

**Paediatric Surgery**

Code: 103606  
ECTS Credits: 3

**2024/2025**

Degree	Type	Year
2502442 Medicine	OT	5

## Contact

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## Teachers

Natalia Alvarez Garcia

## Teaching groups languages

You can view this information at the [end](#) of this document.

## Prerequisites

5th year students.

The student will undertake the commitment of preserving the confidentiality and professional secrecy of the communities that will have access to the apprenticeships of the departments.

## Objectives and Contextualisation

- To explain the most common surgical pathology in pediatric age, its epidemiology, embryology, diagnostic criteria
- To introduce the specialty of pediatric surgery, which preferably treats children
- To incorporate students in the practice of pediatric surgical care in the clinic

Pediatric Surgery is officially defined in Spain by RD 2015/78 of 15 July 2015. With the appearance of the mentioned Decree all the National Commissions of Pediatric Surgery are created. Pediatric Surgery is defined as: "Medical-surgical specialty of the period of childhood and adolescence. Following this definition, Pediatric Surgery includes the surgical conditions of the pediatric population. The obligation to teach a certain subject to motivate the training of the specialty is established."

## Competences

- Be able to work in an international context.
- Communicate clearly and effectively, orally and in writing, with patients, family-members and accompanying persons, to facilitate decision-making, informed consent and compliance with instructions.
- Convey knowledge and techniques to professionals working in other fields.
- Critically assess and use clinical and biomedical information sources to obtain, organise, interpret and present information on science and health.
- Demonstrate an understanding of the fundamentals of action, indications, efficacy and benefit-risk ratio of therapeutic interventions based on the available scientific evidence.
- Demonstrate basic research skills.
- Demonstrate sufficient supervised clinical experience in hospitals or other healthcare centres, and familiarity with patient-centred care management and the correct use of tests, medicines and other resources of the healthcare system.
- Demonstrate understanding of the causal agents and the risk factors that determine states of health and the progression of illnesses.
- Demonstrate understanding of the importance and the limitations of scientific thought to the study, prevention and management of diseases.
- Demonstrate understanding of the manifestations of the illness in the structure and function of the human body.
- Demonstrate, in professional activity, a perspective that is critical, creative and research-oriented.
- Design and manage programmes and projects in the field of health.
- Engage in professional practice with respect for patients' autonomy, beliefs and culture, and for other healthcare professionals, showing an aptitude for teamwork.
- Establish a diagnostic approach and a well thought-out strategy for action, taking account of the results of the anamnesis and the physical examination, and the results of the appropriate complementary tests carried out subsequently.
- Establish the diagnosis, prognosis and treatment, basing decisions on the best possible evidence and a multidisciplinary approach focusing on the patient's needs and involving all members of the healthcare team, as well as the family and social environment.
- Formulate hypotheses and compile and critically assess information for problem-solving, using the scientific method.
- Indicate the most suitable treatment for the most prevalent acute and chronic processes, and for the terminally ill.
- Listen carefully, obtain and synthesise relevant information on patients' problems, and understand this information.
- Maintain and sharpen one's professional competence, in particular by independently learning new material and techniques and by focusing on quality.
- Maintain and use patient records for further study, ensuring the confidentiality of the data.
- Obtain and prepare a patient record that contains all important information and is structured and patient-centred, taking into account all age and gender groups and cultural, social and ethnic factors.
- Perform a general and a system-by-system physical examination appropriate to the patient's age and sex, in complete and systematic way, and a mental evaluation.
- Put forward suitable preventive measures for each clinical situation.
- Recognise and take action in life-threatening situations and others that require an immediate response.
- Recognise the role of complexity, uncertainty and probability in decision-making in medical practice.
- Recognize one's role in multi-professional teams, assuming leadership where appropriate, both for healthcare provision and for promoting health.
- Use information and communication technologies in professional practice.
- Write patient records and other medical documents that can be understood by third parties.

