometriosis, adolescent pregnancy. Sexual abuse in childhood and adolescence, and legal issues in pediatric and adolescent gynecology.

1.5. Teaching methods	x☐ lectures x☐ seminars and workshops x☐ exercises ☐ long distance education ☐ fieldwork	☐ individual assignment ☐ multimedia and network ☐ laboratories ☐ mentorship ☐ other
1.6. Comments		

1.7. Student's obligations

Each student must submit their diary at the end of each course when the exam from the above items will be held. Upon completion of each course the candidate must send an e-mail or provide proof of attendance, which will be one of the approval criteria for access to the final exam.

1.8. Evaluation of student's work

Course attendance	0,1	Activity/Participation	0,1	Seminar paper		Experimental work	
Written exam	0,3	Oral exam	0,3	Essay		Research	
Project		Sustained knowledge check		Report		Practice	0,2
Portfolio							

1.9. Assessment and evaluation of student's work during classes and on final exam

Assessment of student's work will be performed according to the activities during teaching, teaching attendance, writing test in the form of essay on the subject and based on the activity during exercises. Final exam will be from one of the three offered subjects.

1.10. Assigned reading (at the time of the submission of study programme proposal)

Kurjak A, Chervenak FA. Donald School Textbook of Ultrasound in Obstetrics and Gynecology, 3rd edition. Jaypee Brothers, New Delhi, 2011.
Kupesic S. Color Doppler, 3D and 4D Ultrasound in Gynecology, Infertility and Obstetrics, Jaypee Brothers, New Delhi, 2011.
Ahmed B, Adra A, Nese Kavak Z. Donald School Basic Textbook of Ultrasound in Obstetrics and Gynecology, Jaypee Brothers, New Delhi, 2008.
Kupesic S. Donald School video on Ultrasound in Obstetrics and Gynecology, Jaypee Brothers, New Delhi, 2011.
Emans J, Laufer MR, Goldstein DP. Pediatric and Adolescent Gynecology, 5th Ed. Lippincott Williams and Wilkins Co, Philadelphia, 2005.

1.11. Optional / additional reading (at the time of proposing study programme)

Kurjak A, Bajo Arenas J. Donald School Textbook of Transvaginal Sonography, Jaypee Brothers, New Delhi, 2004.
Carrera JM, Kurjak A. Donald School Atlas of Clinical Application of Ultrasound in Obstetrics and Gynecology. Jaypee Brothers, New Delhi, 2006.
Kurjak A. Donald School Atlas of Fetal Anomalies. Jaypee Brothers, New Delhi, 2006.
Antsaklis A, Troyano JM. Donald School Textbook of Interventional Ultrasound. Jaypee Brothers, New Delhi, 2008.
Each student will be subscribed to Donald School Journal of Ultrasound in Obstetrics and Gynecology.

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1.12. Number of assigned reading copies with regard to the number of students currently attending the course

Title	*Number of copies*	*Number of students*
Kurjak A, Chervenak FA. Donald School Textbook of Ultrasound in Obstetrics and Gynecology, 3rdedition. Jaypee Brothers, New Delhi, 2011	2	12
Kupesic S. Color Doppler, 3D and 4D Ultrasound in Gynecology, Infertility and Obstetrics, Jaypee Brothers, New Delhi, 2011	2	12
Kupesic S. Donald School video on Ultrasound in Obstetrics and Gynecology, Jaypee Brothers, New Delhi, 2011.	2	12

1.13. Quality monitoring methods which ensure acquirement of output knowledge, skills and competences

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Course description M3C2

Basic description		
Course coordinator	**Herman Haller**	
Course title	**Utrasound in women of generative age**	
Study programme	**Ultrasound in Obstetrics and Gynecology**	
Course status	compulsory	
Year	**1**	
ECTS credits and teaching	ECTS student 's workload coefficient	4,5
	Number of hours (L+E+S)	8+34+4

1. COURSE DESCRIPTION

1.1. Course objectives

The aim of the course to get familiar with ultrasound in women of childbearing age, in diseases of the uterus, adnexa and small pelvis, and especially: malformations of the uterus, adenomyoma and adenomyosis, endometrial diseases including various causes of bleeding, cervical pathology, diagnosis of benign and malignant tumours of the ovary and endometrium, extragenital pelvic diseases, pelvic inflammatory disease, ultrasound diagnostics of pelvic pain and differential diagnosis, endometriosis, and the role of other imaging methods in the diagnosis of these diseases.

1.2. Course enrolment requirements

Enrolment to the university postgraduate study of Ultrasound in obstetrics and gynecology

1.3. Expected course learning outcomes

After the end of this course, participants will know to differentiate myoma from adenomyosis, to properly apply ultrasound in endometrial bleeding of various causes, to properly measure endometrium at different stages of the menstrual cycle, and to identify the most common pathological conditions of the endometrium, and reliably distinguish endometriom, dermoid cyst, hydrosalpinx, peritoneal psudocyst, paraovarian cyst, benign and malignant ovarian tumours. In addition, they will know how to perform ultrasound diagnosis of pelvic inflammatory disease, ectopic pregnancy, and other conditions, such as ovulation induction etc. In addition, participants will possess the knowledge about the most common ultrasound findings in children with precocious puberty, menarche, telarche, adrenarhe, virilization, and ultrasound findings in primary and secondary amenorrhea.

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1.4. Course content

Uterine diseases including doppler examination, adenomyoma / adenomyosis, uterine malformations, diseases of the endometrium: an ultrasound based methods in case of bleeding from the endometrium, cervical pathology, extragenital disease in the pelvis (intestine, appendix, bladder), pelvic inflammatory disease (PID), complications in early pregnancy - mola and choriocarcinoma, all forms of ectopic pregnancy (inclusive diagnosis and treatment), ultrasound in the evaluation of women with pelvic pain including torsion adnexa, pelvic inflammatory disease, endometriosis and extragenital causes (appendicitis, diverticulitis). New methods such as ultrasound contrast agents. The role of ultrasound in comparison with other imaging techniques such as magnetic resonance imaging and computed tomography.

1.5. Teaching methods	x☐ lectures x☐ seminars and workshops x☐ exercises ☐ long distance education ☐ fieldwork	☐ individual assignment ☐ multimedia and network ☐ laboratories ☐ mentorship ☐ other
1.6. Comments		

1.7. Student's obligations

Each student must submit their diary at the end of each course when the exam from the above items will be held. Upon completion of each course the candidate must send an e-mail or provide proof of attendance, which will be one of the approval criteria for access to the final exam.

1.8. Evaluation of student's work

Course attendance	0,5	Activity/Participation	0,5	Seminar paper		Experimental work	
Written exam	1,5	Oral exam	1,5	Essay		Research	
Project		Sustained knowledge check		Report		Practice	0,5
Portfolio							

1.9. Assessment and evaluation of student's work during classes and on final exam

Assessment of student's work will be performed according to the activities during teaching, teaching attendance, writing test in the form of essay on the subject and based on the activity during exercises. Final exam will be from one of the three offered subjects.

1.10. Assigned reading (at the time of the submission of study programme proposal)

Kurjak A, Chervenak FA. Donald School Textbook of Ultrasound in Obstetrics and Gynecology, 3rd edition. Jaypee Brothers, New Delhi, 2011.
Kupesic S. Color Doppler, 3D and 4D Ultrasound in Gynecology, Infertility and Obstetrics, Jaypee Brothers, New Delhi, 2011.
Ahmed B, Adra A, Nese Kavak Z. Donald School Basic Textbook of Ultrasound in Obstetrics and Gynecology, Jaypee Brothers, New Delhi, 2008.
Kupesic S. Donald School video on Ultrasound in Obstetrics and Gynecology, Jaypee Brothers, New Delhi, 2011.
Emans J, Laufer MR, Goldstein DP. Pediatric and Adolescent Gynecology, 5th Ed. Lippincott Williams and Wilkins Co, Philadelphia, 2005.

