NPTEL Video Course - Agriculture - NOC: GIS in Ag-Essentials and Applications (GIS)

Subject Co-ordinator - Dr. Venkataraman Balaji, Dr. R. Nagarajan

Co-ordinating Institute - IIT - Kanpur

Sub-Titles - Available / Unavailable  |  MP3 Audio Lectures - Available / Unavailable

Lecture 1 - Introduction
Lecture 2 - Our Agriculture Practices and Lessons
Lecture 3 - Climate and Scale of Change
Lecture 4 - Course Corrections
Lecture 5 - Modified Agriculture - Precision Agriculture
Lecture 6 - Modified Agriculture Practice - Climate Smart Agriculture
Lecture 7 - Maps and Information in Practice
Lecture 8 - Geographical Information System (GIS)
Lecture 9 - Types of input
Lecture 10 - Analysis - Map overlay
Lecture 11 - Buffering and Perspective View
Lecture 12 - GIS Type and Available GIS Softwares
Lecture 13 - Village Cadastral Map and Property Card
Lecture 14 - Cadastral Maps and Contents
Lecture 15 - Creation of Cadastral Information Base
Lecture 16 - Land Information System
Lecture 17 - Creation of Village Boundary Based Basin Analysis
Lecture 18 - Village Information System
Lecture 19 - Needs and Weather Forecast
Lecture 20 - Cloud Types and Rain Bearing Clouds
Lecture 21 - Weather Satellites and Cloud Pattern Reading
Lecture 22 - Rainfall and Supplementary Irrigation
Lecture 23 - Synergistic Use
Lecture 24 - Surface Rainfall - Run off Assessment and Model
Lecture 25 - Soil and Water Assessment Tools (SWAT) Model
Lecture 26 - Groundwater Availability
Lecture 27 - Groundwater Potential Mapping
Lecture 28 - Water Storage and Water Availability and Release
Lecture 29 - Growth of Crop Area in Command Area and Impact Climate Change

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Lecture 30 - Impact of Climate on Agriculture
Lecture 31 - Crop Water Requirement and Distribution Loss
Lecture 32 - Village Agriculture and Other Water Demand and Supply Source
Lecture 33 - Water Security Assessment
Lecture 34 - Land Degradation
Lecture 35 - Water Logging
Lecture 36 - Water Balance Under Different Rainfall
Lecture 37 - Drought and Characteristics
Lecture 38 - Drought Vulnerability and Risk Assessment
Lecture 39 - Monitoring and Warning
Lecture 40 - Drought Monitoring
Lecture 41 - Drought Risk and Vulnerability Assessment
Lecture 42 - GIS in Sustainable Agriculture
Lecture 43 - Assessment of Existing Water Storage Structures and Rehabilitation
Lecture 44 - Sustainable Development and Agriculture
Lecture 45 - Climate Change and Drought
Lecture 46 - GIS and Drought Management
NPTEL Video Course - Agriculture - NOC: Integrated Pest Management (IPM)

Subject Co-ordinator - Prof. M. Bheemanna, Prof. B.V. Patil, Prof. Prabhuraj A

Co-ordinating Institute - IIT - Kanpur

Sub-Titles - Available / Unavailable | MP3 Audio Lectures - Available / Unavailable

Lecture 1 - Introduction
Lecture 2 - Insect, abundance and diversity
Lecture 3 - Insect classification based on economic importance
Lecture 4 - Pest, causes for outbreaks and categories
Lecture 5 - Pest, causes for outbreaks and categories (Continued...)
Lecture 6 - Pest surveillance and methods of sampling
Lecture 7 - Principles of Pest Management and History
Lecture 8 - IPM, Definition and Concepts
Lecture 9 - Ecological Methods of Pest Management - Legal and Cultural
Lecture 10 - Ecological Methods of Pest Management - Cultural (Continued...)
Lecture 11 - Ecological Methods of Pest Management - Cultural (Continued...)
Lecture 12 - Ecological Methods of Pest Management - Physical
Lecture 13 - Ecological Methods of Pest Management - Mechanical
Lecture 14 - Host Plant Resistance
Lecture 15 - Host Plant Resistance (Continued...)
Lecture 16 - Biological Control - Predators
Lecture 17 - Biological Control - Parasitoids
Lecture 18 - Biological Control - Microbes
Lecture 19 - Biological Control - Microbes
Lecture 20 - Pest management by modifying insect behaviour
Lecture 21 - Use of sex pheromones in pest management
Lecture 22 - Use of attractants and repellants in pest management
Lecture 23 - Pest management through radiation technology - Principles
Lecture 24 - Sterile Insect Technique - case studies
Lecture 25 - Pest management through botanicals
Lecture 26 - Pest management through botanicals (Continued...)
Lecture 27 - Chemical Control - History and classification
Lecture 28 - Mode of Action of different insecticide groups
Lecture 29 - Chemical Control - Considerations for Chemicals Integration