## Learning Outcomes

1. Acknowledge the importance of research to medical progress.

2. Adapt the therapy procedure and the surgical technique, if appropriate, in accordance with the available data.
3. Anticipate and compare information for good decision-making.
4. Apply basic surgical manoeuvres in practice with simulated models.
5. Approach the physical examination not only from the diagnostic perspective, but also the therapeutic perspective, with special emphasis on surgical procedures.
6. Back decision-making with the best scientific evidence.
7. Be able to work in an international context.
8. Build diagnostic and therapeutic algorithms based on the best scientific evidence, taking into account the facilities available.
9. Calculate the surgical risk indices, both general and by apparatus, and adjust the indications accordingly.
10. Categorise emergency situations in accordance with the available indices of seriousness.
11. Choose a therapy option in accordance with available information and patient preference.
12. Choose content in accordance with the rules of evidence-based medicine.
13. Choose the best possible research design to respond to the hypothesis put forward.
14. Convey knowledge and techniques to professionals working in other fields.
15. Critique original or review scientific papers.
16. Define the statistical methodological bases.
17. Demonstrate basic research skills.
18. Demonstrate, in professional activity, a perspective that is critical, creative and research-oriented.
19. Describe biomedical bibliographic databases and ways to filter the information provided.
20. Describe the mechanisms of action of physical and chemical agents on the organism.
21. Distinguish the bases of the different surgical specialisations to integrate and lead the treatment in acute and chronic patients with multiple conditions.
22. Distinguish the implications of different interventions regarding functional and morphological changes.
23. Encourage the search for answers to the questions that arise during surgery.
24. Enumerate the alarm signs that require urgent attention to the patient.
25. Establish a working hypothesis and its objectives.
26. Establish rapport as the first important step in all medical procedures, both in elective and emergent situations and leave a written record of the information transmitted and the wishes of the patient.
27. Estimate the risks and benefits of the various therapy options.
28. Evaluate the appropriate scientific methodology for a biomedical paper.
29. Formulate and discuss the results obtained.
30. Formulate hypotheses and compile and critically assess information for problem-solving, using the scientific method.
31. Further investigate the risk factors of morbidity and mortality in operations.
32. Gather information and select the most important facts about the patient, both in normal visits and emergencies.
33. Identify all prophylactic measures to reduce indices of morbidity and mortality to the minimum.
34. Identify emergency situations and establish an order of priorities.
35. Identify funding sources and set up a budget.
36. Identify the ethical bases for decision-making in the field of surgery.
37. Identify the legal bases for creating, maintaining and using databases that contain medical information.
38. Integrate all pre-operative information for decision-making.
39. Justify decisions taken based on the information obtained.
40. Maintain and sharpen one's professional competence, in particular by independently learning new material and techniques and by focusing on quality.
41. Make a critical analysis of the objectives to be achieved with surgery, contrasting this with the adverse effects that may be involved.
42. Manage the information available and set levels of discussion in multidisciplinary groups.
43. Obtain the most important data, both on the illness being treated and on factors influencing morbidity and mortality.
44. Participate in the whole process of patient-care, from diagnosis to aftercare.
45. Perform the initial assessment automatically and acknowledge the actions that require an immediate response.
46. Present results orally or in writing.
47. Provide clear, comprehensible information on the therapy options to patients and their families.

48. Provide the bases for preparing clinical guides and constructing diagnostic and therapeutic algorithms.
49. Recognise when a patient is in the terminal phase and avoid therapeutic obstination.
50. Transmit information clearly and accurately, leaving no room for possible misunderstandings.
51. Transmit the information on the surgical procedure to be performed and draw up a document of informed consent.
52. Use information and communication technologies in professional practice.
53. Use the scales that assess the general (physical and mental) state of the patient.
54. Use the specific bibliographic sources that will help to develop further one's knowledge.