1.11. Optional / additional reading (at the time of proposing study programme)

Kurjak A, Bajo Arenas J. Donald School Textbook of Transvaginal Sonography, Jaypee Brothers, New Delhi, 2004.
Carrera JM, Kurjak A. Donald School Atlas of Clinical Application of Ultrasound in Obstetrics and Gynecology. Jaypee Brothers, New Delhi, 2006.
Kurjak A. Donald School Atlas of Fetal Anomalies. Jaypee Brothers, New Delhi, 2006.
Antsaklis A, Troyano JM. Donald School Textbook of Interventional Ultrasound. Jaypee Brothers, New Delhi, 2008.
Each student will be subscribed to Donald School Journal of Ultrasound in Obstetrics and Gynecology.

1.12. Number of assigned reading copies with regard to the number of students currently attending the course

Title	*Number of copies*	*Number of students*
Kurjak A, Chervenak FA. Donald School Textbook of Ultrasound in Obstetrics and Gynecology, 3rdedition. Jaypee Brothers, New Delhi, 2011	2	12
Kupesic S. Color Doppler, 3D and 4D Ultrasound in Gynecology, Infertility and	2	12

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Obstetrics, Jaypee Brothers, New Delhi, 2011		
Kupesic S. Donald School video on Ultrasound in Obstetrics and Gynecology, Jaypee Brothers, New Delhi, 2011.	2	12

1.13. Quality monitoring methods which ensure acquirement of output knowledge, skills and competences

Conducting and regular analysis of survey among students and evaluation of data on the effectiveness of the study programme and its implementation. Each student has a mentor who monitors his attainments during the study. We act according to the Ordinance about the system and the quality improvement of the University of Rijeka, the Code of Ethics of the University of Rijeka and the Code of Ethics of teachers, associates and scientists of School of Medicine, University of Rijeka, Code of Ethics of students, School of Medicine, University of Rijeka, the Regulation on the students' evaluation at the School of Medicine in Rijeka.

Course description M3C3

Basic description		
Course coordinator	**Herman Haller, Asim Kurjak**	
Course title	**Ultrasound oncology and ultrasound in menopause and postmenopause**	
Study programme	**Ultrasound in Obstetrics and Gynecology**	
Course status	compulsory	
Year	**1**	
ECTS credits and teaching	ECTS student 's workload coefficient	4,5
	Number of hours (L+E+S)	8+34+6

1. COURSE DESCRIPTION

1.1. Course objectives

The aim of the course is that students gain basic theoretical and practical knowledge of gynecologic ultrasound related to the period of menopause and postmenopause and gynecological oncology. A special attention will be paid to the ultrasound evaluation of the causes of menopausal and postmenopausal bleeding, and detection of benign and malignant tumours of the endometrium, uterus, cervix, ovaries and fallopian tubes.

1.2. Course enrolment requirements

Enrolment to the university postgraduate study of Ultrasound in obstetrics and gynecology

1.3. Expected course learning outcomes

After the completion of this course, participants will know to identify bleeding in menopausal and postmenopausal women using ultrasound, and they will be able to distinguish uterine myoma from adenomyosis, to identify benign and malignant tumours of the endometrium with the proper measurement of the thickness of the endometrium, to identify benign and malignant tumours in the area of adnexa, and to evaluate by the ultrasound possible torsion of the tumour in the area of adnexa. Participants will be able to apply ultrasound in screening for malignant tumours in the area of genital organs, as well as for monitoring the patients after surgery and other methods of cancer treatment.

1.4. Course content

Menopausal and postmenopausal uterine bleeding, benign and malignant tumours of the uterus, endometrial and cervical cancer, benign and malignant ovarian tumours with the possibility of ultrasonic techniques in their diagnosis and comparison to other imaging methods in their assessment. Correlation of ultrasound and surgical (laparoscopic or pathological anatomy) findings.

1.5. Teaching methods	x☐ lectures x☐ seminars and workshops x☐ exercises	☐ individual assignment ☐ multimedia and network ☐ laboratories

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	☐ long distance education ☐ fieldwork	☐ mentorship ☐ other
1.6. Comments		

1.7. Student's obligations

Each student must submit their diary at the end of each course when the exam from the above items will be held. Upon completion of each course the candidate must send an e-mail or provide proof of attendance, which will be one of the approval criteria for access to the final exam.

1.8. Evaluation of student's work

Course attendance	0,5	Activity/Participation	0,5	Seminar paper		Experimental work	
Written exam	1,5	Oral exam	1,0	Essay		Research	
Project		Sustained knowledge check		Report		Practice	1,0
Portfolio							

1.9. Assessment and evaluation of student's work during classes and on final exam

Assessment of student's work will be performed according to the activities during teaching, teaching attendance, writing test in the form of essay on the subject and based on the activity during exercises. Final exam will be from one of the three offered subjects.

1.10. Assigned reading (at the time of the submission of study programme proposal)

Kurjak A, Chervenak FA. Donald School Textbook of Ultrasound in Obstetrics and Gynecology, 3rd edition. Jaypee Brothers, New Delhi, 2011.
Kupesic S. Color Doppler, 3D and 4D Ultrasound in Gynecology, Infertility and Obstetrics, Jaypee Brothers, New Delhi, 2011.
Ahmed B, Adra A, Nese Kavak Z. Donald School Basic Textbook of Ultrasound in Obstetrics and Gynecology, Jaypee Brothers, New Delhi, 2008.
Kupesic S. Donald School video on Ultrasound in Obstetrics and Gynecology, Jaypee Brothers, New Delhi, 2011.
Emans J, Laufer MR, Goldstein DP. Pediatric and Adolescent Gynecology, 5th Ed. Lippincott Williams and Wilkins Co, Philadelphia, 2005.

1.11. Optional / additional reading (at the time of proposing study programme)

Kurjak A, Bajo Arenas J. Donald School Textbook of Transvaginal Sonography, Jaypee Brothers, New Delhi, 2004.
Carrera JM, Kurjak A. Donald School Atlas of Clinical Application of Ultrasound in Obstetrics and Gynecology. Jaypee Brothers, New Delhi, 2006.
Kurjak A. Donald School Atlas of Fetal Anomalies. Jaypee Brothers, New Delhi, 2006.
Antsaklis A, Troyano JM. Donald School Textbook of Interventional Ultrasound. Jaypee Brothers, New Delhi, 2008.
Each student will be subscribed to Donald School Journal of Ultrasound in Obstetrics and Gynecology.

1.12. Number of assigned reading copies with regard to the number of students currently attending the course

Title	*Number of copies*	*Number of students*
Kurjak A, Chervenak FA. Donald School Textbook of Ultrasound in Obstetrics and Gynecology, 3rdedition. Jaypee Brothers, New Delhi, 2011	2	12
Kupesic S. Color Doppler, 3D and 4D Ultrasound in Gynecology, Infertility and Obstetrics, Jaypee Brothers, New Delhi, 2011	2	12
Kupesic S. Donald School video on Ultrasound in Obstetrics and Gynecology, Jaypee Brothers, New Delhi, 2011.	2	12

1.13. Quality monitoring methods which ensure acquirement of output knowledge, skills and competences

Conducting and regular analysis of survey among students and evaluation of data on the effectiveness of the study programme and its implementation. Each student has a mentor who monitors his attainments during the study. We act according to the Ordinance about the system and the quality improvement of the University of Rijeka, the Code of Ethics of the University of Rijeka and the Code of Ethics of teachers, associates and scientists of School of Medicine, University of Rijeka, Code of Ethics of students, School of Medicine, University of Rijeka, the Regulation on the students' evaluation at the School of Medicine in Rijeka.

