

Course Syllabi

1. INGE-00022 QUALITY AND TREATMENT OF SOILS

2. Instructors:

- Sonia Margoth Astudillo Ochoa
- Jaime Estuardo Cuenca Leon

3. Bibliography

- CIENCIAS DE LA TIERRA, EDWARD J. TARBUCK. FEDERICK K. LUTGENS, 2013
- RECURSOS DE LA TIERRA Y EL MEDIO AMBIENTE, JAMES R. CRAIG, DAVID J. VAUGHAN, BRIAN J. SKINNER., 2012
- TECNOLOGIAS DE REMEDIACIÓN PARA SUELOS CONTAMINADOS, TANYA VOLKE SEPULVEDA Y JUAN ANTONIO VELASCO TREJO, 2002

4. Specific Course Information

a. The subject of Quality and Soil Treatment corresponds to the area of professional training of the Chemical Engineering Career the same one that is of a practical theoretical nature. It corresponds to the area of chemical analysis responsible for evaluating different parameters of the soil, to obtain information about this resource. The fields of application of the Analysis are very varied, in the industry the control of quality of raw materials and finished products stands out; in the environmental part it is important to comply with the different parameters in order to preserve or remedy the soils. At the end of the course the student will be able to: Act with leadership, initiative and entrepreneurship. 2. Communicate clearly and effectively through oral, written and technical language necessary for the exercise of his profession. 4. Perform chemical analyses several. 6. Control procedures and field processes in Chemical Engineering. 7. Apply the basic foundations of training research, at the exploratory and diagnostic level. or, in an appropriate way, for the development of experiments, for the search, selection and evaluation of information, preparation of bibliographical essays and academic articles and for the communication of findings. 8. To recognize the value of ancestral knowledge, enabling its incorporation into professional practice, to develop new products, innovate and optimize traditional productive practices. 9. To implement technologies related to the physical and chemical transformation of materials, from 13. Act with respect to and commitment to the environment. 14 Act with professional ethics.

b. Prerequisites:

- INDU-00046 Analytical chemistry soils
- SVCS-00036 Community service
- INDU-00037 Ope III wetting-drying
- INDU-00036 Op III ionic exchange

5. Learning Objectives of the Course

a. The main objective of the subject is to get the student to acquire and assimilate the necessary foundation to achieve the global understanding of what the Quality and Treatment of Soils implies, founded on a solid practical theoretical formation; strengthening the autonomy in decision-making and discipline at work. - Inculcate the student the fundamentals for the realization of the analysis as part of a process either of quality control or contamination in soils for the purpose of ograde reliable measurements and reliable results - Teach the student to work as a team to share responsibilities, as well as organizational and cooperation strategies. - Inculcate the habit of permanent study of the

subject and encourage the search for new knowledge.

b. Learning Outcomes

1. Apply technologies for soil remediation.
2. Know and evaluate soil contaminants as well as quality criteria.
3. Assess the importance of soil recovery using different remediation techniques

6. Course Topics

1. Soil quality
2. Soil pollution.
3. Treatment technologies