

# Quantitative and qualitative situation analysis of the undergraduate ultrasound education at medical faculties in the German-speaking area

---

## General information

Skillslab/ Medical Faculty:
Person responsible for ultrasound skills education:
E-mail:
Phone:

### 1. How is the study program organized?

- Traditional German medical curriculum       Reformed study program
- Other (Please name!) \_\_\_\_\_

### 2. How is the study programme structured?

- Semester                       Trimester                       Study year

### 3. Are ultrasound courses offered at your medical faculty /your skillslab?

- Yes                       No                       Not applicable

### 4. Do you think that ultrasound skills education for medical students is useful?

- Yes                       No                       Not applicable

### 5. Why do you think that ultrasound skills education for medical students is useful/not useful?


**6. Who manages/organizes the ultrasound skills education?**

Person responsible for ultrasound skills education:
E-mail:
Phone:

**7. How is the ultrasound skills education financed? (Multiple responses possible!)**

- Department of the university hospital       Medical Faculty       Dean's office
- Third-party funds       Other (Please name!) \_\_\_\_\_

**Organization**

**8. How is the ultrasound skills education integrated into the curriculum?**

- Single unit       Longitudinal
- Other (Please name!) \_\_\_\_\_

**9. Which medical disciplines<sup>1</sup> are involved in the ultrasound skills education?**

*(Multiple responses possible!)*

- Family medicine       Anaesthesiology       Surgery
- Gynaecology       Ear, Nose and Throat (ENT)       Internal medicine
- Neurosurgery       Neurology       Ophthalmology
- Paediatrics       Radiology       Urology
- Not applicable       Other (Please name!) \_\_\_\_\_

**10. Does a learning objective catalogue for the ultrasound skills education exist?**

- Yes       No       Not applicable

**11. If yes, is it handed out to the students?**

- Yes       No       Not applicable

**12. Which standards regarding ultrasound are represented?**

- German Society for Ultrasound in Medicine (DEGUM)       European Federation of Societies for Ultrasound in Medicine and Biology (EFUSMB)       No standard
- Other (Please name!) \_\_\_\_\_

<sup>1</sup> Adapted from sections of the DEGUM ([www.degum.de](http://www.degum.de)).

**13. How can students prepare for the ultrasound courses? (Multiple responses possible!)**

- Course book
  E-Learning
  Lecture  
 Not applicable
  Other (Please name!) \_\_\_\_\_

**14. Is there a website for the ultrasound skills education?**

- Yes
  No
  Not applicable  
 If yes, please name! \_\_\_\_\_

**15. How often and to what extent are compulsory ultrasound courses offered? (Multiple responses possible!)**

Description of the course (If not listed, please use empty cells below!)	Is offered during semester(s):	Number of credit hours <sup>2</sup>	Number of students per group	Number of instructors per group
<input type="checkbox"/> Lecture				
<input type="checkbox"/> Seminar				
<input type="checkbox"/> Interdisciplinary course				
<input type="checkbox"/> Laboratory course				
<input type="checkbox"/> Bedside teaching				
<input type="checkbox"/> Skillslab course				
<input type="checkbox"/> Compulsory elective course				
<input type="checkbox"/>				
<input type="checkbox"/>				

---

<sup>2</sup> Alternatively, you can display course duration in periods of 45 min, please state!

**16. How often and to what extent are elective ultrasound courses offered?**

*(Multiple responses possible!)*

Description of the course <i>(If not listed, please use empty cells below!)</i>	Is offered during semester(s):	Number of credit hours <sup>3</sup>	Number of students per group	Number of instructors per group
<input type="checkbox"/> Lecture				
<input type="checkbox"/> Seminar				
<input type="checkbox"/> Skillslab course				
<input type="checkbox"/>				
<input type="checkbox"/>				
<input type="checkbox"/>				

**17. What serves as object of ultrasound examination? *(Multiple responses possible!)***

- Patient                                       Simulated patient                                       Participant/student  
 Simulator                                       Instructor  
 Other (Please name!) \_\_\_\_\_

**18. Which organs-/ organ systems<sup>4</sup> are examined? *(Multiple responses possible!)***

- Thyroid gland                                       Neck vessels/-lymph nodes                                       Heart  
 Abdominal vessels/-lymph nodes                                       Liver                                       Gall bladder/-tract  
 Pancreas                                       Spleen                                       Gastrointestinal tract  
 Kidney                                       Urinary bladder                                       Female genital organs  
 Male genital organs                                       Focused Assessment with Sonography for Trauma (FAST)                                       Muscles and tendons  
 Other (Please name!) \_\_\_\_\_

\_\_\_\_\_

<sup>3</sup> Alternatively, you can display course duration in periods of 45 min, please state!

<sup>4</sup> Hofer, Matthias: Sono Grundkurs, pg. 4-5.