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LIST OF MODULES/ COURSES							
Study year: 1							
Semester: 2							
MODULE 4 USC 4	COURSE	COORDINATOR	P	V	S	ECTS	STATUS[11]
Module 4: Conventional ultrasound in infertility	Public health and medical aspects of infertility	Herman Haller	10	28	4	4,5	C
	Ultrasound in diagnosis and treatment of infertility	Herman Haller Asim Kurjak	10	42	6	5,5	C
	Total		20	70	10	10	

Course description M4C1

Basic description		
Course coordinator	**Herman Haller**	
Course title	**Public health and medical aspects of infertility**	
Study programme	**Ultrasound in Obstetrics and Gynecology**	
Course status	compulsory	
Year	**1**	
ECTS credits and teaching	ECTS student 's workload coefficient	4,5
	Number of hours (L+E+S)	10+28+4

1. COURSE DESCRIPTION

1.1. Course objectives

The aim of the course is to familiarize students with public health significance of infertility in humans - the present situation and prospects, family planning, sterilization and contraception, causes of female and male infertility, regulation of the menstrual cycle, fertilization and implantation, endocrinology of pregnancy, disorders of the menstrual cycle and the effect of other glands with internal secretion to the infertility in women, and methods of infertility treatment.

1.2. Course enrolment requirements

Enrolment to the university postgraduate study of Ultrasound in obstetrics and gynecology

1.3. Expected course learning outcomes

Upon completion of this course student will be familiar with the public health significance of infertility in humans, methods of family planning, sterilization and contraception, the causes of female and male infertility, regulation of the menstrual cycle, fertilization and implantation, endocrinology of pregnancy, disorders of the menstrual cycle and the effect of other glands of internal secretion to infertility in women, and methods of infertility treatment.

1.4. Course content

[11] **IMPORTANT:** For the compulsory module/ course, letter O is entered, and letter E for the elective one

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Epidemiology and public health implications of infertility, methods of family planning, gynecological endocrinology and neuroendocrinology, regulation of the menstrual cycle, the etiology and pathophysiology of infertility, menstrual disorders and amenorrhea, uterine disease and infertility, Asherman syndrome, ovarian disease and infertility, extragenital causes of infertility, endometriosis as a cause infertility, habitual abortion and infertility, extrauterine pregnancy, malignant disease of women and infertility, treatment of infertile marriages, infertility treatments with assisted reproductive techniques.

1.5. Teaching methods	x☐ lectures x☐ seminars and workshops x☐ exercises ☐ long distance education ☐ fieldwork	☐ individual assignment ☐ multimedia and network ☐ laboratories ☐ mentorship ☐ other
1.6. Comments		

1.7. Student's obligations

Each student must submit their diary at the end of each course when the exam from the above items will be held. Upon completion of each course the candidate must send an e-mail or provide proof of attendance, which will be one of the approval criteria for access to the final exam.

1.8. Evaluation of student's work

Course attendance	0,5	Activity/Participation	0,5	Seminar paper		Experimental work	
Written exam	1,5	Oral exam	1,0	Essay		Research	
Project		Sustained knowledge check		Report		Practice	1,0
Portfolio							

1.9. Assessment and evaluation of student's work during classes and on final exam

Assessment of student's work will be performed according to the activities during teaching, teaching attendance, writing test in the form of essay on the subject and based on the activity during exercises. Final exam will be from one of the three offered subjects.

1.10. Assigned reading (at the time of the submission of study programme proposal)

Kurjak A, Chervenak FA. Donald School Textbook of Ultrasound in Obstetrics and Gynecology, 3rd edition. Jaypee Brothers, New Delhi, 2011.
Kupesic S. Color Doppler, 3D and 4D Ultrasound in Gynecology, Infertility and Obstetrics, Jaypee Brothers, New Delhi, 2011.
Ahmed B, Adra A, Nese Kavak Z. Donald School Basic Textbook of Ultrasound in Obstetrics and Gynecology, Jaypee Brothers, New Delhi, 2008.
Kupesic S. Donald School video on Ultrasound in Obstetrics and Gynecology, Jaypee Brothers, New Delhi, 2011.

1.11. Optional / additional reading (at the time of proposing study programme)

Kurjak A, Bajo Arenas J. Donald School Textbook of Transvaginal Sonography, Jaypee Brothers, New Delhi, 2004.
Carrera JM, Kurjak A. Donald School Atlas of Clinical Application of Ultrasound in Obstetrics and Gynecology. Jaypee Brothers, New Delhi, 2006.
Kurjak A. Donald School Atlas of Fetal Anomalies. Jaypee Brothers, New Delhi, 2006.
Antsaklis A, Troyano JM. Donald School Textbook of Interventional Ultrasound. Jaypee Brothers, New Delhi, 2008.
Each student will be subscribed to Donald School Journal of Ultrasound in Obstetrics and Gynecology.

1.12. Number of assigned reading copies with regard to the number of students currently attending the course

Title	*Number of copies*	*Number of students*
Kurjak A, Chervenak FA. Donald School Textbook of Ultrasound in Obstetrics and Gynecology, 3rdedition. Jaypee Brothers, New Delhi, 2011	2	12
Kupesic S. Color Doppler, 3D and 4D Ultrasound in Gynecology, Infertility and Obstetrics, Jaypee Brothers, New Delhi, 2011	2	12
Kupesic S. Donald School video on Ultrasound in Obstetrics and Gynecology, Jaypee Brothers, New Delhi, 2011.	2	12

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1.13. Quality monitoring methods which ensure acquirement of output knowledge, skills and competences
Conducting and regular analysis of survey among students and evaluation of data on the effectiveness of the study programme and its implementation. Each student has a mentor who monitors his attainments during the study. We act according to the Ordinance about the system and the quality improvement of the University of Rijeka, the Code of Ethics of the University of Rijeka and the Code of Ethics of teachers, associates and scientists of School of Medicine, University of Rijeka, Code of Ethics of students, School of Medicine, University of Rijeka, the Regulation on the students' evaluation at the School of Medicine in Rijeka.

Course description M4C2

Basic description		
Course coordinator	**Herman Haller, Asim Kurjak**	
Course title	**Ultrasound in diagnosis and treatment of infertility**	
Study programme	**Ultrasound in Obstetrics and Gynecology**	
Course status	compulsory	
Year	**1**	
ECTS credits and teaching	ECTS student 's workload coefficient	5,5
	Number of hours (L+E+S)	10+42+6

1. COURSE DESCRIPTION

1.1. Course objectives

The aim of the course is to familiarize students with the role of ultrasound in the diagnosis and treatment of infertility in women, especially when choosing a method of contraception, revealing the cause of female infertility, monitoring changes in the genital organs of women during the menstrual cycle, monitoring implantation and very early pregnancy, monitoring the menstrual dysfunction, its role in the monitoring of ovarian stimulation and infertility treatment and follow-up of women undergoing assisted fertilization methods.

