



DEPARTMENT OF MEDICINE  
SCHOOL OF HEALTH SCIENCES  
UNIVERSITY OF THESSALY



POSTGRADUATE STUDIES  
MASTER'S DEGREE IN  
NEPHROLOGICAL CARE (MSc)

---

## SYLLABUS

**1<sup>st</sup> Semester, Total ECTS: 30**

### **Regular kidney function, pathophysiology of kidney diseases (Code 1, ECTS: 5)**

- Anatomy of the kidney and the urinary system.
- Electrolyte Disorders (Ka).
- Nephron Embryology. Congenital anomalies of the kidney and the urinary system.
- The renal Glomerulus. Measurement of the renal function.
- Physiology of the kidney.
- Acid / Base balance disorders.
- Sodium / Water balance disorders.

### **Special kidney diseases, renal replacement (Code 2, ECTS: 5)**

- Idiopathic glomerular diseases combined with a nephrotic syndrome.
- Kidney biopsy for renal diseases diagnosis.
- Acute Renal Failure (ARF). Prevention and Treatment.
- Systemic vasculitis, renal failure.
- Chronic Kidney Disease (CKD) and peritoneal dialysis.
- Chronic Kidney Disease (CKD) and hemodialysis.

### **Comorbidities in Nephrology (Code 3, ECTS: 5)**

- Arterial Hypertension in CKD (prevention and treatment).
- Obstetric and Gynecological Disorders in CKD and in transplant.
- Congenital anomalies of the urinary system. CKD and urination disorders in children.
- Neurological disorders in urination.
- Obstructive uropathy. Diagnosis and treatment.

---

Registrar:  
University Hospital of Larissa  
Dialysis Unit  
Office 17, 1<sup>st</sup> floor  
Campus of BIOPOLIS, Larissa (Greece)

Tel.: +30 2413 501 667  
Fax: +30 2413 501 667  
email: [nephro\\_care@med.uth.gr](mailto:nephro_care@med.uth.gr)

- Obesity in CKD.
- Cutaneous Manifestations in CKD and transplant.
- Heart failure and coronary disease in CKD.
- Diabetes Mellitus in CKD.
- Systemic Lupus Erythematosus (SLE) and Nephritis.
- Hyperuricemia and nephropathy.
- Secondary Hyperparathyroidism. Guidelines for treatment.
- Diabetic Nephropathy.
- Kidney Transplant. Techniques and surgical complications.

### **Medication, alternative therapy, exercise and specialized diet in renal diseases (Code 4, ECTS**

#### **5)**

- Diuretics.
- Nutrition in CKD, Acute Kidney Injury (AKI), chronic hemodialysis and chronic peritoneal dialysis.
- Dietary risk factors for cardiovascular diseases in CKD.
- Exercise as treatment in the final stage of CKD.
- Mental health and care in CKD patients.
- How to manage hard emotions and reactions in CKD patients and caregivers.
- Psychological support and quality of life in CKD.
- Psychological dimensions of renal failure: managing the psychological needs of patients and family.
- Experiencing pain: the CKD patients.
- Probiotics in CKD. Low uric acid diet.
- Psychopathology manifestations in kidney transplant. The importance of the interdisciplinary approach in treatment.

### **Epidemiology of kidney diseases, Biostatistics, Literature review, Research methodology (Code**

#### **5, ECTS)**

- Epidemiology of kidney diseases.
- Research methodology, research and evaluation of medical literature.

- General Epidemiology.
- General Epidemiology. Exercises.
- How to write a research paper in biomedical sciences.
- Biostatistics.
- SPSS Seminar.

**Organization, management and economics of Renal Care. Transplant. (Code 6, ECTS 5)**

- Health Economics in chronic diseases.
- Organization and economics of a Kidney Unit.
- Organization and economics of an Hemodialysis Unit.
- Organization and economics of a Peritoneal Dialysis Unit.
- Legislation and organization of organ donation, National Organization of Transplants (*in Greek: EOM*).
- Kidney transplant. Organization and operation of a Transplant Center.

**2<sup>nd</sup> Semester, Total ECTS: 30**

**Hygiene, infections, contagious diseases in Kidney Units (Code 7, ECTS 5)**

- Hygiene and safety in Kidney Units.
- Peritoneal Dialysis-related peritonitis.
- Measuring the quality of peritoneal dialysis and peritoneal membrane.
- Cleanliness and disinfection in Hemodialysis Units.
- Contagious infectious diseases and vaccinations in Hemodialysis Units.

**Emergencies in Kidney Units (Code 8, ECTS 5)**

- Complications of peritoneal dialysis (infectious and non-infectious).
- Emergencies in Kidney Units.

**Special treatments, continuous renal replacement therapy, intensive care (Code 9, ECTS 5)**

- Cardiac surgery and Acute Kidney Injury.
- The importance of Acute Kidney Injury in hospitalized patients.
- Plasmapheresis treatment - Methods and indications.
- Hemostasis and anticoagulant therapy.
- Principles and technology of continuous renal replacement therapy.
- Pediatric Nephrology: CKD - Hemodialysis - Peritoneal Dialysis - Transplant.
- How to manage fluids and the Acute Kidney Injury in the ICU.
- Application of continuous renal replacement therapy and plasmapheresis.

**Principles, Technology and Methodology of Hemodialysis (Code 10, ECTS 5)**

- Quality of Hemodialysis.
- Monitoring of Chronic Hemodialysis patients.
- Application of Hemodialysis.
- Vascular Bypass in Hemodialysis.
- Principles and Technology of Hemodialysis.

- Complications of Hemodialysis.
- Clinical Laboratory tests in hemodialysis - The use of technology.

### **Principles, Technology and Methodology of Peritoneal Dialysis (Code 11, ECTS 5)**

- Materials and solutions for Peritoneal Dialysis (emphasis in different types of solutions).
- Monitoring of Peritoneal Dialysis Patients (clinical assessment, hydration assessment, laboratory data, dialysis assessment, PET test).
- Quality of life and efficiency in Peritoneal Dialysis.
- Technology of Peritoneal Dialysis.
- Methodology of Peritoneal Dialysis.

### **Principles, Technology and Methodology of Transplants (Code 12, ECTS 5)**

- Monitoring of kidney transplant patients.
- Organization of kidney transplants.
- Immunosuppression in kidney transplant.
- Cardiovascular risks in kidney transplant.
- Compatibility in transplant. Incompatible kidney transplant.

**3<sup>rd</sup> Semester, Total ECTS: 30**

**Clinical Training in Hemodialysis (Code 13, ECTS 10)**

**Clinical Training in Peritoneal Dialysis (Code 14, ECTS 10)**

**Clinical Training in Kidney Clinic (Code 15, ECTS 10)**

**4<sup>th</sup> Semester, Total ECTS: 30**

**Clinical Training or Research and preparation of the Master's Thesis (Code 16, ECTS 30).**