AKS UNIVERSITY, SATNA (M.P.)

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Document Title

Programme wise list of Programme Broacher, Notice of Value-added Course

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THE UNIVERSITY WITH DIFFERENCE

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This is to certify that this document ''Programme wise list of Programme Broacher, Notice of Value-added Course", contains 324 No. of pages; the first and the last page are signed by the undersigned.

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Department of Electrical Engineering

Value Added Course

IoT application in Smart city

Registrar
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Value Added Program-IOT application in Smart city

Course Details

Course Name: IoT application in Smart city
Course Code:
Contact Hours : 6 weeks 40 Hours (30 Hours Teaching + 10 Hours of Workshop)
Duration : 12th october, 2022 to 21st november, 2022
Students Strength: 78

Importance of Course

Smart cities are a technical solution to help city officials meet urban planning goals. Learn how IoT provides the foundation for smart cities and how connected solutions can help officials prove their impact and improve the lives of citizens.

Course Objective:

India predicted that by 2050, about 70% of the world's population will live in urban areas. This rapid urbanization will put enormous pressure on city officials to ensure their infrastructure can handle the demands of a growing population. Without control over air quality, energy, transportation, building systems, and other critical facets of urban life, city officials will struggle to gather the data they need to improve infrastructure, implement smarter regulations, and foster a high quality of life. The idea of a "connected" or smart city changes that.

Course Description:

The Internet of Things (IoT) is a field of study that covers physical objects that have sensors, processing ability, software and other technologies that connect and exchange data with other such devices over the internet or other communication networks. Arduino is an open-source electronics platform that is based on easy-to-use hardware and software. This programming course introduces you to the basics of Arduino and explains how to use Python.

Course Contents:

Module 1 Interoperability and Arduino

- Interoperability and Arduino Programming-In this module ,we will introduced to interoperability in the internet of things(IoT).You will also be introduced to the basics of Arduino programming and the integration of sensor and actuators with the Arduino platform

Module 2 Python Programming and Rasberry Pi

- In this module, You will be introduced to the python Programming language ,you will also be introduced to Raspberry Pi,its importance in the development of internet of things and the implementation of IoT with Respberry

Module 3

- Arduino communication with different sensors and application to develop a smart city

Main Objectives for Students:

- Promote Economic Development:

Smart cities aim to boost economic growth by creating an environment conducive to business, innovation, and investment. This includes attracting industries, startups, and job opportunities.

- Improve Quality of Life:

Smart cities prioritize residents' well-being. They enhance public services, healthcare, education, and safety. Technology-driven solutions improve daily life for citizens.

- Generate Employment:

By fostering economic growth and attracting businesses, smart cities create employment opportunities. Job creation benefits both skilled professionals and marginalized communities.

- Increase Income Equity:

Smart cities strive to reduce income disparities. They focus on inclusive development, ensuring that benefits reach all segments of society, especially those in need.

- Sustainable Growth:

Smart cities balance growth with environmental conservation. They adopt eco-friendly practices, efficient resource utilization, and sustainable infrastructure.

Award of Certificate

The student will be evaluated through attendance, assignments, quizzes and a final test. The student must secure a minimum of 60% of the total marks to get the course completion certificate**.**

Course Co-ordinator: Mr. Achyhut Pandey

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Department of Electrical Engineering

Value Added Course

Electrical Autocade

AUTOCAD ELECTRICAL

Course Name: Electrical Autocade
Course Code:
Contact Hours : 6 weeks 40 Hours (30 Hours Teaching + 10 Hours of Workshop)
Duration : August, 2021 to October 2021
Students Strength: 30

Importance of course

This course is designed for new users who require comprehensive training in AutoCAD® Electrical software. This hands-on course focuses on how to build intelligent ladder diagrams and panel layouts, and how to leverage this intelligence. The course provides an overview of many AutoCAD Electrical utilities designed to enable users to quickly build and manage electrical controls drawings.

Course Objective:

The primary objective of this course is for students to learn the basic commands necessary for creating professional electrical-controls drawings with AutoCAD Electrical software.After completing this course, students will be able to:

1.Navigate the AutoCAD Electrical user interface.

2.Use the fundamental features of AutoCAD Electrical.

3.Build intelligent ladder diagrams and panel layouts.

4.Create, view, and edit the project settings and properties.

5.Extract data from drawings into reports formatted to match users'standards.

6.Insert and edit parametric PLC modules, nonparametric PLC modules, and stand-alone PLC I/O points.

Course Description

1.Line ,Circle,Erase, Undo, Redo, Zoom Pan, Rectangle, Move, Copy, Area

- 2. Function key, Osnap & Settings
- 3. Offset, Extend, Trim
- 4. Linetype - LT & Ltscale
- 5. Hatching & Gradient & Editing
- 6. Ellipse (Centre and Axis-end) & Ellipse Arc ,Arc, Spline, Solide, Donut
- 7. Polygon, Polyline & Pedit,Fillet, Chamfer, Mirror, Rotate, Scale, Stretch, Join, Array
- 8.Break, Grip
- 9. Text,Table, Data Link to Excel
- 10. Block (making & Inserting), Attribute definition, Dynamic Block Editor
- 11. Point, Mpoint, Ddptype, Divide, Measure, Layer), Layer tools, Setting of Units, Explode.
- Introduction of 3D modeling
- Viewports
- Surfacing & setting (Rulesurf, Revsurf, Tabsurf, Edgesurf)
- Extrude, Revolve, Sweep, Loft, Presspull, Polysolid, 3Dpoly
- Solids Editing (Sunstract, Union, Intersect, Shell, Operation on Edges & Faces)
- UCS Setting
- 3D Operation (3D Array, Mirror 3D, Rotate 3D, Slice, Interference)
- Layout Setting
- Plot
- Rendering, Lighting, Texturing

Scope of this Course:

- **Design and collaborate with flexibility**

Work the way you want. Stay connected to projects with one AutoCAD experience on desktop, web and mobile to capture, share and review ideas on the go.