1.2. Course enrolment requirements

Enrolment to the university postgraduate study of Ultrasound in obstetrics and gynecology

1.3. Expected course learning outcomes

Upon completion of this course, student will be familiar with different methods of application of ultrasound technique in family planning, including the selection of contraceptive methods, he will be able to recognize ultrasound identifiable causes of infertility in women, basic changes in the endometrium and ovaries during the menstrual cycle, to use ultrasound for monitoring the implantation after embryo transfer, to monitor early pregnancy and interpret ultrasound in early pregnancy, and to be familiar with the role of ultrasound in the basic methods of infertility treatment.

1.4. Course content

The role of ultrasound while choosing a method of family planning, and in gynecological endocrinology including the regulation of the menstrual cycle, the role of ultrasound in the etiology and pathophysiology of infertility, the role of ultrasound in the menstrual cycle including amenorrhea, congenital defects in the development of the uterus and other diseases of the uterus (Asherman syndrome), ovarian disease and fallopian tubes, endometriosis, habitual abortion, extrauterine pregnancy. The role of ultrasound in the detection of benign and malignant diseases of women associated with infertility, treatment of infertile marriages, treatments for infertility.

1.5. Teaching methods	x☐ lectures x☐ seminars and workshops x☐ exercises ☐ long distance education ☐ fieldwork	☐ individual assignment ☐ multimedia and network ☐ laboratories ☐ mentorship ☐ other
1.6. Comments		

1.7. Student's obligations

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Each student must submit their diary at the end of each course when the exam from the above items will be held. Upon completion of each course the candidate must send an e-mail or provide proof of attendance, which will be one of the approval criteria for access to the final exam.

1.8. Evaluation of student's work

Course attendance	0,5	Activity/Participation	0,5	Seminar paper		Experimental work	
Written exam	2,0	Oral exam	1,5	Essay		Research	
Project		Sustained knowledge check		Report		Practice	1,0
Portfolio							

1.9. Assessment and evaluation of student's work during classes and on final exam

Assessment of student's work will be performed according to the activities during teaching, teaching attendance, writing test in the form of essay on the subject and based on the activity during exercises. Final exam will be from one of the three offered subjects.

1.10. Assigned reading (at the time of the submission of study programme proposal)

Kurjak A, Chervenak FA. Donald School Textbook of Ultrasound in Obstetrics and Gynecology, 3rd edition. Jaypee Brothers, New Delhi, 2011.
Kupesic S. Color Doppler, 3D and 4D Ultrasound in Gynecology, Infertility and Obstetrics, Jaypee Brothers, New Delhi, 2011.
Ahmed B, Adra A, Nese Kavak Z. Donald School Basic Textbook of Ultrasound in Obstetrics and Gynecology, Jaypee Brothers, New Delhi, 2008.
Kupesic S. Donald School video on Ultrasound in Obstetrics and Gynecology, Jaypee Brothers, New Delhi, 2011.

1.11. Optional / additional reading (at the time of proposing study programme)

Kurjak A, Bajo Arenas J. Donald School Textbook of Transvaginal Sonography, Jaypee Brothers, New Delhi, 2004.
Carrera JM, Kurjak A. Donald School Atlas of Clinical Application of Ultrasound in Obstetrics and Gynecology. Jaypee Brothers, New Delhi, 2006.
Kurjak A. Donald School Atlas of Fetal Anomalies. Jaypee Brothers, New Delhi, 2006.
Antsaklis A, Troyano JM. Donald School Textbook of Interventional Ultrasound. Jaypee Brothers, New Delhi, 2008.
Each student will be subscribed to Donald School Journal of Ultrasound in Obstetrics and Gynecology.

1.12. Number of assigned reading copies with regard to the number of students currently attending the course

Title	*Number of copies*	*Number of students*
Kurjak A, Chervenak FA. Donald School Textbook of Ultrasound in Obstetrics and Gynecology, 3rdedition. Jaypee Brothers, New Delhi, 2011	2	12
Kupesic S. Color Doppler, 3D and 4D Ultrasound in Gynecology, Infertility and Obstetrics, Jaypee Brothers, New Delhi, 2011	2	12
Kupesic S. Donald School video on Ultrasound in Obstetrics and Gynecology, Jaypee Brothers, New Delhi, 2011.	2	12

1.13. Quality monitoring methods which ensure acquirement of output knowledge, skills and competences

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Course description Module 5

LIST OF MODULES/ COURSES							
Study year: 1							
Semester: 2							
MODULE 5 USC 5	COURSE	COORDINATOR	L	E	S	ECTS	STATUS[12]
Module 5. Three dimensional (3D), fourdimensional (4D) ultrasound and doppler in obstetrics and gynaecology	Doppler and 3D/4D ultrasound in obstetrics	Asim Kurjak,	7	22	3	3	C
	Doppler and 3D/4D ultrasound in gynecology and infertility	Eberhard Merz	7	28	3	4	C
	Total		14	50	6	7	

Course description M5C1

Basic description		
Course coordinator	**Asim Kurjak**	
Course title	**Doppler and 3D/4D ultrasound in obstetrics**	
Study programme	**Ultrasound in Obstetrics and Gynecology**	
Course status	compulsory	
Year	**1**	
ECTS credits and teaching	ECTS student 's workload coefficient	3,0
	Number of hours (L+E+S)	7+22+3

1. COURSE DESCRIPTION

1.1. Course objectives

The aim of the course is for students to gain theoretical and practical knowledge of 3D/4D obstetric ultrasound and are related to: displaying the early pregnancy using 3D ultrasound, the usage of 3D ultrasound in the first, second and third trimester of pregnancy, 3D ultrasound in detecting normal anatomic fetal structures and placenta, 3D ultrasound in the diagnosis and monitoring of multiple pregnancies, features of 3D/4D ultrasound techniques in the detection of congenital defects in the developing fetus, fetal organ volumetry, the application of modern techniques of 3D ultrasound in obstetrics, fetal monitoring behavioral and neurological assessment of the fetus by KANET test.

1.2. Course enrolment requirements

Enrolment to the university postgraduate study of Ultrasound in obstetrics and gynecology

1.3. Expected course learning outcomes

After the end of this course participants will know the indications for the use of 3D/4D ultrasound in obstetrics, and will know when the application of these techniques could improve their diagnostic capabilities; they will also be able to apply different Doppler ultrasound technique in evaluation of the fetus and fetoplacental circulation. Particularly important will be the use of 3D/4D ultrasound in the view

[12] **IMPORTANT:** For the compulsory module/ course, letter O is entered, and letter E for the elective one

of normal anatomy of the fetus in cases of doubt, as well as the display of congenital anomalies by different fetal organ systems using different 3D/4D ultrasound techniques. Students will know the basics of assessment of neurological fetal status by assessing the behavior of the fetus by applying Kurjak antenatal neurological test (KANET).

1.4. Course content

Basics of 3D/4D ultrasound techniques in exploring the anatomy of the uterus, placenta and fetal membranes. Three-dimensional ultrasound in the diagnosis of early pregnancy, and in the evaluation of disorders of fetal development including markers of chromosomopathies such as nuchal translucency, nasal bone, chorioid plexus cysts, hyperechogenic foci of the fetal heart etc. The role of 3D/4D ultrasound in the diagnosis of fetal malformations of the heart (Spatial ImagingTemporal Correlation - STIC). Application of 3D/4D ultrasound in the diagnosis and follow up of multiple pregnancy, with early signs of multiple pregnancy, types of multiple pregnancies and ways of their follow-up compared with single pregnancies. The application of 3D ultrasound in the assessment of fetuses from high-risk pregnancies. Estimation of fetal behaviour using 4D ultrasound and the role of KANET test in screening for neurologically damaged fetuses. At the end, there will be discussion about psychosocial and ethical aspects of 3D/4D ultrasound in obstetrics.

