

# Practical Year Logbook

## Anesthesia

### (and Surgical Intensive Care)

Surname, name

Term number

Start of term

End of term

## **Anesthesia (and surgical intensive care) at the LMU Clinic**

### **Klinik für Anaesthesiologie**

Anesthesiology

Director: Prof. Dr. med. Bernhard Zwißler

Campus Großhadern  
Marchioninistraße 15  
81377 München

Campus Innenstadt  
Ziemssenstraße 5  
80336 München

## **Teaching hospitals for Anesthesia (and surgical intensive care) of the LMU**

- Artemed Klinikum München Süd
- Helios Amper-Klinikum Dachau
- Helios Klinikum München West
- InnKlinikum Altötting und Burghausen
- Klinikum Augsburg
- Klinikum Dritter Orden München-Nymphenburg
- Klinikum Fürstenfeldbruck
- Klinikum Garmisch-Partenkirchen
- Klinikum Ingolstadt
- Klinikum Kaufbeuren (Kliniken Ostallgäu-Kaufbeuren)
- Klinikum Memmingen
- Klinikum Starnberg
- Klinikum Traunstein (Kliniken Südostbayern)
- Krankenhaus Agatharied, Hausham
- Kreisklinik Bad Reichenhall (Kliniken Südostbayern)
- Kreisklinik Wolfratshausen
- München Klinik Harlaching
- RoMed Klinikum Rosenheim

# Practical Year Logbook for Students in the Term Anesthesia (and Surgical Intensive Care)

Surname, Name \_\_\_\_\_

Date of Birth \_\_\_\_\_

Matriculation Number \_\_\_\_\_

Home University  University of Munich (LMU)

\_\_\_\_\_

Address \_\_\_\_\_

\_\_\_\_\_

Phone Number \_\_\_\_\_

Email \_\_\_\_\_

Current Term Start \_\_\_\_\_ End \_\_\_\_\_

Term Number  1  2  3

Hospital Name \_\_\_\_\_

Completed Terms  Internal Medicine  Surgery

I am spending half of my term abroad.  Yes  No  
I am spending my complete term abroad.  Yes  No

Country \_\_\_\_\_

## Abbreviations

PJ... Praktisches Jahr (Practical Year, final year of undergraduate medical studies in Germany)  
LMU... Ludwig-Maximilians-Universität München (University of Munich)

# Dear Students in the Practical Year,

We are happy to present to you this logbook for anesthesia (and surgical intensive care). It describes all the competences and practical skills you should acquire during this term. The purpose is to ensure an ideal preparation for your upcoming responsibilities as a medical professional and to close any gaps in your theoretical and practical knowledge. Ideally, this should prepare you for the Third Part of the Medical Licensing Examination at the end of your PJ.

You should use this logbook to document your learning progress and get regular feedback from your responsible supervisor. You must take the initiative and request assistance with learning from the on-call doctors if you need additional support.

A mentor will be there for any questions and problems you may encounter during this term and will also be responsible for supervising your learning progress.

Please make sure to complete this logbook thoroughly and to have the competences you acquire verified, as this logbook will be collected, checked, and evaluated by us. The certificate for the term you completed, which you need for the registration for the Medical Licensing Examination, will only be issued in exchange for this logbook.

We are always grateful for constructive feedback. To improve the logbooks and education, you will receive a link to an evaluation upon term completion. We appreciate you taking the time to thoroughly fill it out. Thank you in advance for your help.

We wish you an enjoyable and successful term!

**The Representatives of PJ for Anesthesia (and Surgical Intensive Care)**

and

**the team of the Central PJ Coordination**

# Table of Contents

<b>General Information about the Practical Year .....</b>	<b>7</b>
Maintaining the Logbook .....	7
Continuing Education.....	7
Voluntary Mock Exam During the PJ.....	8
Occupational Health Office .....	8
Vaccinations .....	8
Professional Liability Insurance.....	9
Stay Abroad .....	9
Logbook as a Basis for a Reference .....	9
<b>Learning Objectives and Competences .....</b>	<b>10</b>
General Objectives.....	10
Personal Objectives.....	11
Specific Objectives .....	12
Rotation in an ICU.....	12
Practical Competences .....	12
Specific Medical Skills .....	18
Mentor Meetings.....	19
Mock Final Exam (optional).....	19
PJ Seminar Topics .....	20
<b>Additional Materials .....</b>	<b>22</b>
Optional Additional Achievements .....	22



# General Information about the Practical Year

## Contacts and Where to Find Information

Important information about the organization and the structure of the PJ can be found on the website of the Dean's Office of the Faculty of Medicine.

