Faculty of Medicine in Rijeka

Curriculum
2026/2027

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 procotol in the diagnosis of abdominal trauma. And also the use of interventional ultrasound and indiciations 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 patholoy 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 inteventional 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 the 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 the place the patient in the appropriate position form 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 form 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 2026/2027

Practical Application of Ultrasound in Surgery and Urology

Seminars
(Place and time or group)

23.11.2026

Introduction to the course:
- P401-Department of Maxillofacial Surgery (lecture room, 4th floor) (16:00 - 19:45) [1881] [405] [1069] [1619]
  - PAUSU

Historical review of ultrasound:
- P401-Department of Maxillofacial Surgery (lecture room, 4th floor) (16:00 - 19:45) [1881] [405] [1069] [1619]
  - PAUSU

Thoracic ultrasound:
- P401-Department of Maxillofacial Surgery (lecture room, 4th floor) (16:00 - 19:45) [1881] [405] [1069] [1619]
  - PAUSU

Ultrasound-guided percutaneous tracheostomy:
- P401-Department of Maxillofacial Surgery (lecture room, 4th floor) (16:00 - 19:45) [1881] [405] [1069] [1619]
  - PAUSU

Retroperitoneal ultrasound:
- P401-Department of Maxillofacial Surgery (lecture room, 4th floor) (16:00 - 19:45) [1881] [405] [1069] [1619]
  - PAUSU

naslovni doc. dr. sc. Ahel Juraj, dr. med. [405] · naslovna asistentica Bukša Iva, dr. med. [1069] · asistent Jakšić Ante, dr. med., FEBU [1881] · naslovni doc.dr.sc. Sotošek Stanislav, dr.med. [1619]

24.11.2026

Evaluation of bladder pathology by transabdominal ultrasound:
- P401-Department of Maxillofacial Surgery (lecture room, 4th floor) (16:00 - 19:45) [1069] [173] [405] [1619] [1881]
  - PAUSU

Evaluation of prostate and seminal vesicle pathology by ultrasound:
- P401-Department of Maxillofacial Surgery (lecture room, 4th floor) (16:00 - 19:45) [1069] [173] [405] [1619] [1881]
  - PAUSU

Evaluation of scrotal and penile pathology by ultrasound:
- P401-Department of Maxillofacial Surgery (lecture room, 4th floor) (16:00 - 19:45) [1069] [173] [405] [1619] [1881]
  - PAUSU

Ultrasound in urological emergency:
- P401-Department of Maxillofacial Surgery (lecture room, 4th floor) (16:00 - 19:45) [1069] [173] [405] [1619] [1881]
  - PAUSU

The place of interventional ultrasound in urology:
- P401-Department of Maxillofacial Surgery (lecture room, 4th floor) (16:00 - 19:45) [1069] [173] [405] [1619] [1881]
  - PAUSU

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25.11.2026

Liver and gallbladder / biliary ultrasound:
- P401-Department of Maxillofacial Surgery (lecture room, 4th floor) (16:00 - 19:45) [1619] [173] [405] [1069] [1881]
  - PAUSU

Sonography of the pancreas and spleen:
- P401-Department of Maxillofacial Surgery (lecture room, 4th floor) (16:00 - 19:45) [1619] [173] [405] [1069] [1881]
  - PAUSU

Renal transplant ultrasound:
- P401-Department of Maxillofacial Surgery (lecture room, 4th floor) (16:00 - 19:45) [1619] [173] [405] [1069] [1881]
  - PAUSU

naslovni doc. dr. sc. Ahel Juraj, dr. med. [405] · naslovna asistentica Bukša Iva, dr. med. [1069] · asistent Jakšić Ante, dr. med., FEBU [1881] · naslovni doc.dr.sc. Sotošek Stanislav, dr.med. [1619] · prof. dr. sc. Španjol Josip, dr. med. [173]

26.11.2026

The role of ultrasound in vascular pathology by ultrasound I:
- P401-Department of Maxillofacial Surgery (lecture room, 4th floor) (16:00 - 19:45) [173] [405] [1069] [1619] [1881]
  - PAUSU

The role of ultrasound in vascular pathology by ultrasound II:
- P401-Department of Maxillofacial Surgery (lecture room, 4th floor) (16:00 - 19:45) [173] [405] [1069] [1619] [1881]
  - PAUSU

