| COURSE TITLE | WATER TREATMENT AND PURIFICATION | CODE: GC 5202 |
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| LEVEL (UG-undergraduate/M-master) AND YEAR OF STUDY (1,2,3,4) | M2 | SEMESTER | II | STATUS (CO-COMPULSORY/OP-OPTIONAL) | CO |
|---|---|---|---|---|---|

| NUMBER OF HOURS/ WEEK | | | | TOTAL HOURS/ SEMESTER | TOTAL HOURS OF INDIVIDUAL WORK | CREDITS | EVALUATION TYPE (D-DURING THE SEMESTER, C-COLLOQUIUM, E-EXAM, M-MIXT) | LANGUAGE |
|---|---|---|---|---|---|---|---|---|
| L | S | P | Pr. | | | | | |
| 1 | | 2 | | 36 | 174 | 7 | M | English |

| LECTURER | POSITION, NAME AND SURNAME | DEPARTMENT |
|---|---|---|
| | Teaching Assistant Dan Aștefanei | Geology |

| PREREQUISITES | General Chemistry; Analytical Chemistry; Hydrogeochemistry | |
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| OBJECTIVES | This course aims at familiarising students with the main procedures for treatment and purification of water and will help them apply notions acquired in concrete cases – natural water sources, water analysis, characteristics of water intended for human consumption, characteristics of used water, familiarisation with water treatment and purification installations | |
| COURSE CONTENTS | A. General notions about water:<br>- Physical and chemical characteristics of natural waters<br>- Specifics of the quality of various sources of natural water<br>B. Quality requirements for water for human consumption:<br>- Drinking water<br>- Indicators and chemical properties<br>C. Water treatment procedures:<br>- Current water treatment techniques<br>- Special water treatment techniques<br>- Make-up of water treatment stations – technological diagrams<br>D. Procedures for the treatment of used water:<br>- Used water and its influence on the natural environment<br>- Self-purification<br>- Purification of used water<br>E. Treatment of sludge:<br>- Physical and chemical characteristics of sludge<br>- Procedures for the processing of sludge<br>- Valorisation and final evacuation | |
| PRACTICAL | 1. Analytic and spectrophotometric methods for the analysis of water – description; 2. Determination of chemical consumption of oxygen (CCO); 3. Determination of biochemical consumption of oxygen (CBO5); 4. Determination of temporary hardness; 5. Determination of permanent hardness; 6. Determination of total hardness; 7. Determination of calcium and magnesium | |
| TEACHING METHODS | Exposition, presentation, experimentation | |
| RECOMMENDED READING | Negulescu M., (1982). Protecţia calităţii apelor. Ed. Tehnica, Bucharest.<br>Rojanschi V., Ognean T. (1989). Cartea operatorului din staţii de tratare si epurare a apelor. Ed. Tehnica, Bucharest.<br>Stoianovici S., Robescu D. (1982). Procedee si echipamente mecanice pentru tratarea si epurarea apelor. Ed. Tehnica, Bucuresti.<br>Trofin P. (1983). Alimentari cu apa. Ed. Didactica si Pedagogica, Bucharest. | |
| ASSESSMENT METHODS | Conditions | Fulfilment of professional obligations (course + practical work) |
| | Criteria | Cumulative evaluation |
| | Way of evaluation | Practical test + examination |
| | Formula of the final mark | 0.50 D + 0.30 E + 0.20 P |