[www.mecum.med.uni-muenchen.de](http://www.mecum.med.uni-muenchen.de)

Information concerning the registration for and taking the Third Part of the Medical Licensing Examination are available at the Examination Office

**Prüfungsamt zur Durchführung der Prüfungen nach der Approbationsordnung für Ärzte im Auftrag der Regierung von Oberbayern**

**(Examination Office for the Execution of the Examination in Accordance with Licensing Regulations for Physicians commissioned by the Government of Upper Bavaria)**

Postal address: Geschwister-Scholl-Platz 1, 80539 München, GERMANY

Office: Amalienstraße 52, 80799 München

[www.lmu.de/de/studium/wichtige-kontakte/pruefungsaeemter/pruefungsamt-medizin/](http://www.lmu.de/de/studium/wichtige-kontakte/pruefungsaeemter/pruefungsamt-medizin/)  
[Humanmedizin.pa@verwaltung.uni-muenchen.de](mailto:Humanmedizin.pa@verwaltung.uni-muenchen.de)

For questions about organization, please contact the PJ Office of the Dean of Faculty of Medicine.

**PJ-Büro des Dekanats der Medizinischen Fakultät der LMU**

**(PJ Office of the Dean of the Faculty of Medicine of the LMU)**

Bavariaring 19, 80336 München, GERMANY

[pj-buero@med.uni-muenchen.de](mailto:pj-buero@med.uni-muenchen.de)

For questions regarding the logbooks or education, contact the education director of your respective hospital or the Central PJ Coordination.

**Zentrale PJ-Koordination**

**(Central PJ Coordination)**

Raum D0.48 im ZeUS, Pettenkoferstraße 8a, 80336 München, GERMANY

[PJ\\_Koordination@med.uni-muenchen.de](mailto:PJ_Koordination@med.uni-muenchen.de)

## Maintaining the Logbook

You are obligated to maintain this logbook conscientiously. Your mentor will review and verify your learning objectives. In case you do not achieve the minimum number of points required, the term will have to be repeated.

To receive the certification of completion of the PJ, you must submit the logbook to the Central PJ Coordination.

## Continuing Education

Please inform yourself at your clinic about the educational offers. According to the principle *learning through teaching*, you will have the possibility to make your own contributions, e.g. by presenting your own patients or preparing a seminar. You will find a list of possible topics in the section *Educational Objectives and Competences*. Register your contributions in the section *Additional Contributions*.

## Voluntary Mock Exam During the PJ

If possible, every clinic should offer voluntary assessments, including a mock exam for practical year students. In the mock exam, similar to the Third Part of the Medical Licensing Examination, your mentor will assign you a patient for whom you will have a defined time period to take a medical history, perform a physical examination, and write an epicrisis. Your mentor will subsequently review your report and simulate an oral-practical exam. There is no danger of failing the term due to an insufficient performance in the mock exam. Ask your clinic if such an exam is offered. The Central PJ Coordination provides different formats for exam preparation. More information about this can be found on the homepage.

## Occupational Health Office

According to section 4 and annex part 2 paragraph 1 of the Ordinance on Preventive Occupational Health Care (Verordnung zur arbeitsmedizinischen Vorsorge, ArbMedVV), the LMU requires an occupational health examination performed by the LMU's Occupational Medical Office prior to the start of the practical training components. The scope of the examination is based on the type and extent of your potential risk.

You can make an appointment with

**Betriebsärztlicher Dienst der LMU  
(Occupational Health Office of the LMU)**  
Goethestraße 31, 80336 München, GERMANY  
Tel: +49 89 2180-73904 oder -73906  
Betriebsarzt@lmu.de

If you do not want to use the offered service of the Occupational Health Office of the LMU, you can complete the examination with and receive valid certification from a physician authorized by the ArbMedVV

However, the LMU will not cover the expense. In this case, the student is responsible for any costs. Priorly issued valid certificates (in accordance with section 6 paragraph 3 no. 3 ArbMedVV) are generally accepted.