Focus Assessment sonography:
- P401-Department of Maxillofacial Surgery (lecture room, 4th floor) (16:00 - 19:45) [173] [405] [1069] [1619] [1881]
  - PAUSU

Interventional abdominal ultrasound:
- P401-Department of Maxillofacial Surgery (lecture room, 4th floor) (16:00 - 19:45) [173] [405] [1069] [1619] [1881]
  - PAUSU

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27.11.2026

Kidney ultrasound:
- P401-Department of Maxillofacial Surgery (lecture room, 4th floor) (16:00 - 19:45) [405] [173] [1069] [1619] [1881]
  - PAUSU

Ultrasound imaging of the adrenal glands:
- P401-Department of Maxillofacial Surgery (lecture room, 4th floor) (16:00 - 19:45) [405] [173] [1069] [1619] [1881]
  - PAUSU

Musculoskeletal ultrasound:
- P401-Department of Maxillofacial Surgery (lecture room, 4th floor) (16:00 - 19:45) [405] [173] [1069] [1619] [1881]
  - PAUSU

Point-of-care (PoCUS) ultrasound in primary care:
- P401-Department of Maxillofacial Surgery (lecture room, 4th floor) (16:00 - 19:45) [405] [173] [1069] [1619] [1881]
  - PAUSU

Exam:
- P401-Department of Maxillofacial Surgery (lecture room, 4th floor) (16:00 - 19:45) [405] [173] [1069] [1619] [1881]
  - PAUSU

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List of lectures, seminars and practicals:

SEMINARS (TOPIC)	Number of hours	Location
Introduction to the course	1	P401-Department of Maxillofacial Surgery (lecture room, 4th floor)

Historical review of ultrasound	1	P401-Department of Maxillofacial Surgery (lecture room, 4th floor)
Thoracic ultrasound	1	P401-Department of Maxillofacial Surgery (lecture room, 4th floor)
Ultrasound-guided percutaneous tracheostomy	1	P401-Department of Maxillofacial Surgery (lecture room, 4th floor)
Retroperitoneal ultrasound	1	P401-Department of Maxillofacial Surgery (lecture room, 4th floor)
Evaluation of bladder pathology by transabdominal ultrasound	1	P401-Department of Maxillofacial Surgery (lecture room, 4th floor)
Evaluation of prostate and seminal vesicle pathology by ultrasound	1	P401-Department of Maxillofacial Surgery (lecture room, 4th floor)
Evaluation of scrotal and penile pathology by ultrasound	1	P401-Department of Maxillofacial Surgery (lecture room, 4th floor)
Ultrasound in urological emergency	1	P401-Department of Maxillofacial Surgery (lecture room, 4th floor)
The place of interventional ultrasound in urology	1	P401-Department of Maxillofacial Surgery (lecture room, 4th floor)
Liver and gallbladder / biliary ultrasound	2	P401-Department of Maxillofacial Surgery (lecture room, 4th floor)
Sonography of the pancreas and spleen	1	P401-Department of Maxillofacial Surgery (lecture room, 4th floor)
Renal transplant ultrasound	2	P401-Department of Maxillofacial Surgery (lecture room, 4th floor)
The role of ultrasound in vascular pathology by ultrasound I	1	P401-Department of Maxillofacial Surgery (lecture room, 4th floor)
The role of ultrasound in vascular pathology by ultrasound II	1	P401-Department of Maxillofacial Surgery (lecture room, 4th floor)
Focus Assessment sonography	1	P401-Department of Maxillofacial Surgery (lecture room, 4th floor)
Interventional abdominal ultrasound	2	P401-Department of Maxillofacial Surgery (lecture room, 4th floor)
Kidney ultrasound	1	P401-Department of Maxillofacial Surgery (lecture room, 4th floor)
Ultrasound imaging of the adrenal glands	1	P401-Department of Maxillofacial Surgery (lecture room, 4th floor)
Musculoskeletal ultrasound	1	P401-Department of Maxillofacial Surgery (lecture room, 4th floor)
Point-of-care (PoCUS) ultrasound in primary care	1	P401-Department of Maxillofacial Surgery (lecture room, 4th floor)
Exam	1	P401-Department of Maxillofacial Surgery (lecture room, 4th floor)

EXAM DATES (final exam):