1.5. Teaching methods		
	x☐ lectures x☐ seminars and workshops x☐ exercises ☐ long distance education ☐ fieldwork	☐ individual assignment ☐ multimedia and network ☐ laboratories ☐ mentorship ☐ other

1.6. Comments	

1.7. Student's obligations

Each student must submit their diary at the end of each course when the exam from the above items will be held. Upon completion of each course the candidate must send an e-mail or provide proof of attendance, which will be one of the approval criteria for access to the final exam.

1.8. Evaluation of student's work

Course attendance	0,25	Activity/Participation	0,25	Seminar paper		Experimental work	
Written exam	1,0	Oral exam	0,5	Essay		Research	
Project		Sustained knowledge check		Report		Practice	1,0
Portfolio							

1.9. Assessment and evaluation of student's work during classes and on final exam

Assessment of student's work will be performed according to the activities during teaching, teaching attendance, writing test in the form of essay on the subject and based on the activity during exercises. Final exam will be from one of the three offered subjects.

1.10. Assigned reading (at the time of the submission of study programme proposal)

Kurjak A, Chervenak FA. Donald School Textbook of Ultrasound in Obstetrics and Gynecology, 3rd edition. Jaypee Brothers, New Delhi, 2011.
Kupesic S. Color Doppler, 3D and 4D Ultrasound in Gynecology, Infertility and Obstetrics, Jaypee Brothers, New Delhi, 2011.
Ahmed B, Adra A, Nese Kavak Z. Donald School Basic Textbook of Ultrasound in Obstetrics and Gynecology, Jaypee Brothers, New Delhi, 2008.
Kupesic S. Donald School video on Ultrasound in Obstetrics and Gynecology, Jaypee Brothers, New Delhi, 2011.

1.11. Optional / additional reading (at the time of proposing study programme)

Kurjak A, Bajo Arenas J. Donald School Textbook of Transvaginal Sonography, Jaypee Brothers, New Delhi, 2004.
Carrera JM, Kurjak A. Donald School Atlas of Clinical Application of Ultrasound in Obstetrics and Gynecology. Jaypee Brothers, New Delhi, 2006.
Kurjak A. Donald School Atlas of Fetal Anomalies. Jaypee Brothers, New Delhi, 2006.
Antsaklis A, Troyano JM. Donald School Textbook of Interventional Ultrasound. Jaypee Brothers, New Delhi, 2008.
Each student will be subscribed to Donald School Journal of Ultrasound in Obstetrics and Gynecology.

1.12. Number of assigned reading copies with regard to the number of students currently attending the course

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Title	*Number of copies*	*Number of students*
Kurjak A, Chervenak FA. Donald School Textbook of Ultrasound in Obstetrics and Gynecology, 3rdedition. Jaypee Brothers, New Delhi, 2011	2	12
Kupesic S. Color Doppler, 3D and 4D Ultrasound in Gynecology, Infertility and Obstetrics, Jaypee Brothers, New Delhi, 2011	2	12
Kupesic S. Donald School video on Ultrasound in Obstetrics and Gynecology, Jaypee Brothers, New Delhi, 2011.	2	12

1.13. Quality monitoring methods which ensure acquirement of output knowledge, skills and competences

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3.4. Course description M5C2

Basic description		
Course coordinator	**Eberhard Merz**	
Course title	**Doppler and 3D/4D ultrasound in gynecology and infertility**	
Study programme	**Ultrasound in Obstetrics and Gynecology**	
Course status	compulsory	
Year	**1**	
ECTS credits and teaching	ECTS student 's workload coefficient	4,0
	Number of hours (L+E+S)	7+28+3

1. COURSE DESCRIPTION

1.1. Course objectives

The aim of the course is to familiarize students with the development of three-dimensional ultrasound images, and the role of 3D ultrasound and Doppler in diagnostics and treatment of the most common gynecological diseases and the diagnosis and treatment of infertility in women. Students will learn: how to apply 3D ultrasound and various Doppler techniques in the diagnostics of diseases of the uterus, ovaries, endometriosis, different urogynecological problems in postmenopausal women, and in follow up of the treatment of various gynecological diseases. The role of ultrasound in the screening for ovarian cancer, tumorous vasculogenesis and in the measurement of volume etc. The aim is to teach students about the position of 3D ultrasound in the diagnosis of gynecological diseases in women compared to other radiological imaging methods.

1.2. Course enrolment requirements

Enrolment to the university postgraduate study of Ultrasound in obstetrics and gynecology

1.3. Expected course learning outcomes

Upon the completion of this course, student will know how to apply 3D ultrasound and Doppler imaging in the diagnostics and treatment of the most common gynecological diseases and in the analysis and treatment of infertility in women. They will know to apply 3D ultrasound, newer ultrasound imaging methods and different Doppler ultrasound techniques in the diagnosis of diseases of the uterus, ovaries, endometriosis, different urogynecological problems in postmenopausal women, as well as, in monitoring the treatment of various gynecological diseases. They will be familiar with the role of 3D ultrasound in screening for ovarian cancer, tumorous vasculogenesis detection and measurement of the volume of different structures etc. In addition, students will be able to evaluate 3D ultrasound in the diagnosis of gynecological diseases in women compared to other radiological imaging methods.

1.4. Course content

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The basic principles of the three-dimensional ultrasound techniques, the newer three-dimensional and four dimensional ultrasound display techniques, Doppler display techniques including pulse, colour and power Doppler imaging, 3D ultrasound in detecting the uterine disease, including congenital defects in the development of uterus, malignancies, benign lesions such as polyps and myomas, endometrial cancer, benign and malignant diseases of the ovary and fallopian tube, three-dimensional ultrasound to control intrauterine devices, 3D ultrasound in the diagnosis and treatment of infertility, three-dimensional ultrasound compared with other imaging methods and comparison of 3D findings with laparoscopic images. Role of 3D ultrasound in gynecological oncology.

1.5. Teaching methods	x☐ lectures x☐ seminars and workshops x☐ exercises ☐ long distance education ☐ fieldwork	☐ individual assignment ☐ multimedia and network ☐ laboratories ☐ mentorship ☐other
1.6. Comments		

1.7. Student's obligations

Each student must submit their diary at the end of each course when the exam from the above items will be held. Upon completion of each course the candidate must send an e-mail or provide proof of attendance, which will be one of the approval criteria for access to the final exam.

1.8. Evaluation of student's work

Course attendance	0,5	Activity/Participation	0,5	Seminar paper		Experimental work	
Written exam	1,0	Oral exam	1,0	Essay		Research	
Project		Sustained knowledge check		Report		Practice	1,0
Portfolio							

1.9. Assessment and evaluation of student's work during classes and on final exam

Assessment of student's work will be performed according to the activities during teaching, teaching attendance, writing test in the form of essay on the subject and based on the activity during exercises. Final exam will be from one of the three offered subjects.

1.10. Assigned reading (at the time of the submission of study programme proposal)

Kurjak A, Chervenak FA. Donald School Textbook of Ultrasound in Obstetrics and Gynecology, 3rd edition. Jaypee Brothers, New Delhi, 2011.
Kupesic S. Color Doppler, 3D and 4D Ultrasound in Gynecology, Infertility and Obstetrics, Jaypee Brothers, New Delhi, 2011.
Ahmed B, Adra A, Nese Kavak Z. Donald School Basic Textbook of Ultrasound in Obstetrics and Gynecology, Jaypee Brothers, New Delhi, 2008.
Kupesic S. Donald School video on Ultrasound in Obstetrics and Gynecology, Jaypee Brothers, New Delhi, 2011.