- **Manage design data across projects**

Reliably streamline document review and approval workflows with Autodesk Docs, our cloud-based document management and common data environment available in the AEC Collection.

Course Outcomes: After the completion of this course the student will be able to understand the following points:

- ❖ Design across Project
- ❖ Data with flexibility
- ❖ Layout Setting and Tags

Main Objectives for Students:

The Student learn about the various type of Command and design can be prepared by the Other engineers . Able to design single sine diagram for domestic wiring and industrial warning.

Course Contents:

Basics of electrical design engineering

1. Representation of electrical symbols
2. Design of lighting fixture
   (i) Installation on platform
   (ii)Open area flood light fixture
   (iii)Street Light Fixture
   (iv)Floodlight mast
   (v)more…

3. Design of Radial Systems
4. Design of SLD(Single line diagrams)
   (i)Basic lighting SLD
   (ii) Detailed SLD
5. Design of Control Schematics
   (i)DOL starter
   (ii)Forward Reverse Starter
   (iii)Star Delta Starter
   (iv)More
6. Electrical panels
7. Power Diagrams
8. Sub-station layout
9. Using PLC I/O Modules
10. Design of various Electrical machines

    Transformers, induction machines-single phase and three phase, DC machines, etc

Award of Certificate

The student will be evaluated through attendance, assignments, quizzes and a final test. The student must secure a minimum of 60% of the total marks to get the course completion certificate**.**

Course Coordinator: Mr.Diwakar Dubey

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Department of Electrical Engineering

Value Added Course

Industrial Automation

Course Details

Course Name: Industrial Automation
Course Code:
Contact Hours : 2 weeks 36 Hours (10 Hours Teaching + 26 Hours of Workshop)
Duration : 01/07/2022 to 15/07/2022
Students Strength: 30

Importance of Course

Industrial automation is a complex, dynamically evolving and utterly fascinating technology field. This guide covers the basics of industrial automation, including its main principles and concepts, technological solutions powering modern-day automation and their applications in the industrial environments.

In the modern world, the industrial automation is omnipresent across virtually all fields and niches of the economy. Automation systems allow manufacturing, engineering, construction, power generation and other processes laying at the core of the economy to function with increasing efficiency and productivity. Industrial automation today is going through a new major developmental boom, which is fueled by innovative technologies such as artificial intelligence (AI), cloud computing, Big Data, Internet of Things (IoT) and others

Course Objective:

The Industrial Automation course at Production site provides students with a comprehensive understanding of the management, cost Reduction, Efficiency and Productivity. Students will learn about the environmental impact of Society and the various techniques and technologies used for Monitoring and Industrial Safety.

Course Description: This industrial automation training course is designed & developed by industrial professionals having decades of industrial experience in Automation Domain. This automation training course is designed based on practical approach i.e. ‘Hands-On’ State-of-the-art(PLCs, SCADA) equipment**.**

Scope of this Course:

- The rear-view mirror-Because of the relatively small production volumes and huge varieties of applications, industrial automation typically utilizes new technologies developed in other markets. Automation companies tend to customize products for specific applications and requirements. So the innovation comes from targeted applications, rather than any hot, new technology.
- New technology directions-Industrial automation can and will generate explosive growth with technology related to new inflection points: nanotechnology and nanoscale assembly systems; MEMS and nanotech sensors (tiny, low-power, low-cost sensors) which can measure everything and anything; and the pervasive Internet, machine to machine (M2M) networking.
- The fully-automated factory-Automated factories and processes are too expensive to be rebuilt for every modification and design change – so they have to be highly configurable and flexible. To successfully reconfigure an entire production line or process requires direct access to most of its control elements – switches, valves, motors and drives – down to a fine level of detail.
- High-value-added products- proprietary products and knowledge offered through effective global service providers, tailored to specific customer needs.

Course Content:

This course, provides an overall exposure to the technology of Industrial Automation and Control. It covers topics such as:

- Advantage and architecture of automation systems
- Measurement systems (including sensors and signal conditioning)
- Discrete and continuous variable control systems
- Hydraulic, pneumatic, and electric actuators
- Industrial communication and embedded countinghouse Content
- Ladder Programming
- SCADA Design
- PLC and SCADA Communication
- PLC and Sensors Communication

Course Outcomes: After the completion of this course the student will be able to understand the following points:

- This subject will give general introduction of automation and practices involved in Creating programming in PLC, its Coding , use and importance.
- To know about the role and importance of SCADA
- To Learn about Communication between PLC and SCADA

Employability-

Industrial automation offers promising job prospects across various sectors. Here are some potential career paths:

1. **Automation Engineer**:
    - Automation engineers design, develop, and maintain automated systems, including PLCs (Programmable Logic Controllers), SCADA (Supervisory Control and Data Acquisition) systems, and robotics.
    - They work in manufacturing, automotive, pharmaceuticals, and other industries.
2. **Control Systems Engineer**:
    - Control systems engineers focus on designing and implementing control algorithms for industrial processes.
    - They optimize efficiency, safety, and reliability of systems.
3. **Robotics Engineer**:
    - Robotics engineers specialize in designing, programming, and maintaining robotic systems used in manufacturing, logistics, and healthcare.
    - They work on tasks like robot kinematics, vision systems, and motion planning.
4. **Maintenance Technician**:
    - Maintenance technicians troubleshoot and repair automated equipment.
    - They ensure smooth operation and minimize downtime.
5. **Process Automation Specialist**:
    - These professionals improve production processes by implementing automation solutions.
    - They analyze data, identify bottlenecks, and optimize workflows.
6. **Industrial IT Specialist**:

- Industrial IT specialists manage networks, cybersecurity, and data communication in automated systems.
- They ensure data integrity and system reliability.

7. **Field Service Engineer**:
   - Field service engineers install, maintain, and repair automation equipment on-site.
   - They travel to different locations to support clients.
8. **Consultant/Project Manager**:
   - Consultants and project managers oversee automation projects.
   - They plan, budget, and coordinate implementation.
9. **Research and Development (R&D)**:
   - R&D roles involve creating innovative automation solutions.
   - These professionals work on cutting-edge technologies.
10. **Energy Management Specialist**:
    - Energy management specialists optimize energy usage in automated systems.
    - They focus on sustainability and cost reduction.

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Department of Electrical Engineering

Value Added Course

Solar Panel Installation and Maintenance

Solar Pannel Installation and Maintenance

Course Details

Course Name: Solar Pannel Installation and Maintenance
Course Code:
Contact Hours: one weeks 30 Hours (10 Hours Teaching + 20 Hours of Workshop)
Duration: 03/06/2024 to 08/06/2024
Students Strength: 49

Importance of Course

This is a skill oriented course in the study of solar photovoltaic (PV) cells, modules, and system components; electrical circuits; PV system design and sizing for use on homes, commercial building etc., understanding energy conversion from sunlight to electricity, and working with solar conversion equipment. This Course will give students the book knowledge and hands on experience needed to become entrepreneur / self employed.

Course Objective:

- Develop highly skilled and technically qualified rooftop solar photovoltaic installer, and also give them a pathway towards becoming a successful professional and an entrepreneur.
- Establish a technical and administrative framework to train and certify 10,000 Rooftop Solar PV Installers per year throughout the country.
- Foster100 partnering training centres and empower them by building their internal human resource and infrastructural capacities.
- Translate global knowledge and national experience into local learning through standardized and regularly updated course curriculum and content.

Course Description

Rooftop Solar PV Installation is a platform to develop and promote solar capabilities in training and educational institutions by standardizing curriculum and content, assisting in setting up training infrastructure, monitoring training quality and certifying the successful technicians.

Scope of this Course:

The solar energy industry is booming. Since 2009, the amount of solar energy connected to the grid has increased more than 35-fold, reaching 62.5 GW today. This expansion has resulted in the creation of thousands of new solar industry jobs, with more than 240,000 people currently employed and projections of major growth in the future.

Course Outcomes

Develop a knowledge bank

- Obtain technical and other capacity requirements from the solar industry
- Obtain learnings about the sector locally and globally from experts
- Obtain requirements from government, utilities and statutory bodies
- Process the information and knowledge into simple deliverable vocational material

Develop capacities

- Guide educational and training institutions to set up relevant learning infrastructure
- Train trainers and provide teaching material with continuous upgradation and support
- Through competent trainers, develop skilled technicians in a decentralized manner
- Monitor the overall development and delivery process

And in the process

- Unify technical standards and aspects for the sector
- Standardize the teaching-learning process
- Provide skilled workforce to the sector to meet its targets

Course Contents:

1. Basics of Solar Energy and Electrical Concept
2. Identification and use of different tools and tackles used for installation of Solar PV system
3. Site Survey for Solar PV Installation
4. Interpretation of Drawings, Material Handling and storage of components on-site
5. Installation of Electrical Components of Solar Photovoltaic Systems

6. Install Civil and Mechanical Parts of Solar PV System
7. Test & Commission Solar PV System
8. Test & Commission Solar PV System

Job Opportunities:

- 1. Become entrepreneur / self employed.
- 2. Design Electrical Engineer – Solar.
- 3. Area Sales Manager-Solar Thermal & PV Products.
- 4. Service-in-charge.

Course Co-ordinator- Mr. K.K. Tripathi

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Department of Electrical Engineering

Value Added Course

Electrical Machine Maintenance and Testing

Electrical Machine Maintenance and Testing

Course Details

Course Name: Electrical Machine Maintenance and Testing
Course Code:
Contact Hours : 6 weeks 40 Hours (30 Hours Teaching + 10 Hours of Workshop)
Duration : 01 September, 2021 to 30 November, 2021
Students Strength: 35

Importance of Course

Electrical maintenance is the process of inspecting, testing, monitoring and replacing all electrical parts as required, using hand tools, thermal imaging, computerized programs and special measurement devices, to keep systems and machines working efficiently and safely[1]. It is the process of ensuring that electrical equipment is kept in good working order[2]. This includes inspecting, testing, and repairing electrical equipment as necessary to prevent problems that could lead to a loss of power or an electrical fire.

