



Career Program Area: Soil Science Specialist

Specific Rules

1. Each team consists of three members. The participants will compete both individually and as a team.
2. In the event of a tie for individuals, three preselected questions from the written exam will be asked and continue in the same sequence until a winner emerges. For teams the first criteria will be the highest team score and if still tied, the second criteria will be the same three preselected questions used to break individual ties as above.
3. Participants need to provide their own calculator and 2 No. 2 pencils and erasers. Participants are encouraged to bring their own Internet devices (phone, tablet, laptop). While every attempt will be made to have Wi-Fi available, it cannot be guaranteed

Procedures

The Soils Specialist Career Program area is divided into three parts:

- **PART I, WRITTEN EXAM:** Team members will work individually on a written test that will consist of 100 questions pertaining to: soil physical properties & classifications, genesis and morphology soils, soil conservation and fertility, sampling and testing. Participants will have 1 hour to complete the exam.
- **PART II, IDENTIFICATION:** Working as individuals, students will examine two soil prepared monoliths. They will evaluate the physical properties of the monoliths including, but not limited to: texture, structure, color, drainage, formation, and suitability for various uses. Aids such as water, organic matter cards, Munsell Books, paper towels, etc. will be provided for student use. Students will have 30 minutes to complete this activity.
- **PART III, CASE STUDY:** Working with two other teammates, students will be given two separate Case Studies to study and answer. Each Case Study may include: Fertility calculations, lime calculations, land use recommendation, soil survey usage, water management, nutrient management, and soil conservation. Teams will be provided with resources needed to solve each problem, such as soil surveys, soil test reports, photos, maps, etc. Teams will submit their written solutions to each problem, along with other contest materials provided. Calculators may be used. Teams will have one hour to complete this activity.

Performance Evaluation

Each participant will be evaluated in each of the three activity areas:

Individual

- Written Examination (multiple choice questions) – 100 points
- Monolith/Core Identification – 100 points
- Case Study – 100 points (team)
- **TOTAL POINTS POSSIBLE – 300 POINTS**

Team

- Average of three individual written exams – 100 points
- Average of three individual ID scores – 100 points
- Team, Case Study – 100 points
- **TOTAL POINTS POSSIBLE – 300 POINTS**

Suggested References and Supplements

- **The Nature and Properties of Soils**, 14th edition – Brady and Weil, Pearson/Prentice Hall publishers, ISBN-13: 978-0-13-227938-3
- **Soil Science and Management**, 5th edition – Plaster, Delmar/Cengage Learning publishers, ISBN13; 978-1-4180-3865-6
- Website: www.nrcs.usda.gov