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Lecture 30 - Insecticide Resistance and Management
Lecture 31 - Insecticide as component of IPM
Lecture 32 - Biotechnological Approaches in IPM
Lecture 33 - Agro-ecosystem Analysis
Lecture 34 - IPM in Paddy
Lecture 35 - IPM in Paddy (Continued...)
Lecture 36 - IPM in Pigeon pea
Lecture 37 - IPM in Pigeon pea (Continued...)
Lecture 38 - IPM in Groundnut
Lecture 39 - IPM in Mustard and Soyabean
Lecture 40 - IPM in Cotton
Lecture 41 - IPM in Cotton (Continued...)
Lecture 42 - IPM in Sugarcane
Lecture 43 - IPM in Sugarcane (Continued...)
Lecture 44 - IPM in Tomato
Lecture 45 - IPM in Cabbage
Lecture 46 - IPM in Mango
Lecture 47 - IPM in Grapes
NPTEL Video Course - Agriculture - NOC:Nutrition, Therapeutics and Health (NM)

Subject Co-ordinator - Dr. V. Vijaya Lakshmi (Instructor Incharge)

Co-ordinating Institute - IIT - Kanpur

Sub-Titles - Available / Unavailable | MP3 Audio Lectures - Available / Unavailable

Lecture 1 - Introduction
Lecture 2 - Relationship between Food, Nutrition and Health 1
Lecture 3 - Relationship between Food, Nutrition and Health 2
Lecture 4 - Digestion, absorption and utilization of Nutrients 1
Lecture 5 - Digestion, absorption and utilization of Nutrients 2
Lecture 6 - Recommended dietary allowances
Lecture 7 - Carbohydrate
Lecture 8 - Fiber
Lecture 9 - Protein
Lecture 10 - Protein - health significance
Lecture 11 - Fat
Lecture 12 - Energy 1
Lecture 13 - Energy 2
Lecture 14 - Energy 3
Lecture 15 - Fat Soluble Vitamins 1
Lecture 16 - Fat Soluble Vitamins 2
Lecture 17 - Fat Soluble Vitamins 3
Lecture 18 - Water Soluble Vitamins 1
Lecture 19 - Water Soluble Vitamins 2
Lecture 20 - Water soluble Vitamins 3
Lecture 21 - Water soluble Vitamins 4
Lecture 22 - Major minerals 1
Lecture 23 - Major minerals 2
Lecture 24 - Trace minerals 1
Lecture 25 - Trace minerals 2
Lecture 26 - Water
Lecture 27 - Nutritional Disorders
Lecture 28 - Balanced diet and food groups
Lecture 29 - Food guide for selecting adequate diet, practical aspects of food selection

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NPTEL Video Course - Agriculture - NOC: Weather Forecast in Agriculture and Agro-advisory (WF)

Subject Co-ordinator - Dr. R. Nagarajan, Co Faculty, Dr.T.N.Balasubramanian (Rtd.), Instructor Incharge

Co-ordinating Institute - IIT - Kanpur

Sub-Titles - Available / Unavailable | MP3 Audio Lectures - Available / Unavailable