1.11. Optional / additional reading (at the time of proposing study programme)

Kurjak A, Bajo Arenas J. Donald School Textbook of Transvaginal Sonography, Jaypee Brothers, New Delhi, 2004.
Carrera JM, Kurjak A. Donald School Atlas of Clinical Application of Ultrasound in Obstetrics and Gynecology. Jaypee Brothers, New Delhi, 2006.
Kurjak A. Donald School Atlas of Fetal Anomalies. Jaypee Brothers, New Delhi, 2006.
Antsaklis A, Troyano JM. Donald School Textbook of Interventional Ultrasound. Jaypee Brothers, New Delhi, 2008.
Each student will be subscribed to Donald School Journal of Ultrasound in Obstetrics and Gynecology.

1.12. Number of assigned reading copies with regard to the number of students currently attending the course

Title	*Number of copies*	*Number of students*
Kurjak A, Chervenak FA. Donald School Textbook of Ultrasound in Obstetrics and Gynecology, 3rdedition. Jaypee Brothers, New Delhi, 2011	2	12
Kupesic S. Color Doppler, 3D and 4D Ultrasound in Gynecology, Infertility and Obstetrics, Jaypee Brothers, New Delhi, 2011	2	12
Kupesic S. Donald School video on Ultrasound in Obstetrics and Gynecology, Jaypee Brothers, New Delhi, 2011.	2	12

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1.13. Quality monitoring methods which ensure acquirement of output knowledge, skills and competences

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Course description Module 6

LIST OF MODULES/ COURSES							
Year study: 1							
Semester: 2							
MODULE 6 USC 6	COURSE	COORDINATOR	L	E	S	ECTS	STATUS[13]
Module 6. Invasive ultrasound diagnostics	Invasive ultrasound diagnostics in obstetrics	Aleks Finderle	10	30	5	4,5	C
	Invasive ultrasound diagnostics in gynaecology and infertility	Herman Haller	10	40	5	5,5	C
	Total		20	70	10	10	

Course description M6C1

Basic description		
Course coordinator	**Aleks Finderle**	
Course title	**Invasive ultrasound diagnostics in obstetrics**	
Study programme	**Ultrasound in Obstetrics and Gynecology**	
Course status	compulsory	
Year	**1**	
ECTS credits and teaching	ECTS student 's workload coefficient	4,5
	Number of hours (L+E+S)	10+30+5

1. COURSE DESCRIPTION

1.1. Course objectives

The aim of the course is that students gain theoretical and practical knowledge of invasive ultrasound diagnostics in obstetrics. Participants will gain knowledge about the markers of congenital anomalies in the fetus and inborn errors of development that should not be overlooked. It is also intended to emphasize the value of non-invasive methods of combined screening in pregnancy with its capabilities, advantages and weaknesses. The role of ultrasound in performing invasive procedures: chorionic villus sampling and early amniocentesis, technique and procedures as well as the risk management procedures.
The aim is to familiarize participants with the diagnostics of Rh isoimmunization and the monitoring of endangered fetus due to the above conditions, and determining the timing of intervention in the case of fetal anemia. Mode of performing the cordocentesis and intrauterine transfusion with the treatment risks. Meaning of invasive diagnostics in assessing the fetal condition, its prognosis and final outcome of pregnancy. Introduce to some methods of fetal therapy, and detect the fetal twin transfusion syndrome, and the possibilities of its treatment and the role of ultrasound in it.

1.2. Course enrolment requirements

[13] **IMPORTANT:** For the compulsory module/ course, letter O is entered, and letter E for the elective one.

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Enrolment to the university postgraduate study of Ultrasound in obstetrics and gynecology

1.3. Expected course learning outcomes

After completing this course participants will know the indications for non-invasive and invasive prenatal diagnosis, and will be familiar with malformations that should not be overlooked with ultrasound examination. They will also be familiarized with the various techniques of performing prenatal invasive procedures under the control of ultrasound and they will know how to interpret the obtained findings. They will know the methods of non-invasive screening of malformations in pregnancy with their sensitivity and specificity, and positive and negative predictive values and usefulness. Participants will be able to theoretically explain how to perform the most common prenatal procedures under the ultrasound and name the usual obstacles for their implementation and possible threats. They will be able to list the most common methods of fetal therapy, and revealing TTTS and its treatment.

1.4. Course content

Estimation of fetal development disturbances including markers of chromosomopathies such as nuchal translucency, nasal bone, choroid plexus cysts, hyperechogenic foci of the fetal heart etc. with indications for non-invasive and invasive prenatal diagnosis. Advice in case of positive findings of chromosomopathy or other life-threatening error in the developing fetus. Techniques of chorionic villus sampling and amniocentesis, and early indications and contraindications for their performance. Relationship between non-invasive and invasive diagnostic tests. Basic methods for treatment of fetuses with special reference to TTTS and treatments as well as some less common invasive methods of fetal therapy in cases of life-threatening conditions. Fetal immune and non-immune hydrops: methods of diagnosis and treatment (cordocentesis, intrauterine transfusion - indications and methods of performance). Indications for embryonal reduction in multiple pregnancies, treatment of extrauterine pregnancy, and fetal ultrasound guided invasive procedures (biopsies of skin, muscle, liver etc.)

1.5. Teaching methods	x☐ lectures x☐ seminars and workshops x☐ exercises ☐ long distance education ☐ fieldwork	☐ individual assignment ☐ multimedia and network ☐ laboratories ☐ mentorship ☐ other
1.6. Comments		

1.7. Student's obligations

Each student must submit their diary at the end of each course when the exam from the above items will be held. Upon completion of each course the candidate must send an e-mail or provide proof of attendance, which will be one of the approval criteria for access to the final exam.

1.8. Evaluation of student's work

Course attendance	0,5	Activity/Participation	0,5	Seminar paper		Experimental work	
Written exam	1,0	Oral exam	1,0	Essay		Research	
Project		Sustained knowledge check		Report		Practice	1,5
Portfolio							

1.9. Assessment and evaluation of student's work during classes and on final exam

Assessment of student's work will be performed according to the activities during teaching, teaching attendance, writing test in the form of essay on the subject and based on the activity during exercises. Final exam will be from one of the three offered subjects.

1.10. Assigned reading (at the time of the submission of study programme proposal)

Kurjak A, Chervenak FA. Donald School Textbook of Ultrasound in Obstetrics and Gynecology, 3rd edition. Jaypee Brothers, New Delhi, 2011.
Kupesic S. Color Doppler, 3D and 4D Ultrasound in Gynecology, Infertility and Obstetrics, Jaypee Brothers, New Delhi, 2011.
Ahmed B, Adra A, Nese Kavak Z. Donald School Basic Textbook of Ultrasound in Obstetrics and Gynecology, Jaypee Brothers, New Delhi, 2008.
Kupesic S. Donald School video on Ultrasound in Obstetrics and Gynecology, Jaypee Brothers, New Delhi, 2011.

1.11. Optional / additional reading (at the time of proposing study programme)

Kurjak A, Bajo Arenas J. Donald School Textbook of Transvaginal Sonography, Jaypee Brothers, New Delhi, 2004.
Carrera JM, Kurjak A. Donald School Atlas of Clinical Application of Ultrasound in Obstetrics and Gynecology. Jaypee Brothers, New Delhi, 2006.
Kurjak A. Donald School Atlas of Fetal Anomalies. Jaypee Brothers, New Delhi, 2006.

