**COURSE OUTLINE**

1. **GENERAL**

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| **SCHOOL** | School of Health Sciences |
| **ACADEMIC UNIT** | Faculty of Medicine |
| **LEVEL OF STUDIES** | Undergraduate |
| **COURSE CODE** | **ΙΑΥΒ07** | **SEMESTER** | **11-12th**  |
| **COURSE TITLE** | **CLINICAL PRACTICE IN INTENSIVE CARE MEDICINE** |
| **INDEPENDENT TEACHING ACTIVITIES** *if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, give the weekly teaching hours and the total credits* | **WEEKLY TEACHING HOURS** | **CREDITS** |
| Clinical practice in Intensive Care Medicine, Intensive Care Unit, University Hospital of Ioannina | **25** h/week x 2 weeks = 50 h | **3** |
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| *Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (4).* |  |  |
| **COURSE TYPE***general background, special background, specialised general knowledge, skills development* | Specialised general knowledge and skills development |
| **PREREQUISITE COURSES:** | Pathophysiology, Nosology |
| **LANGUAGE OF INSTRUCTION and EXAMINATIONS:** | Greek |
| **IS THE COURSE OFFERED TO ERASMUS STUDENTS** | NO |
| **COURSE WEBSITE (URL)** | http://ecourse.uoi.gr |

1. **LEARNING OUTCOMES**

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| **Learning outcomes** |
| *The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.**Consult Appendix A* * *Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area*
* *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B*
* *Guidelines for writing Learning Outcomes*
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| • Clinical practice follows academic lectures and aims at acquiring skills, such as intubation, central line placement, non-invasive ventilation application, arterial blood gases sampling, together with understanding the general principles of mechanical ventilation and applying proper hemodynamic monitoring.Upon successful completion of clinical practice, students will be able to:• Interview the patient for medical history, perform systemic routine clinical examination, order and evaluate proper laboratory and radiology routine testing.• Know indications for mask ventilation and intubation together with necessary equipment and drugs and understand relevant complications.• Know indications and contraindications, necessary equipment, procedure and daily care of central line placement (femoral, internal jugular, subclavian); also know indications and contraindications for arterial line placement.• Know necessary equipment and procedure for nasogastric catheter and urinary catheter placement.• Know the basic principles for mechanical ventilation (resistance, compliance), main modes of mechanical ventilation, and special needs of patients with ARDS, asthma and chronic obstructive pulmonary disease; be familiar with monitoring of mechanical ventilation (pressure flow waveforms) and ventilator’s alarms; understand the indications for the prone positioning of ARDS patients; know indications and contraindications together with general principles of non-invasive mechanical ventilation.• Understand basic hemodynamic monitoring (blood pressure, central venous pressure), together with more advanced techniques such as pulmonary artery catheterization (pulmonary pressure, wedge pressure, cardiac output, SVO2) and special hemodynamic monitoring (Vigileo; SVV, PVV).• Use lung ultrasound to recognize pleural effusions, lung atelectasis, and pneumothorax; use ultrasound to assess myocardial contractility and inferior vena cava variation; use ultrasound to detect large veins (subclavian, internal jugular, femoral) for central line placement.• (In a simple chest X-ray) identify key anatomical structures; recognize central line catheters, nasogastric tube, endotracheal tube; recognize usual pathological conditions such as atelectasis, and pneumothorax. (In a CT scan) recognize basic types of traumatic brain injury such as subdural and epidural hematoma, contusions, subarachnoid haemorrhage, diffuse and focal cerebral oedema; recognize pathological chest and abdominal conditions (e.g. pancreatitis, ascites, etc.).• Classify acute renal injury, know indications for renal replacement therapy and understand basic techniques of continuous hemodiafiltration (CVVHDF).• Recognize the patient being in severe respiratory distress, and know how to undertake immediate actions (O2, CPAP, NIV, MV); proceed to clinical and diagnostic work needed for differential diagnosis of hypoxic and hypercapnic respiratory failure; evaluate arterial blood gases.• Make differential diagnosis of shock based to medical history, clinical findings and hemodynamic monitoring; apply basic interventions depending on shock’s type.• Make differential diagnosis of coma; know the basic principles of conservative and surgical treatment of coma, subarachnoid haemorrhage, together with indications and contraindications of thrombolytic therapy of ischemic cerebrovascular episodes; understand intracranial pressure monitoring.• Know brain death criteria and perform appropriate clinical tests for brain death diagnosis. |
| **General Competences**  |
| *Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and appear below), at which of the following does the course aim?* |
| *Search for, analysis and synthesis of data and information, with the use of the necessary technology* *Adapting to new situations* *Decision-making* *Working independently* *Team work**Working in an international environment* *Working in an interdisciplinary environment* *Production of new research ideas*  | *Project planning and management* *Respect for difference and multiculturalism* *Respect for the natural environment* *Showing social, professional and ethical responsibility and sensitivity to gender issues* *Criticism and self-criticism* *Production of free, creative and inductive thinking**……**Others…**…….* |
| * Search for, analysis and synthesis of data and information, with the use of the necessary technology
* Decision-making
* Working independently
* Team work
* Production of free, creative and inductive thinking
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1. **SYLLABUS**

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| * ICU admission criteria, ICU organization
* ICU scoring systems
* Enteral and parenteral nutrition, basic principles
* Basic principles of monitoring of respiratory function
* Hemodynamic monitoring
* Acute respiratory failure (ARF)
* Fundamentals of mechanical ventilation
* Non-invasive mechanical ventilation (NIMV)
* Shock
* Sepsis, septic shock, current treatment guidelines
* Traumatic brain injury
* Management of the trauma patient in the ICU
* Serious haemorrhage and ischemic strokes
* Brain death - Organ donation
* Ethical dilemmas and problems about the patient with irreversible disease
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1. **TEACHING and LEARNING METHODS - EVALUATION**

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| **DELIVERY***Face-to-face, Distance learning, etc.* |  Clinical practice in Intensive Care Medicine, Intensive Care Unit, University Hospital of Ioannina at bedside. |
| **USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY** *Use of ICT in teaching, laboratory education, communication with students* | The learning process is supported through the electronic platform http://ecourse.uoi.gr |
| **TEACHING METHODS***The manner and methods of teaching are described in detail.**Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artistic creativity, etc.**The student's study hours for each learning activity are given as well as the hours of non-directed study according to the principles of the ECTS* |

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| ***Activity*** | ***Workload of each students group***  |
| Clinical practise – lectures at bedside | **50** |
| Clinical practise - techniques learning  | **10** |
| Clinical practise - study and analysis of bibliography | **5** |
| Clinical practise -independent study | ***10*** |
| **Course total**  | ***75******3 ECTS*** |
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| **STUDENT PERFORMANCE EVALUATION***Description of the evaluation procedure**Language of evaluation, methods of evaluation, summative or conclusive, multiple choice questionnaires, short-answer questions, open-ended questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory work, clinical examination of patient, art interpretation, other**Specifically-defined evaluation criteria are given, and if and where they are accessible to students.* | Final written exam which include multiple choice questions. |

1. **ATTACHED BIBLIOGRAPHY**

*Teaching - study material*

**Critical Care Medicine: Principles of Diagnosis and Management in the Adult**

**Authors: Joseph E. Parrillo, R. Phillip Dellinger**

**Evdoxos Identification Number: 133039576**

**ISBN: 978-618-5296-49-0**

**Dimitrios Lagos Editions**

- Related scientific journals:

1. Current Opinion in Critical Care

2. Intensive Care Medicine