Lecture 1 - Introduction
Lecture 2 - Basic aspects of Atmosphere, Climate, Weather
Lecture 3 - Basic aspects of Rainfall and their application in crop production
Lecture 4 - Basic aspects of Temperature and their application in crop production
Lecture 5 - Basic aspects of Relative humidity, Cloud cover and their application in crop production
Lecture 6 - Basic aspects of wind, wind direction and their application in crop production
Lecture 7 - Three weather codes and crop production
Lecture 8 - Crop production risks and their management
Lecture 9 - Weather sensitive crops, stages and farm operations
Lecture 10 - Crop-weather interactions and definition
Lecture 11 - Crop-Weather Interactions
Lecture 12 - Crop-Weather Interactions
Lecture 13 - Crop-Weather Interactions
Lecture 14 - Crop-Weather Interactions
Lecture 15 - Crop-Weather Interactions
Lecture 16 - Genesis of weather forecast in India and Abroad
Lecture 17 - Types of weather forecast and details
Lecture 18 - Types of weather forecast and details (Continued...)
Lecture 19 - Simple methods of verification of weather forecast with real event
Lecture 20 - Traditional knowledges on weather forecast and their validity
Lecture 21 - Weather thumb rules and their validity
Lecture 22 - Development and component of agro advisory for weather forecast
Lecture 23 - Development and component of agro advisory for weather forecast (Continued...)
Lecture 24 - Model agro advisories for selected five days weather forecast
Lecture 25 - Mass communication mode of agro advisories and their effectiveness
Lecture 26 - Discussion on weather forecast and agro advisory from different website
Lecture 27 - Role of climate manager on farm management decision based on weather forecast at village level and assignment
Lecture 28 - Development of selected weather window for issuing agro advisory - case study from Tamil Nadu
Lecture 29 - Model of agro advisory for 54 selected weather window of Tamil Nadu for rice

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Lecture 30 - Response farming – a type of farm planning being practiced in Australia considering seasonal climate
Lecture 31 - Case study in India on the adoption of weather based crop production – Crop management
Lecture 32 - Case study in India on the adoption of weather based crop production – Pest and disease management
Lecture 33 - Case study in India on the adoption of weather based animal production
Lecture 34 - Cost benefit analysis for the case study done on crop management
Lecture 35 - Cost benefit analysis for the case study done on animal management
Lecture 36 - Summary
NPTEL Video Course - Agriculture - NOC:ICT Basics

Subject Co-ordinator - Prof. T.V. Prabhakar

Co-ordinating Institute - IIT - Kanpur

Sub-Titles - Available / Unavailable | MP3 Audio Lectures - Available / Unavailable

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Lecture 2 - Highlights Week 0 and 1
Lecture 3 - What is ICT?
Lecture 4 - Architecture of a Computer
Lecture 5 - Architecture of a Phone
Lecture 6 - What is the Internet?
Lecture 7 - What is WWW?
Lecture 8 - Highlights Week 2
Lecture 9 - Phones, Smart Phones, Phablets, Tablets
Lecture 10 - Introduction to Android
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Lecture 12 - Network Architectures - Part-2 (Overview of Network Architecture)
Lecture 13 - Network Architectures - Part-3 (Architecture of Internet)
Lecture 14 - Mobile Wireless Communications - Introduction (Module-1)
Lecture 15 - Mobile Wireless Communication (Module-2)
Lecture 16 - Highlights Week 3
Lecture 17 - Adaptive and Responsive Websites
Lecture 18 - Data management
Lecture 19 - Knowledge Representation
Lecture 20 - Knowledge Representation Techniques
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Lecture 22 - Highlights Week - 4
Lecture 23 - Speech Recognition
Lecture 24 - Speech Synthesis
Lecture 25 - Identity Management - Part 1
Lecture 26 - Identity Management - Part 2
Lecture 27 - Location Recognition - Part 1
Lecture 28 - Location Recognition - Part 2
Lecture 29 - Parameter Sensing

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Lecture 36 - 3G WCDMA (Module-3)  
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Lecture 41 - Introduction to Cloud Computing  
Lecture 42 - Introduction to Cloud Services  
Lecture 43 - Cloud Service Providers  
Lecture 44 - GIS Application in Agriculture - Part 1  
Lecture 45 - GIS Application in Agriculture - Part 2
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NPTEL Video Course - Agriculture - NOC:Momentum Transfer in Process Engineering

Subject Co-ordinator - Prof. Tridib Kumar Goswami
Co-ordinating Institute - IIT - Kharagpur

Sub-Titles - Available / Unavailable | MP3 Audio Lectures - Available / Unavailable

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Lecture 12 - Application of Navier Stokes equation for finding out viscosity - Part 3
Lecture 13 - Flow through pipes
Lecture 14 - Hagen-Poiseuille equation from Navier stokes equation
Lecture 15 - Fanning friction factor
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Lecture 17 - Laminar and turbulent flow in a pipe
Lecture 18 - Flow through flat and parallel plates
Lecture 19 - Flow of film or film flow
Lecture 20 - Problems and solution of falling film
Lecture 21 - Flow through annulus - Part 1
Lecture 22 - Flow through annulus - Part 2
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Lecture 24 - Flow through flat plates or slits
Lecture 25 - Problems and solution for flow through flat plates or slits
Lecture 26 - Compressible fluid flow
Lecture 27 - Flow through nozzle - I
Lecture 28 - Flow through nozzle - II
Lecture 29 - Flow through nozzle - problems and solutions

