

Faculty of Medicine in Rijeka

**Curriculum
2025/2026**

For course

**Practical Application of Ultrasound in Surgery and
Urology**

Study program: **Medical Studies in English (R)** (elective)
University integrated undergraduate and graduate study
Department: **Department of Urology**
Course coordinator: **prof. dr. sc. Španjol Josip, dr. med.**

Year of study: **5**
ECTS: **1.5**
Incentive ECTS: **0 (0.00%)**
Foreign language: **Possibility of teaching in a foreign language**

Course information:

The goal of this course is to encounter students with basic knowledge and skill in the field of abdominal ultrasonography. Further goal is to introduce and train students how to prepare a patient for an ultrasound examination, how to recognize normal ultrasound anatomy of intra-abdominal organs, how to apply ultrasound as a method of detecting kidney, liver, bladder and testicular tumors, and how to apply ultrasound FAST protocol in the diagnosis of abdominal trauma. And also the use of interventional ultrasound and indications for applying ultrasound as a diagnostic and interventional method.

List of assigned reading:

Fučkar Ž. i suradnici, Sonografija urogenitalnog sustava I. i II. dio, Digital Point, Rijeka, 2001.

List of optional reading:

Rumock C, Wilson S. - Diagnostic Ultrasound, Mosby, London, 2002.

Curriculum:

Seminars list (with titles and explanation):

Introduction to the course

Understanding to the aims, contents and requirements of the course.

Historical review of ultrasound

To know the brief historical development and application of ultrasound in medicine.

Thoracic ultrasound

To know the basics of thoracic ultrasound and the FASTER protocol.

Ultrasound-guided percutaneous tracheostomy

To know the basics of tracheostomy placement using ultrasound.

Retroperitoneal ultrasound

To know the basics of ultrasound imaging of the retroperitoneum.

Evaluation of bladder pathology by transabdominal ultrasound

To know the basics of bladder pathology in transabdominal ultrasound.

Evaluation of prostate and seminal vesicle pathology by ultrasound

To know the ultrasound anatomy of the prostate and seminal vesicles and the most common pathological presentations.

Evaluation of scrotal and penile pathology by ultrasound

To know the basic ultrasound pathology of the testicles and genitals.

Ultrasound in urological emergency

To know how to use ultrasound in the diagnosis and treatment of urgent urological conditions.

The place of interventional ultrasound in urology

To know what are the indications for certain methods of interventional ultrasound and how to use them.

To know how to prepare patients for certain methods of interventional ultrasound.

To know the “true cut” biopsy algorithm under ultrasound control.

To know the algorithm for introducing a drain under ultrasound control.

Liver and gallbladder / biliary ultrasound

To know how to place the patient in the appropriate position for examination.

To know how to show and recognize the normal ultrasound anatomy of the liver and the gallbladder.

Sonography of the pancreas and spleen

To know how to place the patient in the appropriate position for examination.

To know how to show and recognize the normal ultrasound anatomy of the pancreas and the spleen.

Renal transplant ultrasound

To know the ultrasound diagnostics of a transplanted kidney.

The role of ultrasound in vascular pathology by ultrasound I

To know the basic ultrasound imaging of the large abdominal blood vessels.

The role of ultrasound in vascular pathology by ultrasound II

To know the most common pathology of the large abdominal blood vessels.

Focus Assessment sonography

To know how to place the patient in the appropriate position for examination.

To know typical anatomical sites for assessing the presence of free fluid in the abdomen, phrenicocostal sinuses, and pericardial cavity.

To know how to recognize free fluid in the abdomen and phrenicocostal sinuses.

Interventional abdominal ultrasound

To know the basics of the interventional ultrasound.

Kidney ultrasound

To know how to place the patient in the appropriate position for examination.

To know how to show and recognize the normal ultrasound anatomy of the kidney.

Ultrasound imaging of the adrenal glands

To know the basics of the adrenal ultrasound.

Musculoskeletal ultrasound

To know how to use ultrasound in the treatment and diagnosis of pathological conditions of the locomotor system.

Point-of-care (PoCUS) ultrasound in primary care

To know how to use ultrasound in primary care.

Exam

Written test.

Student obligations:

Regular attendance of classes.

Be prepared for seminars.

Taking a written exam.

