**COURSE OUTLINE**

1. **GENERAL**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **SCHOOL** | School of Health Sciences | | | | |
| **ACADEMIC UNIT** | Faculty of Medicine | | | | |
| **LEVEL OF STUDIES** | Undergraduate | | | | |
| **COURSE CODE** | **ΙΑΕ936** | **SEMESTER** | | **I** | |
| **COURSE TITLE** | STEREOTACTIC AND FUNCTIONAL NEUROSURGERY | | | | |
| **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** |
| Lectures | | | 2 | | 2 |
|  | | |  | |  |
|  | | |  | |  |
| *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* | Special Background  Skill development | | | | |
| **PREREQUISITE COURSES:** | NONE | | | | |
| **LANGUAGE OF INSTRUCTION and EXAMINATIONS:** | GREEK | | | | |
| **IS THE COURSE OFFERED TO ERASMUS STUDENTS** | IF REQUESTED (ENGLISH) | | | | |
| **COURSE WEBSITE (URL)** | <https://ecourse.uoi.gr/enrol/index.php?id=2018> | | | | |

1. **LEARNING OUTCOMES**

|  |  |
| --- | --- |
| **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* | |
| Stereotactic and Functional Neurosurgery is a rapid growing field of neurosurgery and is directly related to Neurology, Radiology, Radiotherapy and Psychiatry. Stereotactic and functional neurosurgery deals with several disorders that affect Central and Peripheral Nervous System. Common interventions and indication are deep electrical brain stimulation for movement disorders (tremor, Parkinson's disease, dystonia), chronic pain (trigeminal neuralgia, neuropathic pain), psychiatric disorder such as treatment-resistant depression and Obsessive-Compulsive Disorder and spasticity. Epilepsy surgery is another important field and also stereotactic radiotherapy (γ-knife, cyberknife) for the non-invasive treatment, apart from intracranial tumors (vestibular schwannoma, meningiomas), of Parkinson's disease, trigeminal neuralgia and vascular malformations.  Upon completion of the course students will be able to understand:  (a) the role of stereotactic and functional neurosurgery  (b) the role of imaging and image-guided brain surgery  (c) indications of deep brain stimulation  (d) Indications of epilepsy surgery, surgery for psychiatric disorders and stereotactic radiotherapy. | |
| **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…*  *…….* |
| * Adapt and adjust to new situations * Decision making * Development of new research ideas * Promote creative thinking * Interdisciplinary team work | |

1. **SYLLABUS**

|  |
| --- |
| The content will cover  • Introduction to stereotactic and functional neurosurgery  • The role of imaging (magnetic resonance imaging, positron emission tomography, angiography, Functional Mapping of the Cerebral Cortex)  • Stereotactic systems (Leksell, Richert / Mundinger, Talairach et al.)  • Imaging-guided brain surgery  • Deep brain stimulation (Parkinson's disease and pain)  • stereotactic biopsy  • Epilepsy surgery  • Surgery of psychiatric disorders  • Stereotactic radiotherapy.  The course will include both lectures and visits to the operating theatre. |

1. **TEACHING and LEARNING METHODS - EVALUATION**

|  |  |
| --- | --- |
| **DELIVERY** *Face-to-face, Distance learning, etc.* | Face-to-face |
| **USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY** *Use of ICT in teaching, laboratory education, communication with students* | Use of ICT in teaching, operating theater education, communication with students, use of ecourse |
| **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* | |  |  | | --- | --- | | ***Activity*** | ***Workload of each students group*** | | Lecture | 26 | | Workshops | 2 | | Examinations | 2 | |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | |
| **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.* | The final grade will be calculated based on the result of the final (written) exams with multiple choice questions. |

1. **ATTACHED BIBLIOGRAPHY**

Suggesting reading :

* Alexiou, G., & Voulgaris, S. (2023). Stereotactic and functional neurosurgery [Undergraduate textbook]. Kallipos, Open Academic Editions. https://dx.doi.org/10.57713/kallipos-376

-Journals:

* Stereotactic and Functional Neurosurgery
* Neurosurgery
* Journal of Neurosurgery
* World Neurosurgery