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NPTEL Video Course - Agriculture - NOC: Farm Machinery

Subject Co-ordinator - Prof. VK Tewari

Co-ordinating Institute - IIT - Kharagpur

Sub-Titles - Available / Unavailable | MP3 Audio Lectures - Available / Unavailable

Lecture 1 - Importance of Farm Machines in the Contest of Enhance Production, Multiple Cropping, Labour Scarcity etc.
Lecture 2 - Ploughing and first opening of the soil, the design and component details
Lecture 3 - Tractor, implement and soil force consideration for tillage implement design
Lecture 4 - Tractor, implement and soil force consideration for tillage implement design
Lecture 5 - Mechanics of rotavator or rotary tillers
Lecture 6 - Design of a tractor PTO operated rotavator
Lecture 7 - Tractor implement hitching systems
Lecture 8 - Mechanics of tractor implement hitch system and traction prediction models
Lecture 9 - Laboratory class on traction and tire testing
Lecture 10 - Combination tillage implements for efficient land preparation
Lecture 11 - LASER guided land laveller
Lecture 12 - Introduction of seeding operation
Lecture 13 - Types of seed metering devices and their operation
Lecture 14 - Types of fertilizer metering, furrow opening and soil covering devices
Lecture 15 - Equipment for seeding and planting
Lecture 16 - Equipment for precision planting
Lecture 17 - Equipment for Paddy Transplanting
Lecture 18 - Microcontroller based uniform seed rate application system
Lecture 19 - GPS based automatic Variable rate fertilizer applicator
Lecture 20 - Embedded GPS integrated Variable Rate Fertilizer Applicator
Lecture 21 - Design of a seeding equipment - PART 1
Lecture 22 - Design of a seeding equipment - PART 2
Lecture 23 - Design of a seeding equipment - PART 3
Lecture 24 - Design a tractor drawn seed drill for a 40 hp tractor - I
Lecture 25 - Design a tractor drawn seed drill for a 40 hp tractor - II
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Lecture 32 - Farm machines for interculture operation
Lecture 33 - Performance of weeding blades of a push-pull weeder
Lecture 34 - Advanced level machinery for inter and intra row weeding
Lecture 35 - Tractor mounted contact type microcontroller based improved variable rate herbicide applicator
Lecture 36 - Design of manually operated weeding equipment
Lecture 37 - Plant protection equipment/machinery
Lecture 38 - Selection and design of plant protection equipment/machinery
Lecture 39 - Manually operated knapsack-cum-boom sprayer
Lecture 40 - Performance evaluation of sprayer
Lecture 41 - Testing and certification of spraying equipment
Lecture 42 - Problems based on the design and selection of spraying equipment - I
Lecture 43 - Problems based on the design and selection of spraying equipment - II
Lecture 44 - Advanced level spraying equipment
Lecture 45 - Advanced level spraying equipment
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Lecture 47 - Machines for harvesting cereal crops, root and fruit crops
Lecture 48 - Combine Harvester
Lecture 49 - Advanced technology approach for cotton harvesting
Lecture 50 - Hreshing operation and equipment
Lecture 51 - Design of threshing equipment
Lecture 52 - Performance evaluation and testing of thresher
Lecture 53 - Conservation Agriculture
Lecture 54 - Materials for construction of farm machinery
Lecture 55 - Machinery for Land Drainage, Land Reclamation and Estate Maintenance Part - I
Lecture 56 - Machinery for Land Drainage, Land Reclamation and Estate Maintenance Part - II
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Lecture 59 - Machinery Selection and Management - Part 2
Lecture 60 - Epilogue
NPTEL Video Course - Agriculture - NOC: Irrigation and Drainage

Subject Co-ordinator - Prof. Damodhara Rao Mailapalli

Co-ordinating Institute - IIT - Kharagpur

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Lecture 7 - Evapotranspiration
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Lecture 54 - Economics of drainage project
Lecture 55 - Tutorial
Lecture 56 - Case study of drainage system
Lecture 57 - Drainage Model
Lecture 58 - Irrigation Efficiency
Lecture 59 - Irrigation Economics
Lecture 60 - Irrigation model
NPTEL Video Course - Agriculture - NOC: Soil and Water Conservation Engineering