**19. Which theoretical knowledge are the ultrasound courses supposed to impart?**

*(Multiple responses possible!)*

- |   |  |  |
|---|--|--|
| <input type="checkbox"/> Basic physics                | <input type="checkbox"/> Ultrasound probes     | <input type="checkbox"/> Indications and limitations |
| <input type="checkbox"/> Advantages and disadvantages | <input type="checkbox"/> Anatomical structures | <input type="checkbox"/> Not applicable              |
| <input type="checkbox"/> Other (Please name!) _____   |  |  |

**20. Which practical skills are the ultrasound courses supposed to impart?**

*(Multiple responses possible!)*

- |  |   |
|--|---|
| <input type="checkbox"/> Choosing ultrasound probe   | Knobology <sup>5</sup> :                            |
| <input type="checkbox"/> Applying contact pressure and ultrasound gel                              | <input type="checkbox"/> Selection of patient       |
| <input type="checkbox"/> Orientation in sagittal and transversal plane                             | <input type="checkbox"/> Menu change                |
| <input type="checkbox"/> Giving patient instructions (e.g. breathing maneuver, change of position) | <input type="checkbox"/> Change of ultrasound probe |
| <input type="checkbox"/> Doppler function  | <input type="checkbox"/> Freeze                     |
| <input type="checkbox"/> Describing findings (e.g. organ structure, echogenicity)                  | <input type="checkbox"/> Gain – overall             |
| <input type="checkbox"/> Not applicable  | <input type="checkbox"/> Depth                      |
|  | <input type="checkbox"/> Time gain compensation     |
|  | <input type="checkbox"/> Trackball                  |
|  | <input type="checkbox"/> Comment                    |
|  | <input type="checkbox"/> Body marker                |
|  | <input type="checkbox"/> Measurement                |
| <input type="checkbox"/> Other (Please name!) _____  |   |
| _____  |   |
| _____  |   |

---

<sup>5</sup> Hofer, Matthias: Sono Grundkurs, pg.10.

## Resources

### 21. Who manages compulsory ultrasound courses? (Multiple responses possible!)

Description of the course (If not listed, please use empty cells below!)	Clinical director	Medical Specialist	Resident	Peer-student-tutor
<input type="checkbox"/> Lecture	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Seminar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Interdisciplinary course	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Laboratory course	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Bedside teaching	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Skillslab course	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Compulsory elective course	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### 22. Who manages elective ultrasound courses? (Multiple responses possible!)

Description of the course (If not listed, please use empty cells below!)	Clinical director	Medical Specialist	Resident	Peer-student-tutor
<input type="checkbox"/> Lecture	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Seminar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Skillslab course	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**23. Which qualification does the teaching staff have? (Multiple responses possible!)**

- DEGUM – Certificate                       Master of Medical Education (MME)                       Own didactic seminars
- Medical Specialist (Please specify discipline! \_\_\_\_\_)
- Resident (Please specify discipline!) \_\_\_\_\_
- Not applicable                       Other (Please name!) \_\_\_\_\_

**24. How many ultrasound machines are available for the education? \_\_\_\_\_**

**25. Do you find education through peer-student-tutors (peer-teaching) useful?**

- Yes                       No                       Not applicable

**26. Why do you find education through peer-student-tutors (peer-teaching) useful/not useful?**


## Assessment methods

### 27. Which assessment methods are being used? (Multiple responses possible!)

No agreement

Written examination

Number of questions: \_\_\_\_\_

Multiple-Choice-Questions:  Yes  No

Open-ended questions:  Yes  No

Institute for medical and pharmaceutic  
examination questions (IMPP)-  
Questions  Yes  No

Oral examination

Number of questions: \_\_\_\_\_

Number of stations: \_\_\_\_\_

Duration of examination: \_\_\_\_\_

Checklists for examination questions:  Yes  No

IMPP-Questions:  Yes  No

Practical exam

Number of stations: \_\_\_\_\_

Duration of examination: \_\_\_\_\_

Number of examiners: \_\_\_\_\_

Checklists for examination questions:  Yes  No

Objective structured clinical examination (OSCE)

Number of stations: \_\_\_\_\_

Duration of examination: \_\_\_\_\_

Number of examiners: \_\_\_\_\_

Checklists for examination questions:  Yes  No

Other (Please name!) \_\_\_\_\_

Number of stations: \_\_\_\_\_

Duration of examination: \_\_\_\_\_

Number of examiners: \_\_\_\_\_

Checklists for examination questions:  Yes  No



## Evaluation

### 28. How are the ultrasound courses evaluated?

- Via online questionnaire       Via paper-based questionnaire       Via SMS
- No evaluation       Other (Please name!) \_\_\_\_\_

### 29. Who conducts the evaluations?

- University Medical Centre       Medical faculty       Dean's office
- Students' representatives       Skillslab
- Other \_\_\_\_\_

### 30. Who analyses the evaluations?

- University hospital       Medical faculty       Dean's office
- Students' representatives       Skillslab
- Other \_\_\_\_\_

### 31. How are the evaluations published?

- Online       Bulletin       No evaluation
- Other \_\_\_\_\_

### 32. What possibilities do you see to improve the ultrasound skills education at your medical faculty/your skillslab?


Thank you for your time!