Exam (exam taking, description of the written/oral/practical part of the exam, point distribution, grading criteria):

Other notes (related to the course) important for students:

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COURSE HOURS 2025/2026

Practical Application of Ultrasound in Surgery and Urology

Seminars (Place and time or group)
19.01.2026
Introduction to the course: • Department of Urology (17:00 - 20:45) [402] ◦ PAUSU Historical review of ultrasound: • Department of Urology (17:00 - 20:45) [402] ◦ PAUSU Thoracic ultrasound: • Department of Urology (17:00 - 20:45) [402] ◦ PAUSU Ultrasound-guided percutaneous tracheostomy: • Department of Urology (17:00 - 20:45) [402] ◦ PAUSU Retroperitoneal ultrasound: • Department of Urology (17:00 - 20:45) [402] ◦ PAUSU
nasl. izv. prof. dr. sc. Gršković Antun, dr. med. [402]
20.01.2026
Evaluation of bladder pathology by transabdominal ultrasound: • Department of Urology (16:00 - 19:45) [173] ◦ PAUSU Evaluation of prostate and seminal vesicle pathology by ultrasound: • Department of Urology (16:00 - 19:45) [173] ◦ PAUSU Evaluation of scrotal and penile pathology by ultrasound: • Department of Urology (16:00 - 19:45) [173] ◦ PAUSU Ultrasound in urological emergency: • Department of Urology (16:00 - 19:45) [173] ◦ PAUSU The place of interventional ultrasound in urology: • Department of Urology (16:00 - 19:45) [173] ◦ PAUSU
prof. dr. sc. Španjol Josip, dr. med. [173]
21.01.2026
Liver and gallbladder / biliary ultrasound: • Department of Urology (15:00 - 18:45) [173] ◦ PAUSU Sonography of the pancreas and spleen: • Department of Urology (15:00 - 18:45) [173] ◦ PAUSU Renal transplant ultrasound: • Department of Urology (15:00 - 18:45) [173] ◦ PAUSU

prof. dr. sc. Španjol Josip, dr. med. ^[173]
22.01.2026
The role of ultrasound in vascular pathology by ultrasound I: • Department of Urology (15:00 - 18:45) ^[400] ◦ PAUSU The role of ultrasound in vascular pathology by ultrasound II: • Department of Urology (15:00 - 18:45) ^[400] ◦ PAUSU Focus Assessment sonography: • Department of Urology (15:00 - 18:45) ^[400] ◦ PAUSU Interventional abdominal ultrasound: • Department of Urology (15:00 - 18:45) ^[400] ◦ PAUSU
prof. dr. sc. Markić Dean, dr. med. ^[400]
23.01.2026
Kidney ultrasound: • Department of Urology (15:00 - 18:45) ^[173] ◦ PAUSU Ultrasound imaging of the adrenal glands: • Department of Urology (15:00 - 18:45) ^[173] ◦ PAUSU Musculoskeletal ultrasound: • Department of Urology (15:00 - 18:45) ^[173] ◦ PAUSU Point-of-care (PoCUS) ultrasound in primary care: • Department of Urology (15:00 - 18:45) ^[173] ◦ PAUSU Exam: • Department of Urology (15:00 - 18:45) ^[173] ◦ PAUSU
prof. dr. sc. Španjol Josip, dr. med. ^[173]

List of lectures, seminars and practicals:

SEMINARS (TOPIC)	Number of hours	Location
Introduction to the course	1	Department of Urology
Historical review of ultrasound	1	Department of Urology
Thoracic ultrasound	1	Department of Urology
Ultrasound-guided percutaneous tracheostomy	1	Department of Urology
Retroperitoneal ultrasound	1	Department of Urology
Evaluation of bladder pathology by transabdominal ultrasound	1	Department of Urology
Evaluation of prostate and seminal vesicle pathology by ultrasound	1	Department of Urology
Evaluation of scrotal and penile pathology by ultrasound	1	Department of Urology
Ultrasound in urological emergency	1	Department of Urology
The place of interventional ultrasound in urology	1	Department of Urology

Liver and gallbladder / biliary ultrasound	2	Department of Urology
Sonography of the pancreas and spleen	1	Department of Urology
Renal transplant ultrasound	2	Department of Urology
The role of ultrasound in vascular pathology by ultrasound I	1	Department of Urology
The role of ultrasound in vascular pathology by ultrasound II	1	Department of Urology
Focus Assessment sonography	1	Department of Urology
Interventional abdominal ultrasound	2	Department of Urology
Kidney ultrasound	1	Department of Urology
Ultrasound imaging of the adrenal glands	1	Department of Urology
Musculoskeletal ultrasound	1	Department of Urology
Point-of-care (PoCUS) ultrasound in primary care	1	Department of Urology
Exam	1	Department of Urology

EXAM DATES (final exam):