## Content

*This subject is structured into the following sections*

### Lesson 1. Presentation

a. General aspects of Pediatric Surgery b. Trauma in the pediatric age

### Lesson 2. Head and Neck Pathology

a. Cleft palate/lip b. Cysts and congenital sinus c. Thyroglossal duct cyst

### Lesson 3. Thoracic pathology I

a. Embryogenesis b. Oesophageal atresia c. Congenital diaphragmatic h

### Lesson 4. Thoracic pathology II

a. Pulmonary malformation. b. Congenital lobar emphysema c. Pectus e

### Lesson 5. Gastro-Oesophagogastric pathology

a. Gastro-oesophageal reflux and hiatus hernia b. Achalasia c. Hypertro

### Lesson 6. Gastrointestinal pathology I

a. Atresias b. Malrotation. Intestinal volvulus c. Gastrointestinal duplicati

### Lesson 7. Gastrointestinal pathology II

a. Meconium ileus b. Hirschsprung's disease.

### Lesson 8. Gastrointestinal pathology III

a. Meckel's Diverticulum b. Appendicitis c. Intussusception.

### Lesson 9. Anorectal Anomalies

a. Anorectal anomalies b. Cloacal exstrophy

Lesson 10. Liver pathology

a. Biliary atresia b. Choledochal cyst c. Cholecystectomy

Lesson 11. Abdominal wall

a. Omphalocele/Gastroschisis b. Hernias c. Orchidopexy d. Acute scrotum

Lesson 12. Tumours

Lesson 13. Pediatric Urology I

a. Pyeloplasty b. Ureteric duplication c. Obstructive megaureter d. Posterior Urethral valves.

Lesson 14. Pediatric urology II

a. Vesicoureteral reflux b. Neurogenic bladder

## Lesson 15. Pediatric urology III

a. Bladder exstrophy and Epispadias b. Hypospadias c. Disorders of sex development.

## Activities and Methodology

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
ASISTENCIAL CLINICAL PRACTICES (PCAh)	15	0.6	2, 9, 41, 53, 5, 38, 43, 32, 52
Lessons	15	0.6	2, 9, 41, 53, 5, 38, 43, 32, 52
Type: Autonomous			
Theory lecture. Practical evaluations.Simulations. Mini-clinical evaluation exercise (mini-CEX)	45	1.8	2, 9, 41, 53, 5, 38, 43, 32, 52

This Guide describes the framework, contents, methodology and general rules of the subject, in accordance with the current curriculum. The final organization of the subject in terms of the number and size of groups, distribution in the calendar and dates of exams, specific criteria for evaluation and review of exams, will be specified in each of the Hospital Teaching Units (HTU), who will explain this through their web pages and the first day of class of each subject, through the teachers responsible for the subject in the UDH. For the current academic year, the professors appointed by the Departments as responsible for the subject at Faculty and HTU level are:

Faculty Manager: Bernardo Núñez (bnunez@tauli.cat)

SP HTU Manager	VH HTU Manager	GTiP HTU Manager	PT HTU Manager
NO SE OFERTA	Manuel López Paredes manuel.lopez@vhebron.net	Alba MArtin Alba.martin@uab.cat	Bernardo Nuñez García bnunez@tauli.cat

General teaching methodology:

**DIRECTED TEACHING TYPES:** (20% Theory and 20% Asistencial Clinical Practices)

Theory (TEtypology). Scheduled sessions 15 (1 hour per session).

Asistencial Clinical Practices (PCAh typology)

Period of unregulated curricular internships corresponding to studies in th

**TUTORIALS**

Tutorials will not be counted as contact hours, but can be scheduled and

**SELF-EMPLOYED WORK** (60% total 45 hours).

Comprehensive reading of texts and articles, study and realization of sch

**EVALUATION**

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exceptionally and according to the criteria of the responsible teachers, the resources available and the health situa

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

**Assessment**

**Continous Assessment Activities**

Title	Weighting	Hours	ECTS	Learning Outcomes
Assistance and active participation in healthcare practicum, Theory lecture. Practical evaluations.Simulations. Mini-clinical evaluation exercise	50%	0	0	2, 4, 31, 9, 10, 17, 18, 22, 41, 11, 53, 5, 14, 26, 27, 30, 42, 37, 36, 34, 33, 23, 38, 39, 40, 43, 47, 44, 46, 48, 45, 49, 32, 7, 50, 51, 52
Attendance and active participation in class and in seminars	50%	0	0	2, 3, 6, 28, 9, 8, 15, 16, 20, 19, 21, 41, 53, 5, 24, 13, 25, 35, 38, 43, 29, 32, 12, 54, 52, 1

Approval criteria.