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Antsaklis A, Troyano JM. Donald School Textbook of Interventional Ultrasound. Jaypee Brothers, New Delhi, 2008.
Each student will be subscribed to Donald School Journal of Ultrasound in Obstetrics and Gynecology.

1.12. Number of assigned reading copies with regard to the number of students currently attending the course

Title	*Number of copies*	*Number of students*
Kurjak A, Chervenak FA. Donald School Textbook of Ultrasound in Obstetrics and Gynecology, 3rdedition. Jaypee Brothers, New Delhi, 2011	2	12
Kupesic S. Color Doppler, 3D and 4D Ultrasound in Gynecology, Infertility and Obstetrics, Jaypee Brothers, New Delhi, 2011	2	12
Kupesic S. Donald School video on Ultrasound in Obstetrics and Gynecology, Jaypee Brothers, New Delhi, 2011.	2	12

1.13. Quality monitoring methods which ensure acquirement of output knowledge, skills and competences

Conducting and regular analysis of survey among students and evaluation of data on the effectiveness of the study programme and its implementation. Each student has a mentor who monitors his attainments during the study. We act according to the Ordinance about the system and the quality improvement of the University of Rijeka, the Code of Ethics of the University of Rijeka and the Code of Ethics of teachers, associates and scientists of School of Medicine, University of Rijeka, Code of Ethics of students, School of Medicine, University of Rijeka, the Regulation on the students' evaluation at the School of Medicine in Rijeka.

Course description M6C2

Basic description		
Course coordinator	**Herman Haller**	
Course title	**Invasive ultrasound diagnostics in gynaecology and infertility**	
Study programme	**Ultrasound in Obstetrics and Gynecology**	
Course status	compulsory	
Year	**1**	
ECTS credits and teaching	ECTS student 's workload coefficient	5,5
	Number of hours (L+E+S)	10+40+5

1. COURSE DESCRIPTION

1.1. Course objectives

The aim of the course is to familiarize students with the most common invasive ultrasound procedures used in the diagnosis of certain gynecological diseases and in the diagnosis and treatment of infertility in women. The goal is for students to learn when and how to apply different invasive ultrasound techniques in the diagnosis of diseases of the uterus, ovaries, endometriosis and various urogynecologic problems in postmenopausal women. The aim is to teach students about the position of ultrasound in the diagnosis of gynecological diseases in women compared to other radiological imaging methods.

1.2. Course enrolment requirements

Enrolment to the university postgraduate study of Ultrasound in obstetrics and gynecology

1.3. Expected course learning outcomes

Upon the completion of course, the students will be able to apply ultrasound guided invasive diagnostic and therapeutic procedures in gynecological diseases and in the diagnosis and treatment of infertility in women. They will know how to apply invasive diagnostic methods in the diagnosis of diseases of the uterus, ovaries, endometriosis, different urogynecologic problems in postmenopausal women, and in monitoring the treatment of various gynecological diseases. Among others, it is anticipated that participants will know to punctuate transvaginal ovarian follicle and get the ovum, and will be able to punctuate ovarian cyst, punctuate and drain the abscess in the small pelvis, perform the culdocentesis. They will be instructed about the technique of hysterosalpingography with the use of contrast in the diagnosis of pathological conditions of the uterus and fallopian tubes.

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1.4. Course content

Basic principles of invasive ultrasound techniques in the detection of uterine diseases, including congenital defects in the development of uterus, Asherman syndrome, malignant diseases, benign changes such as myomas and endometrial polyps, benign and malignant ovarian and tubar diseases. Invasive ultrasound techniques in the diagnostics and treatment of infertility. The role of invasive ultrasound-guided procedures in gynecological oncology. Indications and modes of performing ultrasound-guided fetal invasive procedures. Comparison of ultrasound-guided invasive procedures with other radiological imaging methods.

1.5. Teaching methods	x☐ lectures x☐ seminars and workshops x☐ exercises ☐ long distance education ☐ fieldwork	☐ individual assignment ☐ multimedia and network ☐ laboratories ☐ mentorship ☐ other
1.6. Comments		

1.7. Student's obligations

Each student must submit their diary at the end of each course when the exam from the above items will be held. Upon completion of each course the candidate must send an e-mail or provide proof of attendance, which will be one of the approval criteria for access to the final exam.

1.8. Evaluation of student's work

Course attendance	0,5	Activity/Participation	0,5	Seminar paper		Experimental work	
Written exam	1,5	Oral exam	1,0	Essay		Research	
Project		Sustained knowledge check		Report		Practice	2,0
Portfolio							

1.9. Assessment and evaluation of student's work during classes and on final exam

Assessment of student's work will be performed according to the activities during teaching, teaching attendance, writing test in the form of essay on the subject and based on the activity during exercises. Final exam will be from one of the three offered subjects.

1.10. Assigned reading (at the time of the submission of study programme proposal)

Kurjak A, Chervenak FA. Donald School Textbook of Ultrasound in Obstetrics and Gynecology, 3rd edition. Jaypee Brothers, New Delhi, 2011.
Kupesic S. Color Doppler, 3D and 4D Ultrasound in Gynecology, Infertility and Obstetrics, Jaypee Brothers, New Delhi, 2011.
Ahmed B, Adra A, Nese Kavak Z. Donald School Basic Textbook of Ultrasound in Obstetrics and Gynecology, Jaypee Brothers, New Delhi, 2008.
Kupesic S. Donald School video on Ultrasound in Obstetrics and Gynecology, Jaypee Brothers, New Delhi, 2011.

1.11. Optional / additional reading (at the time of proposing study programme)

Kurjak A, Bajo Arenas J. Donald School Textbook of Transvaginal Sonography, Jaypee Brothers, New Delhi, 2004.
Carrera JM, Kurjak A. Donald School Atlas of Clinical Application of Ultrasound in Obstetrics and Gynecology. Jaypee Brothers, New Delhi, 2006.
Kurjak A. Donald School Atlas of Fetal Anomalies. Jaypee Brothers, New Delhi, 2006.
Antsaklis A, Troyano JM. Donald School Textbook of Interventional Ultrasound. Jaypee Brothers, New Delhi, 2008.
Each student will be subscribed to Donald School Journal of Ultrasound in Obstetrics and Gynecology.

1.12. Number of assigned reading copies with regard to the number of students currently attending the course

Title	*Number of copies*	*Number of students*
Kurjak A, Chervenak FA. Donald School Textbook of Ultrasound in Obstetrics and Gynecology, 3rdedition. Jaypee Brothers, New Delhi, 2011	2	12
Kupesic S. Color Doppler, 3D and 4D Ultrasound in Gynecology, Infertility and Obstetrics, Jaypee Brothers, New Delhi, 2011	2	12
Kupesic S. Donald School video on Ultrasound in Obstetrics and Gynecology, Jaypee Brothers,	2	12

New Delhi, 2011.		

1.13. Quality monitoring methods which ensure acquirement of output knowledge, skills and competences

Conducting and regular analysis of survey among students and evaluation of data on the effectiveness of the study programme and its implementation. Each student has a mentor who monitors his attainments during the study. We act according to the Ordinance about the system and the quality improvement of the University of Rijeka, the Code of Ethics of the University of Rijeka and the Code of Ethics of teachers, associates and scientists of School of Medicine, University of Rijeka, Code of Ethics of students, School of Medicine, University of Rijeka, the Regulation on the students' evaluation at the School of Medicine in Rijeka.