Course Objective:

The Electrical Machine Maintenance and Testing course at AKS University provides students with a comprehensive understanding of the rating and Fault of electrical Machine. Students will learn about the Fault prediction and technique used to maintenance it effectively.

Course Description: This course provides maintenance about the various type of Machine.Machine is kept in good working condition through maintenance activity. Maintenance activity is a repairing and maintaining work is used for any electrical and mechanical equipment. When a equipment is installed then after passing some times like as three months then list of all we will have to health check .If any fault minor or major is present then it will be rectified through maintenance activity. Through a combination of illustrated lectures, examples and exercises, students will learn how electrical systems work, how to maintain electrical safety, and how to install and troubleshoot common electrical equipment.

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Scope of this Course:

A. Regular monitoring :

B. Increase Good Quality production:.

C. Safety:

D. Preventive Maintenance plan-

E. Public Awareness and Education: Raising awareness among the Students and the general public about the impacts of Maintenance and Heavy Machine Installation. Educational programs can promote best practices, technological advancements, and policy initiatives.

Course Outcomes: After the completion of this course the student will be able to understand the following points:

- ❖ This subject will give general introduction Installation of Small and large machine.
- ❖ To know about the role and importance of Equipment's, relay and circuit breaker.
- ❖ To learn the basic techniques used in repairing and maintenance.

Main Objectives for Students:

The student learns about the various type of connection like single phase and three phase connection. They get practical experience regarding electrical equipment maintenance testing and trouble shooting.

Course Contents:

1)Electrical Fundamentals- Basic Tools, personal protective equipment, Series, parallel, Delta and Star connection, Capacitor and inductor Association :series and parallel, ,Generation of DC, Single and three phase AC and Their Circuit operating principle

2)Measuring and Testing- How to measure Ω, A, V, W and rpm, Attention when measuring Ω, A, V. Multimeter, Clamp on meter, Oscilloscope, Power quality and phase sequence meter, Insulation Resistance meter, how to measure insulation resistance in motor, transformer and MV/HV Insulator, How to choose Installation resistance in motor, Transformer and MV /HV Insulator, How to choose Insulation resistance test voltage and Analyze results, Simulation of Ω, A, V, W, Hz Metering wave analyzer with Oscilloscope.

3)Basic Skill and Knowledge for electrical Circuit trouble shooting Electrical Schematic Diagram Symbology, Voltage Levels used in LV Electrical Circuits, Local and Remote Control, Manual and Automatic Control, Sensors and Transducers, Power, Control and Signalling Circuits: Contactors, Relays, Interlocks, etc. Fuse, Circuit Breaker, Overload, Voltage and Frequency Relays Electrical Timer and Latch Relays, Electrical Switchboards Accessories: Terminal Block, Din Rail, Cable Trunking, Buttons, Switches, Selectors, Siren, Signalling LED, Design of Power, Control and Signalling Circuits ,AC and DC Motor Starting and Speed Control Methods, Example 1: Star-Delta Stater, Example 2: DC Motor with Separate Excitation Starting, Fundamental Rules for Creating and Reading Electrical Diagrams, Basics of Ladder Diagram and PLC Programming, Power, Control and Signalling Circuit Design

4) Maintenance, Testing and troubleshooting of common electrical equipment's- Trouble shooting internal and external fault, Instruments and accessories for trouble shooting. Trouble shooting charts.

5)Safety- fire extinguisher, Electric shock, Accident in plant.

Award of Certificate

The student will be evaluated through attendance, assignments, quizzes and a final test. The student must secure a minimum of 60% of the total marks to get the course completion certificate.

Course Coordinator: Dr Rama Shukla

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Department of Electrical Engineering

Value Added Course

Electrical Safety

Electrical Safety

Course Details

Course Name: Electrical Safety
Course Code: 24EE873
Contact Hours : 1 weeks 30 Hours (20 Hours Teaching + 10 Hours of Workshop)
Duration : 01/05/2024 to 08/05/2024
Students Strength: 53

Importance of Course

Most of these accidents can be avoided by careful planning and straightforward precautions. This Electrical Safety course will provide some basic measures to help you control the risks of using electricity at work. Electrical safety helps organisations achieve the obligations to fulfil legal requirements and Operational Control requirements of ISO 45001:2018.

Course Objective:

Electrical safety training equips individuals with the knowledge and skills required to work safely around electrical systems. The course covers a wide range of topics, from understanding the basics of electricity to recognizing and mitigating potential hazards in various environments.

Course Description:

If not used properly, electricity can kill or severely injure people and cause property damage. Every year many accidents at work involving electric shock or burns are reported. These fatal incidents are often caused by contact with overhead power lines. Even non-fatal shocks can cause severe and permanent injury.

Scope of this Course:

Electricity, while indispensable, presents numerous hazards, including shocks, burns, and fire risks. Mismanagement or lack of knowledge can lead to fatal accidents or significant damage to properties. Electrical safety training is crucial as it. Those using or working with electricity

may not be the only ones at risk – poor electrical installations and faulty electrical appliances can lead to fire, which may also cause death or injury to others.

Course Outcomes: Safety in workplace

After the completion of this course the student will be able to understand the following points:

- ❖ This subject will give general introduction the importance of Electrical Safety
- ❖ To know about the role and importance of safety equipment's
- ❖ To learn About basic techniques used in various electrical Hazards.

