

M.Sc. (Ag) SOIL SCIENCE and AGRICULTURAL CHEMISTRY

SSC 611. SOIL GENESIS, TAXONOMY AND SURVEY (2+1)

Course Outcomes

- Students learn to recognise and explain soil genetic pathways from knowledge gained through soil forming factors and processes.
- Students demonstrate skills for interpreting soil profiles from different soil orders learnt.
- Students develop individual skills and ability to classify a soil according to USDA system.
- Students evaluate the effect of soil genesis on land use and take management decisions to fit into the framework of different agro ecosystem.

SSC 612: ANALYTICAL TECHNIQUES IN SOIL AND PLANT ANALYSIS AND ISOTOPES IN AGRICULTURAL RESEARCH (2 + 1)

Course Outcomes

- Students will have a firm foundation in the fundamentals and application of analytical techniques in scientific research
- Students will be able to design and carry out scientific experiments as well as accurately record and analyze the results obtained from such experiments
- Students will be able to clearly communicate the results of scientific work in oral , written and electronic formats to others

SSC 613 – SOIL PHYSICS (1+1)

Course Outcomes

- Students would gain a clear understanding on understood the various concepts of soil physics
- Students would understand the various physical properties of soil like Soil texture, Structure, Moisture and Temperature
- Students are exposed to gain skills on management of various soil physical constraints and their management.

SSC 621 SOIL FERTILITY, FERTILIZER TECHNOLOGY AND USE (2+1)

Course Outcomes

- Students learn the importance of soil fertility as a factor controlling plant growth.
- Students learn the different pathways of transformation each nutrient undergoes in soil, their sources and function in plant growth.
- Students gain skills on fertilizer management for higher benefit- cost ratio and higher use efficiency.
- Students develop the ability to evaluate soil fertility status through different modern approaches for fertilizer recommendation.

SSC 622. SOIL CHEMISTRY (2+1)

Course Outcomes

- The students gain in-depth knowledge on soil chemistry, ion exchange reactions & law of mass action.
- Students acquaint themselves on electro-chemistry, clay minerals and soil colloids
- Students get familiarize with the importance of organic matter in improving soil fertility
- Students become competent of conducting research in areas of nutrient fixation and problems of submerged soils.

SSC 623 REMOTE SENSING AND GIS APPLICATION IN SOIL AND CROP STUDIES (2+1)

Course Outcomes

- Students would have understood the principles and components of remote sensing
- Students would have mastered the art of data acquisition of satellite images and their characteristics
- Students would have gained knowledge on the concepts and fundamentals of GIS
- Students would have developed a conceptual understanding on the knowledge of remote sensing and GIS in soil and plant studies

SSC 624. SOIL DEGRADATION, PROBLEM SOILS AND WATER (2+1)

Course Outcomes

- Students gain knowledge on soil erosion and conservation.
- Students achieve scientific knowledge on land degradation management, concept of watersheds and their management.
- Students can technically manage physically degraded soils
- Scholars can gain knowledge on acidic soils and their management and improve their health towards sustainability.
- Scholars can handle and technically know, how to manage salt affected soils and to maintain irrigation water quality.

OPC-SSC 711. SOIL, WATER AND AIR POLLUTION (2+1)

Course Outcomes Scholars gain knowledge on environmental pollution and conservation.

- Students understand the methods of abatement of various types of pollution towards a safe environment.
- Scholars will be able to communicate the ill-effects of environmental pollution to farmers.

GOPC-SSC 712. Soil -Health Management (2+1)

Course Outcomes

- Scholars achieve practical knowledge on soil related constraints and management.
- Scholars gain knowledge on irrigation water quality and their management
- Scholars become professionals in handling tools on soil health maintenance.