

ENGINEERING FOR SAFETY OF CRITICAL INDUSTRIAL AND CIVIL

(Lecce - Università degli Studi)

Teaching ASSESSMENT OF GEOTECHNICAL RISKS

GenCod A007230

Owner professor Corrado FIDELIBUS

Teaching in italian ASSESSMENT OF GEOTECHNICAL RISKS

Teaching ASSESSMENT OF GEOTECHNICAL RISKS

SSD code ICAR/07

Reference course ENGINEERING FOR SAFETY OF CRITICAL INDUSTRIAL AND

Course type Laurea Magistrale

Credits 9.0

Teaching hours Front activity hours: 81.0

For enrolled in 2024/2025

Taught in 2024/2025

Course year 1

Language ENGLISH

Curriculum CIVIL INFRASTRUCTURES

Location Lecce

Semester Second Semester

Exam type Oral

Assessment Final grade

Course timetable

<https://easyroom.unisalento.it/Orario>

BRIEF COURSE DESCRIPTION

1. The probabilistic approach as opposed to the old "Factor of Safety" method;
2. Review of the uncertainty sources in geotechnical design;
3. Essential statistical theories for probabilistic analyses;
4. Examples of consolidated probabilistic methods of analysis in geotechnical engineering;
5. Introduction to numerical methods for probabilistic analyses, like stochastic FEM

REQUIREMENTS

Basic knowledge of geotechnical engineering and statistics

COURSE AIMS

The aim of the course is to provide the necessary tools for carrying out basic risk analyses concerning geotechnical projects. Covered topics include probability, reliability, and risk fundamentals and the application of reliability and reliability updating to shallow and deep foundations, artificial and natural slopes, and excavations. Lectures on the theoretical background are accompanied by hands-on exercises and descriptions of state-of-the-art applications.

TEACHING METHODOLOGY

Oral lessons and exercises

ASSESSMENT TYPE

Oral examinations

ASSESSMENT SESSIONS

See official website

FULL SYLLABUS

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2. Review of the uncertainty sources in geotechnical design;
3. Essential statistical theories for probabilistic analyses;
4. Examples of consolidated probabilistic methods of analysis in geotechnical engineering;
5. Introduction to numerical methods for probabilistic analyses, like stochastic FEM

REFERENCE TEXT BOOKS

Gregory B. Baecher, John T. Christian, Reliability and Statistics in Geotechnical Engineering, Wiley