Main Objectives for Students:

1. **Fundamentals of Electricity:** Basics such as current, voltage, and resistance, and the relationship between them.
2. **Safe Work Practices:** Procedures like lockout/tagout, safe equipment handling, and maintaining safe distances from live components.
3. **Personal Protective Equipment (PPE):** Selection and usage of safety gear like insulated gloves, face shields, and flame-resistant clothing.
4. **Emergency Procedures:** First-aid measures for electric shock victims and handling electrical fires.
5. **Special Environments:** Precautions to take in wet or damp locations, near flammable materials, and in confined spaces.
6. **Equipment and Installation:** Understanding ratings, correct installations, and regular maintenance practices.
7. **New Technologies:** Awareness of safety challenges posed by renewable energy systems and battery storage.
8. **Regulatory Compliance:** Familiarity with local and international electrical safety standards and codes.

Students will learn shocks from faulty equipment may lead to falls from ladders, scaffolds, or other work platforms. Those using or working with electricity may not be the only ones at

risk – poor electrical installations and faulty electrical appliances can lead to fire, which may also cause death or injury to others.

Course Contents:

- Introduction to Electrical Safety
- Key terms and definitions
- What is Electricity?
- Electric Charge, Static Electricity and Current Electricity
- Electrical Conductor and Insulators
- How Electricity is measured?
- Electric Circuit
- Electrical terms and devices
- Electrical hazards
- Identification of hazards
- Classification of hazards area
- Structural hazards and mitigation measures
- Distribution board
- Updated as build Single Line Diagram (SLD)
- Distribution board installation
- Battery terminal
- Portable tools
- Personal Protective Equipment (PPE)
- Illumination
- Ensuring proper insulation wherever necessary
- Periodical check
- Earth pit
- Lightning arrestor
- Inspection report
- Electric Shock Restoration Diagram
- Dampness and Dust
- Busbar Trunking (BBT) End Opening
- Maintenance Awareness
- Hierarchy of Controls

- Design a Safer System
- Implement an electrical safety program
- Observe safe working practices
- Use Personal Protective Equipment (PPE)
- Use Warning Labels
- Use an Energised Electrical Work Permit
- Accidents and Control Measures
- Maintenance System and its effectiveness
- Electrical Safety Audit
- Summary of Common Mistakes in Factory Power System
- Electricity Rules

Career benefits

- Understand the importance of Electrical Safety
- Learn the basics of electricity
- Understand the various electrical hazards
- Explain the mitigation measures

Award of Certificate

- The student will be evaluated through attendance, assignments, quizzes and a final test. The student must secure a minimum of 60% of the total marks to get the course completion certificate**.**

Employability

- All Production Company
- Cement Industry
- Mining Industry
- Automobile Industry
- Indian Railway
- All electrical equipment maintenance site

Course Co-ordinator- Dr. Umesh Soni

AKS University
Department of Mining Engineering

VALUE ADDED COURSE

Course Name:
Environment in Underground Coal Mines-
Testing and Monitoring of Mine Gases

1.1: Course Details

Course Name- Environment in underground coal mines-Testing & Monitoring of mine gases Course Code- Conduct Hours- 36 Hours (30 hours Teaching + 6 hours workshop) Duration-6 weeks Student Strength-

1.2: Course Objective

The purpose of the course is to acquaint the students about the general mine environment in underground coal mines with an aim to comprehend the changes in normal atmospheric air and to identify and measure the different gases in mine air composition and their effects.

1.3 : Course Description

The course encompasses the description of general environmental conditions in an underground coal mine because of contamination by different types of mine gases with the intake atmospheric air and their probable effects on human health and creation of other types of hazards. The course also describes the different methods to maintain a conducive environmental conditions in underground mine atmosphere by effectively testing and monitoring of different mine gases within the stipulated Threshold Limit Values (THLV) as prescribed by Coal Mining Laws and Regulations (CMR 2017).

Scope of the course

The focus of the course is to make an in-depth study of the changes that occur into the composition of normal atmospheric air during its flow through an underground coal due to contamination of different mine gases, the sources for such gases, their permissible limits from human health and mines safety points of view and to develop the system for their effective identification, measurement and control to maintain the mine environment conducive for safe mining operations.

Main Objectives for Students

- To become familiar with the general changes in the air composition that occur in an underground coal mine compared to normal atmospheric air
- To comprehend the sources of different mine gases that contaminate the mine air.
- To understand the broad impacts of different mine gases on human health and other types of mine hazards
- To develop knowledge and skill for identification, measure and monitor the presence of different mine gases in the environment of an underground coal mine
- To enable to develop control measures for maintaining the concentration of different mine gases within their threshold limit values (THLV) as stipulated under mining laws.
- To be acquainted with the different instruments, devices and systems for gas measurement
- To garner adequate knowledge base for research orientation in this field with futuristic approach.
- To be acquainted with the Acts, Rules and Regulations in relation to underground mining activities in general with reference to mine environment and ventilation.
- To develop skills in critical appraisal for continual improvement in the situation of systematic reviews.