Course description Module 7

LIST OF MODULES/ COURSES							
Study year: 1							
Semester: 2							
MODULE 7 USE 7	COURSE	COORDINATOR	L	E	S	ECTS	STATUS[14]
Module 7. How to write scientific paper	Scientific way of thinking	Amir Muzur	4	5	1	1	E
	Structure of scientific paper	Amir Muzur	4	16	0	2	E
	Total		8	21	1	3	

Course description M7E1

Basic description		
Course coordinator	**Amir Muzur**	
Course title	**Scientific way of thinking**	
Study programme	**Ultrasound in Obstetrics and Gynecology**	
Course status	elective	
Year	**1**	
ECTS credits and teaching	ECTS student 's workload coefficient	1,0
	Number of hours (L+E+S)	4+5+1

[14] **IMPORTANT:** For the compulsory module/ course, letter O is entered, and letter E for the elective one.

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1. COURSE DESCRIPTION

1.1. Course objectives

The objective of this course is to teach students to think scientifically and to become aware of the process of scientific thinking. What is the difference between the scientific and non-scientific way of thinking in understanding the processes in the world. Evidence based medicine and types of scientific research in medical science.

1.2. Course enrolment requirements

Enrolment to the university postgraduate study of Ultrasound in obstetrics and gynecology

1.3. Expected course learning outcomes

The knowledge acquired during this course will allow the participants to become aware of the scientific way of thinking and the process they go through to develop scientific way of thinking. Students will gain basic information about the types of research in medical disciplines. They will gain knowledge on the concept of evidence-based medicine, and levels of evidence in medical research.

1.4. Course content

Distinguishing between scientific and non-scientific thinking and understanding of the world, the ways of the presentation of the results of medical research, the levels of evidence in scientific work, what is the scientific database and how to establish one, the methods of scientific analysis of the data, meta-analysis. The types of scientific journals and their impact factor. What are approach methods to the primary and secondary databases?

1.5. Teaching methods	x☐ lectures ☐ seminars and workshops x☐ exercises ☐ long distance education ☐ fieldwork	☐ individual assignment ☐ multimedia and network ☐ laboratories ☐ mentorship ☐ other
1.6. Comments		

1.7. Student's obligations

Each student must submit their diary at the end of each course when the exam from the above items will be held. Upon completion of each course the candidate must send an e-mail or provide proof of attendance, which will be one of the approval criteria for access to the final exam.

1.8. Evaluation of student's work

Course attendance	0,2	Activity/Participation	0,3	Seminar paper		Experimental work	
Written exam	0,5	Oral exam		Essay		Research	
Project		Sustained knowledge check		Report		Practice	
Portfolio							

1.9. Assessment and evaluation of student's work during classes and on final exam

Assessment of student's work will be performed according to the activities during teaching, teaching attendance, writing test in the form of essay on the subject and based on the activity during exercises. Final exam will be from one of the three offered subjects.

1.10. Assigned reading (at the time of the submission of study programme proposal)

Rogers SM. Mastering scientific and medical writing: A self-help guide. New York:Springer, 2007.
Victoria E, McMillan. Writing Papers in the Biological Sciences. Boston: Bedford Books, 1997.

1.11. Optional / additional reading (at the time of proposing study programme)

Day RA, Gastel B. How to Write and Publish a Scientific Paper, 4thedition. Oryx Press: Phoenix, 1994.
Silvia PJ. How to write a lot: A practical guide to productive academic writing. Washington DC: American Psychological Association, 2007.
http://academic.bowdoin.edu/courses/f02/bio105/dissemination/ScientificPaperBasic.pdf
http://classweb.gmu.edu/biologyresources/writingguide/ScientificPaper.htm

1.12. Number of assigned reading copies with regard to the number of students currently attending the course

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Title	*Number of copies*	*Number of students*

1.13. Quality monitoring methods which ensure acquirement of output knowledge, skills and competences

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Course description M7E2

Basic description		
Course coordinator	**Amir Muzur**	
Course title	**Structure of scientific paper**	
Study programme	**Ultrasound in Obstetrics and Gynecology**	
Course status	elective	
Year	**1**	
ECTS credits and teaching	ECTS student 's workload coefficient	2,0
	Number of hours (L+E+S)	4+16+0

1. COURSE DESCRIPTION

1.1. Course objectives

The aim of this course is to teach students to think scientifically and to know how to make a review of the scientific article. They will undergo practical training of how to write a research paper and how to ask for references and how to cite. You will be familiar with the methodology of writing science paper. The program provides basic knowledge about writing scientific research and basic formal education to participate in clinical and translational research.

1.2. Course enrolment requirements

Enrolment to the university postgraduate study of Ultrasound in obstetrics and gynecology

1.3. Expected course learning outcomes

The knowledge acquired during this course will allow the participants to become aware of the scientific way of thinking and the process they go through to develop scientific way of thinking. Students will gain basic information about the types of research in clinical medical disciplines. They will gain knowledge on the concept of evidence-based medicine, and levels of evidence in medical research.

1.4. Course content

After completing this course the participants are expected to get the basic knowledge about writing scientific paper, and this knowledge will enable them: to look for references to scientific paper, to make a plan for a structured approach to the writing a scientific paper and to write a scientific paper and to review of the scientific paper.

1.5. Teaching methods	x☐ lectures ☐ seminars and workshops x☐ exercises ☐ long distance education ☐ fieldwork	☐ individual assignment ☐ multimedia and network ☐ laboratories ☐ mentorship ☐ other

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1.6. Comments	

1.7. Student's obligations

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1.8. Evaluation of student's work

Course attendance	0,5	Activity/Participation	0,5	Seminar paper		Experimental work	
Written exam	1,0	Oral exam		Essay		Research	
Project		Sustained knowledge check		Report		Practice	
Portfolio							

1.9. Assessment and evaluation of student's work during classes and on final exam

Assessment of student's work will be performed according to the activities during teaching, teaching attendance, writing test in the form of essay on the subject and based on the activity during exercises. Final exam will be from one of the three offered subjects.

1.10. Assigned reading (at the time of the submission of study programme proposal)

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Victoria E, McMillan. Writing Papers in the Biological Sciences. Boston: Bedford Books, 1997.

1.11. Optional / additional reading (at the time of proposing study programme)

Day RA, Gastel B. How to Write and Publish a Scientific Paper, 4thedition. Oryx Press: Phoenix, 1994.
Silvia PJ. How to write a lot: A practical guide to productive academic writing. Washington DC:American Psychological Association, 2007.
http://academic.bowdoin.edu/courses/f02/bio105/dissemination/ScientificPaperBasic.pdf
http://classweb.gmu.edu/biologyresources/writingguide/ScientificPaper.htm

1.12. Number of assigned reading copies with regard to the number of students currently attending the course

Title	*Number of copies*	*Number of students*

1.13. Quality monitoring methods which ensure acquirement of output knowledge, skills and competences

Conducting and regular analysis of survey among students and evaluation of data on the effectiveness of the study programme and its implementation. Each student has a mentor who monitors his attainments during the study. We act according to the Ordinance about the system and the quality improvement of the University of Rijeka, the Code of Ethics of the University of Rijeka and the Code of Ethics of teachers, associates and scientists of School of Medicine, University of Rijeka, Code of Ethics of students, School of Medicine, University of Rijeka, the Regulation on the students' evaluation at the School of Medicine in Rijeka.