## Vaccinations

According to the *EU Directive on the protection of workers from risks related to exposure to biological agents at work*, students at the LMU have the opportunity of receiving occupation-related vaccinations free of charge if their vaccination status is unclear or incomplete. To do this, please make an appointment with the LMU Occupational Medicine Office.

Please note that according to section 2 paragraph 9 of the *Law of the Prevention of Infection (Infektionsschutzgesetz, IfSG)* you are obligated to have a sufficient measles vaccination status or immunity against measles. For the protection of patients, as well as yourself, you should have immunization against COVID-19, mumps, rubella, diphtheria, varicella, pertussis, hepatitis B, influenza, and in areas of risk, additionally against hepatitis A. Please inform yourself in your clinic which vaccines are required.



### Professional Liability Insurance

Damage caused to third parties by students during their PJ is usually covered by the professional liability insurance of the university hospital or the teaching hospital. Students of the LMU who spend their term abroad are not covered by the university or the teaching hospital. We therefore explicitly recommend that you insure yourself additionally against the risk of personnel injury and property damage caused by you.

### Stay Abroad

Even if you are spending the term abroad, you are required to maintain the LMU logbook. Please document a term abroad in the correspondent pages. In case you are completing the whole term or the last part of your term abroad, we ask you to hand in your logbook at the Central PJ Coordination after your return. If a certificate of equivalence is required for the term abroad, the logbook must be shown to the PJ Representative before it is handed in. In any case, we recommend you consult the Examinations Office before starting a term abroad to ensure that it will be recognized.

### Logbook as a Basis for a Reference

If you wish to receive a reference from your term, please communicate this to the administration of the respective clinic. In case you voluntarily complete on-call duties, shadowing, etc., note this in the section *Additional Materials*, including the date and signature so that it can be considered in the reference.

## Learning Objectives and Competences

The German National Competence-based Catalog of Learning Objectives in Medicine (Nationaler Kompetenzorientierter Lernzielkatalog Medizin, NKLM) in version 2.0 of 2021 defines your future occupation as a doctor in various roles. The term of anesthesia should develop skills in professional behavior and mannerisms. Communication and consultation as a qualified expert are essential for teamwork.

### General Objectives

At the end of the term of anesthesia, you should have acquired the following skills:

- independent care for patients under the supervision of medical teaching staff
- responsibility towards the patient and your colleagues
- application of practical skills and connection with theoretical knowledge
- use of a differential diagnosis approach
- development of problem-oriented thinking
- formulation of preliminary diagnoses
- independent conception of an appropriate treatment plan
- research, application, and communication of current scientific findings.

## Personal Objectives

Please define your personal learning objectives for this term in the following chart. In which areas do you see the need for improvement?

At the beginning of your term, determine how and when you will achieve your goals. Reevaluate these objectives in fixed intervals to see how far you have progressed.

Personal objectives	Done ✓

## Specific Objectives

### Rotation in an ICU

During the term of anesthesia, it is mandatory that you complete a rotation of at least four weeks in a surgical or interdisciplinary intensive care unit. If this rotation is not completed, you will not be able to receive a certificate of completion and your work will not be recognized. Please record the rotation time period in the table below and have it signed by the responsible doctor.

From	To	Signature (doctor)

### Practical Competences

At the beginning of the term, please assess your **own competences** (see below *Definition of competency levels*) and record the corresponding scores in the column *Start of term*.

During the course of your term, e.g., at the end of each rotation (approx. after 4 to 8 weeks) and at the end of the term, **your mentor or the responsible attending is required** to assess your competences. In your presence, they record the competences you achieved in the other two columns (midterm and end of term) and confirm this with a signature/stamp. This allows you to identify corresponding deficits and, if necessary, specifically improve them in the next rotation.

#### Definition of competency levels

The different competency levels based on the NKLM are defined as follows:

- **Level 1: factual knowledge (1 point)**  
The student has **theoretical knowledge** about a medical skill (facts, data).
- **Level 2: practical knowledge (2 points)**  
The student **has seen** the medical skill implemented on a patient or in a demonstration. They should be able to explain the facts and place them in a clinical-scientific context.
- **Level 3: implementation under supervision (3 points)**  
The student **has implemented the medical skill on a patient under supervision or demonstrated it in a simulation.**
- **Level 4: independent implementation (4 points)**  
The student, knowing the consequences, has implemented the medical skill **independently** and **appropriately** to the situation and is experienced in its application.