Course Contents

1. Composition of atmospheric air and the changes that occur in the composition of mine air

2. The different factors that cause the change in the composition of mine air
3. The Threshold Limit Values (THLVs) of different gases in mine air as per Coal Mines Regulations, 2017
4. Measurement of oxygen deficiency in mine air and its effect on human health. Instrumentation for measurement of oxygen deficiency in mine atmosphere.
5. "Fire Damp"- Presence of inflammable gases in underground coal mines. Classification of coal seams as per degree of gassiness.
6. Sources of inflammable gases in coal mines and their effects. Limits of "explosibility " of methane and other higher hydrocarbons.
7. Ignition point temperature and lag of ignition for methane gas. Importance of these two properties of methane gas in designing safe equipment for detection of the concentration of inflammable gases in UG coal mines.
8. Cowards Diagram and its significance
9. Precautions against risk of fire-damp explosion in underground coal mines
10. Instrumentation for detection and measurement of the concentration of inflammable gases in an underground coal mine
11. Blackdamp and its composition. Physiological effects of black dump in underground mine environment.
12. Method of calculation of black damp. Factors affecting the composition of black damps.
13. White Damp and its basic characteristics. Different sources of white damp in underground mines.
14. Physiological effects of white damp (CO) at different concentrations. Degree of CO poisoning and the Factors on which the degree of CO poisoning depend. Methods of dealing with a person affected by CO poisoning.
15. Methods for detection of CO and vulnerable locations and instrumentation for measurement of CO concentration.
16. Nitrous fumes in mine air, sources, physiological effects and preventive measures to safeguard against effects of Nitrous fumes
17. Construction, principle of operation and use of Flame Safety Lamp in an Underground Coal Mine.
18. Modern gas detection and monitoring systems for Underground coal mining like Tele-monitoring system, Tube bundle system & Spectography.

Course outcomes

After the completion of the course, students will be able to:

1. Differentiate the mine air quality from normal atmospheric air and distinguish the sources of contamination of mine air by different types of mine gases
2. Get acquainted with the different mine gases that may occur in ug mining conditions
3. Comprehend the necessity for detecting and measuring different mine gases in UG mine environment.
4. Understanding the effects of different gases with their respective THLVs and their different concentration levels on health hazards and mine safety standards.

5. Develop sufficient knowledge for physical detection, esting and monitoring of these mine gases
6. Get acquainted with the different instruments for detection and measurement of mine gases
7. Analyze the quantitative and qualitative data base for actual presence of different mine gases in UG coal mine environment and develop ability to act to reduce or eliminate the risks to human physiology or safety hazard for the mine.
8. Plan for the corrective actions and improve the ug mine environment.
9. Acquiring adequate knowledge about the state of the art technologies and equipment and devices for continuous monitoring of ug mine environment and auto control systems for corrective measures to avoid risks of explosion, outbreak of fire, concentration of mine gases beyond the respective THLVs, automatic power disconnection to eliminate risks of underground explosion of inflammable gases'.
10. Will obtain sufficient technical skill to formulate mitigation plans against risks due to poisonous, toxic and explosive gases.
11. Will be able to channelize their knowledge towards oriented research studies in the different fields of mine environment.
12. Conduct published literature survey in search of effective measures towards up-grading specific knowledge on ug mine environment and related sustainability issues.
13. Understand the implications of systematic review on the subject for research, practice in field and policy making for the mining industry.
14. Will have adequate understanding of the existing laws under Acts, Rules & Regulations for practical implementation of the requirement for ug environmental monitoring and control

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Skills- Students can focus on developing newer systematic approach towards detection and monitoring of underground environment in underground coal mines involving contamination by different mine gases and methods to deal with the situations to maintain safe mining conditions.

Employability- Students can use this course for inclusion in their profile and CV for various job opportunities in Industrial field, Academic institutions and Research organizations

Entrepreneurship- Students can use this knowledge to build expertise in aiding mining units and mining companies for updating systematic searches in dealing with different types of underground environmental issues and create opportunities for startups for manufacturing of detecting devices and equipments or as consultants which are of immense value for the present and foreseeable future in Indian mining industry.

Prerequisites

- Students should have basic knowledge and understanding of the different mining processes and technologies in general and underground mine environment and ventilation in particular.
- The students must have sufficient base to understand the primary and secondary impacts of mine gases on physiology of human being and also in generation and aggravation of mine hazards like fire risk, explosion risk etc
- Students must be knowledgeable about searching facilities in internets for acquiring relevant data & information at all levels and capacity to interpret these data.

Research Topic

Students will have to select research orientations like:

- State of the art methods of environmental control in underground mines like "Ventilation on Demand" for auto control system development
- Analysis of impacts of dynamic changes in UG mine environment by continuous monitoring with flow of data from all the vulnerable locations of the mine
- Focusing on innovative technologies for monitoring and auto control on Mine Environment

Assignments

Course assignments will comprise at different stages:

1. Impact analysis of highly mechanized underground coal mining on UG mine environment
2. Detailed analysis of the physiological effects of different mine gases as well as the safety standards of the mine
3. Stochiometric composition of inflammable gas-air mixture and impact of Hydrogen and higher hydro-carbons on the explosibility limit in underground mine environment
4. Unique features of mining industry & formulation of Sustainable Development Framework for mining with special reference to underground mine environment
5. Risk assessment regarding the dynamics of underground mine environment and its quantification method
6. State of the art technologies for detection, monitoring and control of Underground mine environment

Student Evaluation

Students will receive individual grades on participation on their respective assignments on submission.