Subject Co-ordinator - Prof. Rajendra Singh
Co-ordinating Institute - IIT - Kharagpur

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Lecture 41 - Drop Inlet Spillway Design - I
Lecture 42 - Numerical Problems
Lecture 43 - Ogee Spillway
Lecture 44 - Chute Spillway
Lecture 45 - Chute Spillway Design - I
Lecture 46 - Chute Spillway Design - II
Lecture 47 - Energy Dissipation
Lecture 48 - Wind Erosion and Control Basics
Lecture 49 - Design of Wind Breaks
Lecture 50 - Design of Shelterbelts
Lecture 51 - Formation of Sand Dunes
Lecture 52 - Stabilization of Sand Dunes
Lecture 53 - Land Capability Classes
Lecture 54 - Improving Land Capability
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Lecture 56 - Sediment Sampling
Lecture 1 - Preamble of the Subject
Lecture 2 - What is Food and Nutrients
Lecture 3 - Nutritional Value of the Nutrients
Lecture 4 - Best Way of Storage of Food Materials
Lecture 5 - Preservation Techniques
Lecture 6 - Temperature Quotient and Its Impact
Lecture 7 - Food Additives
Lecture 8 - Quality of Food
Lecture 9 - Quality of Food (Continued...)
Lecture 10 - Emerging Technology
Lecture 11 - Emerging Technology (Continued...)
Lecture 12 - Food Laws - Why?
Lecture 13 - Food Laws of India
Lecture 14 - Standards in India
Lecture 15 - Hygiene and Other Controls in India
Lecture 16 - Physico-Chemical Properties of Milk
Lecture 17 - Milk - What is it
Lecture 18 - Milk - How it looks?
Lecture 19 - Milk - Constituents
Lecture 20 - Constituents of Milk
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Lecture 22 - Milk Fat (Continued...)
Lecture 23 - Milk Fat (Continued...)
Lecture 24 - Milk Fat (Continued...)
Lecture 25 - Protein
Lecture 26 - Protein (Continued...)
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Lecture 30 - Casein Micelle
Lecture 31 - Whey Protein
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Lecture 33 - Lactoferrin
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Lecture 36 - Enzymes in Milk
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Lecture 38 - Extrinsic Factors for Microbial Growth
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Lecture 41 - Milk Pasteurization
Lecture 42 - Thermal Death Time
Lecture 43 - Pasteurization Effectiveness
Lecture 44 - Milk Pasteurization and Homogenization
Lecture 45 - Milk Pasteurization and Homogenization (Continued...)
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Lecture 48 - Types of Available Milk
Lecture 49 - Types of Available Milk in the Market
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Lecture 52 - Cheddar Cheese
Lecture 53 - Ice Cream
Lecture 54 - Process of Ice Cream Preparation
Lecture 55 - Ice Cream Lollies
Lecture 56 - Over Run and Calculation for Preparing Ice Cream Mix
Lecture 57 - Transportation of Ice Cream vis a vis Frozen Foods
Lecture 58 - Packaging of Food Materials
Lecture 59 - Modified Atmosphere Packaging
Lecture 60 - Flow Chart for Manufacturing Some Dairy and Food Products
Lecture 30 - Crop planning and rotation design in organic system
Lecture 31 - Crop planning and rotation design in organic system (Continued...)
Lecture 32 - Integrated Farming System and Urban Agriculture
Lecture 33 - Quality of Organic Food
Lecture 34 - Natural Sources of Antioxidants for Health Defense
Lecture 35 - Antioxidant Capacity of fruits and vegetables
Lecture 36 - Organic Food and Human Health
Lecture 37 - Organic Standard
Lecture 38 - Organic Certification Process
Lecture 39 - Operational Structure of Organic Certification
Lecture 40 - Marketing of Organic Products
NPTEL Video Course - Agriculture - NOC: Novel Technologies for Food Processing and Shelf Life Extension

Subject Co-ordinator - Prof. Hari Niwas Mishra

Co-ordinating Institute - IIT - Kharagpur

Sub-Titles - Available / Unavailable | MP3 Audio Lectures - Available / Unavailable

