Academic course description – Example

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| BACHELOR ‘S PROGRAMME2ND YEAR OF STUDY, 1ST SEMESTER |

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| **Course title** | **remote sensing and photointerpretation** |
| Course code | JHM2304 |
| Course type | full attendance/ tutorial |
| Course level | 1st cycle (bachelor’s degree) |
| Year of study, semester | 2nd year of study, 1st semester |
| Number of ECTS credits | 4 |
| Number of hours per week | 4 (2 lecture hours + 2 seminar hours) |
| Name of lecture holder | Lecturer Nicolae Aurelian ROMAN |
| Name of seminar holder | Lecturer Nicolae Aurelian ROMAN |
| Prerequisites | Advanced level of English  |
| A | **General and course-specific competences** |
|  | **General competences**:* Acquiring the adequate professional and transversal competencies, according to the specific requirements of the subject and the qualifications listed in the National Index of Higher Education Qualifications (RNCIS) for Hidrology-Meteorology

**Course-specific competences**:* Describes notions, laws, processes and physical phenomena that underlie the obtaining of images in remote sensing and aerial photography with applications in geography
* Use complex programs for remote data acquisition and processing
* Calculate indices for the description of geographical realities starting from data specific to remote sensing
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| B | **Learning outcomes** |
|  | * Analyze complex satellite or aerial images
* Explain geographical realities based on the data specific to the field
* Prepare complex reports based on satellite or aerial images
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| C | **Lecture content** |
|  | General principles. History of remote sensing The characteristics of artificial satellites. Colorimetric spaces Spatio-temporal perception of objects. Sources of satellite and aerial photogrammetric images Image preprocessing. Interpretation of images Spatial segmentation of images Radiometric segmentation of images Analysis of the spatio-temporal dynamics of the territory with the help of remote sensing images Obtaining the numerical model of the terrain starting from images. Integration of satellite images in GIS. Means of disseminating the results of remote sensing projects |
| D | **Recommended reading for lectures** |
|  | 1. Donisă V., Donisă I. (1998) - Dicţionar explicativ de teledetecţie şi sisteme informaţionale geografice, Ed. Junimea, Iaşi.
2. Lillesand Th.M. et al. (2004) - Remote Sensing and Image Interpretation, , Ed. John Wiley & Sons
3. P.A.Longley et al. (2005) – GIS and Science, Ed. John Wiley and Sons.
4. Skrdla M. (1992) - A Guide to Map and Image Processing, Microlmages Press, Nebraska.
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| E | **Seminar content** |
|  | Allocation of individual projects. Acquisition and construction of aerial image databases Fundamental problems and exercises of photogrammetry Global positioning systems. Using GPS. Acquisition, construction and distribution of satellite image databases Preprocessing of satellite imagesImage processing: geometric transformations Image processing: spatial and radiometric filtering Classification of images: unsupervised classifications Classification of images: hybrid and supervised classifications Classification of images: hybrid and supervised classifications Evaluation of individual projects |
| F | **Recommended reading for seminars** |
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| G | **Education style** |
| learning and teaching methods | Lecture, didactic explanation, problematization, heuristic conversation, interactive demonstration, modelling, mapping, case study |
| assessment methods | Performance evaluation + Seminar Grades |
| Language of instruction | English |