<b>General medical skills</b>	<b>Start of term</b>	<b>Mid-term</b>	<b>End of term</b>	<b>Goal</b>
Structured presentation of patients (e.g. during rounds)				4
Establishment of peripheral venous access				4
Surgical hand disinfection				4
Don sterile gowns correctly and safely, work sterilely				4
Conduction and interpretation of an ECG				4
Interpretation of a laboratory results				4
Interpretation of a chest X-ray				4
Interpretation of a CT scan				2
Basic Life Support				4

<b>Working in a team</b>	<b>Start of term</b>	<b>Mid-term</b>	<b>End of term</b>	<b>Goal</b>
Participation in team meetings between different profession groups				2
Participation in rounds with different professional groups				2
Care of patients in a team of different profession groups				4
Work in a team with different professional groups				4
Participate in an interdisciplinary case discussion				2
Cooperation with different medical disciplines, obtain consultations				3

<b>OR</b>	<b>Start of term</b>	<b>Mid-term</b>	<b>End of term</b>	<b>Goal</b>
Pre-medication: take patient history				2
Pre-medication: conduct physical examination				2
Pre-medication: determine medication for pre-medication				2
Pre-medication: determine the anesthetic plan				2
Pre-medication: conduct informed-consent discussion				2

Application of ASA physical status classification system				4
Evaluation of perioperative risks				3
Evaluation of ease of intubation				4
Explain NPO (nothing by mouth) guidelines				2
Name commonly used hypnotics in general anesthesia and explain mechanism of action				2
Name commonly used opioids and explain mechanism of action				2
Name commonly used muscle relaxants and explain mechanism of action				2
Name indications for mechanical ventilation in the operating room				2
Mouth-to-mask ventilation				4
Usage of a bag valve mask				4
Usage of a semi-closed breathing circuit system				2
Insertion of an oropharyngeal airway				4
Usage of a nasopharyngeal airway				1
Manual ventilation of an intubated patient				4
Explain the construction and function of a ventilator				3
Adjustment of ventilator settings				4
Interpretation of the capnogram				3
Interpretation of the ventilation pressure curve				3
Interpretation of the ventilation flow curve				3
Set and change alarm limits on ventilation monitor				4
Set up ECG, NIBP (non-invasive blood pressure measurement), pulse oximetry monitoring				4
Endotracheal intubation				3
Placement of a laryngeal mask				3
Extubation				3

Rapid-Sequence-Induction				2
Awake fiberoptic intubation				2
Spinal anesthesia				2
Peridural anesthesia				2
Plexus block				2
Difficult Airway Management				1

<b>Intensive care unit</b>	<b>Start of term</b>	<b>Mid-term</b>	<b>End of term</b>	<b>Goal</b>
Handling intubated, analgosedated patients in the intensive care unit				4
Physical examination, incl. documentation				4
Explain the parameters of a patient's monitor				4
Extended hemodynamic monitoring (pulmonary artery catheter, calibrated pulse pressure (PiCCO))				2
Clinical assessment of the circulatory system				3
Instrumental assessment of the circulatory				3
Differentiate different causes of hypotension				3
Calculate volume balance				4
Determine infusion therapy				2
Therapy with vasopressors and positive inotropic drugs				2
Explain intrathoracic/intrapulmonary pressure relationships				2
Device setting for non-invasive ventilation with a face mask & parallel care for the patient				2
Assess mechanical-respiratory values				3
Explain different forms of ventilation				3
Explain weaning strategies				3
Determine indications for tracheostomy				2
Name commonly used medications for analgosedation and explain mechanism of action				2

Assess level of sedation				3
Explain withdrawal symptoms and therapy				2
Explain the indications and mechanism of hemofiltration/hemodialysis				2
Explain the indications and mechanism of the ECMO/ECLA				2
Explain the indication and mechanism of the IABP (intra-aortic balloon pump)				2
Explain the indications and mechanism of cardiac support systems				2
Nosocomial infections				2
Handling immunocompromised and infectious patients according to established standards				4
Identify clinical signs of infection				3
Laboratory diagnostics of an infection				2
Interpretation of microbiological results				3
Explain SIRS and sepsis				2
Knowledge of important bacterial/fungal/viral pathogens				2
Explain principles of empirical/calculated antibiotic therapy				2
Test-based antibiotic therapy				2
Explain the indications and products used for enteral nutrition				2
Explain the indications and products used for parenteral nutrition				2
Explain prophylaxis and treatment of constipation				2
Interpretation of a blood gas analysis				4
Taking blood from a central venous catheter / obtaining an arterial blood sample from an in-situ catheter				4
Establish central venous access				2
Establish arterial access				2
Blood group determination, bedside test				3
Conduction of a blood transfusion				2