Lecture 1 - Course Introduction; Food Constituents and Functions
Lecture 2 - Quality and Safety Aspects of Food
Lecture 3 - Factors Affecting Quality During Processing and Storage
Lecture 4 - Role of Water in Food and its Shelf Life
Lecture 5 - Gelatinization and Retrogradation of Starch
Lecture 6 - Browning Reactions
Lecture 7 - Food Proteins
Lecture 8 - Principles of Food Preservation
Lecture 9 - Traditional Food Preservation Technologies - Part 1
Lecture 10 - Traditional Food Preservation Technologies - Part 2
Lecture 11 - High Pressure Processing of Food - Part 1
Lecture 12 - High Pressure Processing of Food - Part 2
Lecture 13 - Membrane Technology - Part 1
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Lecture 16 - Food Irradiation - Part 2
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Lecture 18 - Radio Frequency Drying
Lecture 19 - Super Critical Fluid Extraction - Part 1
Lecture 20 - Super Critical Fluid Extraction - Part 2
Lecture 21 - Freeze Drying - Part 1
Lecture 22 - Freeze Drying - Part 2
Lecture 23 - Food Extrusion Technology - Part 1
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Lecture 25 - Textured Vegetable Protein (TVP)
Lecture 26 - Aseptic Processing and Packaging
Lecture 27 - Hurdle Technology
Lecture 28 - Natural Antimicrobials
Lecture 29 - Food Lipids

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Lecture 30 - Extraction of Oil - Part 1
Lecture 31 - Extraction of Oil - Part 2
Lecture 32 - Refining of Oil - Part 1
Lecture 33 - Refining of Oil - Part 2
Lecture 34 - Modified Fats
Lecture 35 - Rancidity
Lecture 36 - Natural Antioxidants
Lecture 37 - Microencapsulation - Part 1
Lecture 38 - Microencapsulation - Part 2
Lecture 39 - Food nanotechnology
Lecture 40 - Respiration and Ripening
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Lecture 42 - Active Packaging Technology
Lecture 43 - Edible coating technology
Lecture 44 - Multiproduct CA/MA Storage Unit
Lecture 45 - Grain Storage
Lecture 46 - Ozonation of Food Grains
Lecture 47 - Hyper Spectral Imaging for Quality Analysis of Food Grains
Lecture 48 - Non-Destructive Methods for Analysis of Grain Quality
Lecture 49 - Detection of Spoilage in Grains using Biosensors
Lecture 50 - Food Fortification
Lecture 51 - Iron Fortified Rice (IFR)
Lecture 52 - Nutri Dal and Fortified Noodles
Lecture 53 - High Energy RTE Food Paste - Part 1
Lecture 54 - High Energy RTE Food Paste - Part 2
Lecture 55 - Functional Foods and Nutraceuticals
Lecture 56 - Algae Based Health Foods
Lecture 57 - Gluten Free Bread and Pasta
Lecture 58 - Food Powder and Premixes
Lecture 59 - GMP/GHP in Food Industry
Lecture 60 - FCTL R&D and Course Summary
NPTEL Video Course - Agriculture - NOC: Soil Science and Technology

Subject Co-ordinator - Prof. Somsubhra Chakraborty

Co-ordinating Institute - IIT - Kharagpur

Sub-Titles - Available / Unavailable | MP3 Audio Lectures - Available / Unavailable

Lecture 1 - Basic Overview of Soil
Lecture 2 - Weathering and Soil Formation
Lecture 3 - Weathering and Soil Formation (Continued...)
Lecture 4 - Weathering and Soil Formation (Continued...)
Lecture 5 - Weathering and Soil Formation (Continued...)
Lecture 6 - Oil Taxonomy and Classification
Lecture 7 - Soil Taxonomy and Classification (Continued...)
Lecture 8 - Soil Taxonomy and Classification (Continued...)
Lecture 9 - Soil Orders, Soil Colour and Texture
Lecture 10 - Soil Texture and Structure
Lecture 11 - Soil Tillage and Soil Density
Lecture 12 - Soil Porosity and Consistency
Lecture 13 - Soil Consistency and Soil Water
Lecture 14 - Soil Water
Lecture 15 - Tutorial
Lecture 16 - Soil Water Movement
Lecture 17 - Qualitative Description of Soil Wetness
Lecture 18 - Soil Air
Lecture 19 - Soil Temperature
Lecture 20 - Tutorial
Lecture 21 - Silicate Clays
Lecture 22 - Silicate Clays (Continued...)
Lecture 23 - Sources of Charges in Soil
Lecture 24 - Cation Exchange Capacity (CEC)
Lecture 25 - Sorption of Pesticides
Lecture 26 - Diffuse Double Layer
Lecture 27 - Adsorption Isotherms
Lecture 28 - Soil Acidity
Lecture 29 - Soil Salinity and Alkalining

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