Care requirements:

1. Assisted hours: 80%

2. Supervised hours attendance: 80%

Evaluation requirements:

1. Assistance 80%

Students who have not passed the subject through the assessment may

The regulations on the permanence regime in the official undergraduate

This subject does not provide the single assessment system.

## **Bibliography**

### **1. Pediatric Surgery**

By: Scorpio, Ronald J; Coppola, Christopher P; Kennedy, Alfred P; Morton. Springer International Publishing. ISBN: 978-3-319-04339-5, 978-3-319-04340-1. Health & Medicine (General). Springer eBooks (Medicine 2014) 2014

### **2. Pediatric Surgery**

By: Coventry, Brendon J; Morton. Springer Verlag London Ltd. ISBN: 978-1-4471-5438-9, 978-1-4471-5439-6, 978-1-306-69237-3, 978-1-4471-5439-6. Health & Medicine (General). Springer eBooks (Medicine 2014) 2014

### **3. Ashcraft's Pediatric Surgery**

By: Holcomb; George Whitfield Holcomb III. W B Saunders Company. ISBN: 978-1-4160-6127-4. Health & Medicine (General). ScienceDirect eBooks (CSUC) 2013

### **4. An Illustrated Guide to Pediatric Surgery**

By: Al-Salem, Ahmed H. Springer International Publishing. ISBN: 978-3-319-06664-6, 978-3-319-06666-0, 978-3-319-06665-3. Health & Medicine (General). Springer eBooks (Medicine 2014) 2014

### **5. Symptoms and Signs in Pediatric Surgery**

By: Kaiser, Georges L; Lesny. Springer Berlin Heidelberg. ISBN: 978-3-642-31160-4, 978-1-283-93504-3, 978-3-642-31161-1. Health & Medicine (General). Springer eBooks (Medicine 2012) 2012

### **6. Diagnostic and Interventional Ultrasound in Pediatrics and Pediatric Surgery**

By: Scholz, Stefan; Jarboe, Marcus D; Hruska. Springer. ISBN: 978-3-319-21698-0, 978-3-319-21699-7. Health & Medicine (General). Springer eBooks (Medicine 2016) 2016

### **7. Fundamentals of Pediatric Surgery: Second Edition**

By: Mattei, Peter; Muratore, Christopher S; Rollins, Michael D; Nichol, Peter F; Hruska. Springer. ISBN: 978-3-319-27441-6, 978-3-319-27443-0. Health & Medicine (General). Springer eBooks (Medicine 2017) 2017

### **8. Pediatric Thoracic Surgery**

Girolamo Mattioli, Paolo Petralia, Michele Torre, Editors. Ed. Girolamo Mattioli, Paolo Petralia, and Michele Torre. Cham, Switzerland: Springer, 2021.



#### 9. Pediatric Digestive Surgery

By: Lima, Mario; Rizza. Springer. ISBN: 978-3-319-40523-0, 978-3-319-40525-4. Health & Medicine (General). Springer eBooks (Medicine 2017) 2017

#### 10. Jones' Clinical Paediatric Surgery

By: Hutson; Chichester. John Wiley & Sons Incorporated. ISBN: 978-1-118-77731-2, 978-1-118-77728-2, 978-1-118-77729-9, 978-1-118-77730-5. Health & Medicine (General). Wiley Online Library Books EBS 2018 2015

### **Software**

There are no specific software needs to be able to develop the subject.

### **Language list**

Information on the teaching languages can be checked on the CONTENTS section of the guide.