1.5 Schedule of the Course

Week	Topics Covered
1st	Changes in the composition of atmospheric air in underground coal minining condition. Sources of contaminant gases and their characteristics
2nd	Stipulations under mines laws and regulations regarding the threshold limit

	values of different mine gases in underground mine environment. Physiological effects of different gases at different concentration levels. Oxygen deficiency-its effects, detection and instrumentation.
3rd	Inflammable gases as explosion hazard in underground coal mines. Classification of coal mines on the basis of degree of gassiness. Detection, measurement and control for inflammable gases. Impact of hydrogen and other hydrocarbons mixed with methane on the explosibility limit and its practical impact on mine operation. Instrumentation for detection and measure of inflammable gases in underground mine environment and safety precautions.
4th	Black damp in underground mine environment and its impact. Physiological effect of black damp. Method of calculation for the concentration of b;ack damp. Sources and vulnerable locations for concentration of black damp. Instrumentation for detection and measure of black damp.
5th	White damp- one of the greatest hazards from the human health point of view in underground mine environment. Sources of white damp in underground mine environment and its physiological effect based on concentration level. Instrumentation for detection and measurement of white damp. Nitrous fumes and Sulfur Oxides in underground coal mines and their effects on human health. Detection of these gases as trace elements measured in PPM by sensitive devices and instruments. Very low level of THLV and need to maintain these gases in very low concentration in ug mine environment
6th	Modern and innovative technologies for detection, monitoring and auto control of the multiple gases for maintaining UG mine environment for operating a safe mine. New concepts of Ventilation on Demand which is sensor based to identify the changes in the composition of mine air and auto implementation of the control measures. Application of continuous detection and monitoring systems in underground coal mines for mine gases and continuous analysis of the same forming a comprehensive data base.

1.6 Award Certificate

The student will be evaluated through attendance, assignments, quizzes and a final test. The student must secure a minimum of 60% of the total marks to get the course completion certificate.

Course Coordinator:

Er. P,K,Palit - Department of Mining Engineering, AKS University

Mentors:

- Dr. G K Pradhan- Dean, Faculty of Engineering & Technology, AKS university
- Dr. B K Mishra- HOD, Department of Mining Engineering, AKS University
- Prof. A K Mittal- Director (Training)- AKS University
- Prof. S.Dasgupta- Dept. of Mining Engineering, AKS University

AKS University
Department of Mining Engineering

VALUE ADDED COURSE

Course Name- Advanced Surface Mining

1.1: Course Details

Course Name- Advanced Surface Mining Course Code- Conduct Hours- 36 Hours (30 hours Teaching + 6 hours workshop) Duration-6 weeks Student Strength-

1.2: Course Objective

The purpose of the course is to introduce to the students the concepts and practices of surface mining involving advanced mining technologies and the design aspects of surface mines.

1.3 : Course Description

The course encompasses the advent of the surface mining technologies for designing and operation of large mechanized surface mines involving both blasting and blast free methods in alignment with the principles of sustainable mining practices.

The course is designed to develop key skills among the students to comprehend different impacts of mining – both positive and adverse- on economic, social and ecological environment and to enable the students to formulate strategic technical plans to mitigate the adverse effects and also generate interest among them for specific area of research in this field.

Scope of the course

The focus of the course is to make an in-depth analysis of surface mining technologies and other mining activities for achieving very high level of production with very high level of productivity with the goal of meeting the national coal demand simultaneously with minimizing, if not eliminating, the adverse effects on environment and taking actions within the ambit of different mining and environment related laws (Acts, Rules & Regulations) to prevent unscrupulous exploitation of mother earth and its resources and at the same time promote the principles of sustainable development towards contributing to the “Common Goal & Common Future” of human civilization.

Main Objectives for Students

- To become familiar with the technologically advanced surface mining technologies and the conditions for their applicability.
- To comprehend the importance and need of the course in alignment with the articulated need of Indian mining industry both for coal and non-coal sectors.
- To understand the broad impacts of surface mining activities in total perspective of economy, society and environment.
- To develop knowledge and skill for formulation, designing and implementation of large opencast mines.
- To comprehend the probable impacts of surface mining on overall environment and developing the ability to combat the adverse effects of surface mining right from planning stage to post closure rehabilitation of the mining leaseholds.
- To garner adequate knowledge base for research orientation in this field with futuristic approach.
- To be acquainted with the Acts, Rules and Regulations in relation to mining activities in general and advanced surface mining technologies in particular.
- To develop skills in critical appraisal for continual improvement in the situation of systematic reviews.

Course Contents

1. Introduction to the present trend of surface mining with advanced technologies.
2. Need to construct and operate large and highly mechanized surface mines to align with the continually enhancing coal and mineral demand.
3. Impact of designing large producing surface mines on the basic parameters and geometry of the design elements of surface mining (Like bench height, bench width, slope angle & pit slope angle, haul road design etc)
4. Criteria for equipment/HEMM selection based on production potentiality and surface mine geometry.
5. Criteria for selection of surface mining methods with blasting technology or with blast free technologies
6. Advancements in blasting technology, quality and characteristics of explosives with potentiality for use in the capacity of “Bulk Explosives” and the different compatible explosive accessories.
7. Developing system compatibility involving drill hole size, drilling depth and other elements of blasting geometry (burden, spacing, sub-hole drilling)
8. Designing a blasting block based on production planning and types of loading machines
9. Assessment of impacts of heavy blasting on surrounding environment
10. Quantitative and qualitative analysis of different impacts of heavy blasting in surface mining.
11. Formulation of strategic plans to mitigate the adverse effects of heavy blasting on environment and developing an effective monitoring system
12. Developing effective control blasting systems
13. Introduction of different blast free technologies and their applications in surface mining
14. Challenges of slope stability in surface mining- both bench slopes and dump slopes
15. Methods for assessment of risks in high capacity surface mines and developing mitigation plans for reducing the risks.
16. An in-depth analysis of the rules and regulations related to surface mining and recent changes in the rules and regulations.
17. Sustainability analysis of large surface mines in Indian context.