Transesophageal echocardiogram				1
Obtaining a sample of endotracheal secretion				2
Obtaining a blood culture				2
Obtaining swab tests (various locations)				2

	Start of term	Mid-term	End of term	Goal
<b>Sum of each column</b>				258

**Minimum number of points: 181**

<b>Sum at midterm</b>	<b>Date and signature (doctor)</b>
<b>Sum at the end of the term</b>	<b>Date and signature (doctor)</b>

The targeted competency level in the column on the right can be exceeded depending on available opportunities and your instructor's willingness to teach. Therefore, your overall score can be above 100 %

**Specific Medical Skills**

**Care for individual patients in the operating room**

An essential part of the term in anesthesia should be caring for individual patients through pre-medication to surgery and aftercare. After acquiring a sufficient level of knowledge, you may be allowed to conduct the pre-medication informed-consent discussion with the patient under supervision and administer anesthesia in the operating room under supervision.

**Overview of accompanied patients (no minimum number required)**

	Disease	Date	Signature (doctor)
1			
2			
3			
4			
5			

**Accompanying individual patients in the intensive care unit**

While you are rotating in the intensive care unit, you should write at least two doctor’s notes for intensive care patients and update the notes daily (no short-term/intermediate care).

	Disease	Date	Signature (doctor)
1			
2			

## Mentor Meetings

At the beginning of every term, a doctor should be assigned as your mentor. If this does not happen, actively ask one of the doctors on your service to be your mentor. Your mentor is there to support you in your training during the PJ. They should help you achieve the learning objectives set at the beginning of term, answer questions, and help solve problems that may arise while you are on their service. Once a month, you should meet with your mentor to track your progress and ensure you are able to meet all the goals you set for yourself in this term.

### My mentors

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	Date	Signature (mentor)
Kick-off meeting		
Intermediate meeting 1		
Intermediate meeting 2		
Final meeting / evaluation		

## Mock Final Exam (optional)

### Evaluation

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Date and signature (examiner)

## PJ Seminar Topics

During your term, you should continue your education in the following areas and, if necessary, attend seminars.

- Induction of general anesthesia
- Maintenance of a general anesthesia
- Pre-operative evaluation
- Monitoring in anesthesia and intensive care medicine
- Airway management
- Ventilation
- Catecholamines
- Fluid and volume therapy
- Transfusion
- Blood coagulation
- Peripheral regional anesthesia
- Spinal and plexus regional anesthesia
- Acute pain therapy
- Thoracic anesthesia
- Obstetric anesthesia
- Pediatric anesthesia
- Post-operative therapy / post-anesthesia care unit (PACU)
- Sepsis
- ARDS
- Case review anesthesia
- Case review intensive care medicine
- BLS-/ALS-training

**Confirmation of participation in PJ seminars (min. 12, interdisciplinary seminars also possible)**

	Date	Topic	Signature (lecturer)
1			
2			
3			
4			
5			
6			
7			

8			
9			
10			
11			
12			
13			
14			
15			
16			

## Additional Materials

### Optional Additional Achievements

Here you can register your additional achievements and courses during the PJ, e.g.\_

- own presentations
- case presentations as part of a PJ seminar
- courses in ultrasound, suturing, ECG, CPR, etc.

Type of additional achievement	Date	Signature



### **Postal address for returning the logbook**

LMU Klinikum  
Zentrale PJ-Koordination  
Raum D0.48 im ZeUS  
Pettenkofersstraße 8a  
80336 München  
GERMANY

### **Imprint**

#### **Editor, concept, text, layout, design and translation**

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(Central PJ Coordination of the University Hospital Munich)

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We would like to thank our colleagues of the Klinik für Anaesthesiologie (Anesthesiology) for their expertise and support in drafting the logbook.

The teaching content in the logbooks does not claim to be complete.