Course outcomes

After the completion of the course, students will be able to:

1. Understand the trend of development in the mining industry in general and the apprehended role of advanced surface mining technologies
2. Get acquainted with the different surface mining machines and their applicability
3. Comprehend the necessity of balancing the surface mining activities with environmental protection needs.
4. Plan for the basic parameters of a surface mine in a given geo-mining condition
5. Develop sufficient knowledge for selection of proper mining machines and Heavy Earthmoving Machineries (HEMM) at different stages of surface mining operation
6. Comprehend the implications of with blasting and blast free surface mining technologies

7. Garner sufficient knowledge about the basic characteristics of suitable explosives and their accessories for use in bulk at large surface mines
8. Plan for the size of suitable blasting blocks for maximum possible utilization of HEMM
9. Identify the situations for blast free technologies as more eco-friendly mining system
10. Garner awareness about the social responsibilities of all industrial organizations in general and surface mining industry in particular.
11. Develop understanding about the importance of environmental impacts of mining and will develop skill for their quantitative and qualitative assessment.
12. Will obtain sufficient technical skill to formulate mitigation plans against different levels & different spheres of environmental impacts due to surface mining and draw mitigation plans
13. Will be able to channelize their knowledge towards oriented research studies in the different fields of technology for eco-friendly surface mining.
14. Conduct published literature survey in search of effective measures towards up-grading specific knowledge on surface mining technology and related sustainability issues.
15. Understand the implications of systematic review on the subject for research, practice in field and policy making for the mining industry.
16. Will have adequate understanding of the existing laws under Acts, Rules & Regulations for practical implementation of the surface mining practices in mining fields.
17. Above all, the subject study will have direct effect on the ETHICAL VALUES for Mining Engineers.

Skills- Students can focus on developing newer systematic approach towards surface mining practices involving eco-friendly, more economic and more efficient from the conservation safety and production-productivity points of view surface mining technologies and mining processes.

Employability- Students can use this course for inclusion in their profile and CV for various job opportunities in Industrial field, Academic institutions and Research organizations

Entrepreneurship- Students can use this knowledge to build expertise in aiding mining units and mining companies for updating systematic searches in dealing with different types of surface mining problems and environmental issues which are of immense value for the present and foreseeable future in Indian mining industry.

Prerequisites

- Students should have basic knowledge and understanding of the different mining processes and technologies in general and surface mining in particular.
- The students must have sufficient base to understand the primary and secondary impacts of surface mining in a broad scale
- Students must be knowledgeable about searching facilities in internets for acquiring relevant data & information at all levels and capacity to interpret these data.

Research Topic

Students will have to select research orientations like:

- State of the art surface mining technologies for application in large highly mechanized mines
- Analysis of impacts of surface mining on economic, social and ecological environment at macro and micro level
- Developing new templates for the review of the dynamics of bottom line parameters of sustainability with regards to surface mining activities

Assignments

Course assignments will comprise at different stages:

1. Impact analysis of large scale surface mining and dynamics of continual enlargement in the scale of surface mine geometry and production potentiality
2. Transformation in the surface mining technology – A journey from conventional blasting technology to controlled blasting techniques and to blast free technologies
3. Selection criteria of Heavy Earth Moving Machinery and gradual improvement in machine designs including ergonomic designs..
4. Unique features of mining industry & formulation of Sustainable Development Framework for mining with special reference to surface mining
5. Risk assessment in surface mining and its quantification method
6. Short term & Long term perspectives of Indian Surface Mining- A critical analysis in the context of sustainable mining practices

Student Evaluation

Students will receive individual grades on participation on their respective assignments on submission.

1.5 Schedule of the Course

Week	Topics Covered
1st	Scope of highly mechanized surface mining in Indian mining industry and the different types of state of the art surface mining technologies and their applicability. Surface mining with blasting method and blast free methods
2nd	Improvement in quality and characteristics of explosives used in surface mining process and their accessories. Use of explosives in bulk and the equipment configuration for use of bulk explosives. Chronology of improvement in the characteristics of bulk explosives.
3rd	Concept of controlled blasting techniques in large opencast (surface) mining operations. Simulation of drilling & blasting pattern for optimization of blasting efficiency in surface mine benches. Need and importance of adopting control blasting techniques. Monitoring of the different parameters related to controlled blasting techniques.
4th	Selection of surface mining equipment and Heavy Earth Moving Machinery

	(HEMM) for different geo-mining conditions and at different phases of mining operations in surface mines. Identification of specifications for the machines and formulation of Standard Operation Procedure (SOP) for different surface mining machines. Determination of production potentiality of each machine and calculation of overall production potentiality from the surface mine. Designing of a blasting block based on production potential of the mine, equipment configuration and blasting geometry in the benches.
5th	Detailing of the conditions for blast-free surface mining technologies and HEMM and other equipment for blast-free rock fragmentation. Use of Surface Miners, Bucket Wheel Excavators and different types of Rock Breakers for blast free mining.
6th	Impacts of advanced technologies of Surface mining on environment. Mitigation plan of the surface mining on environment and surface mining processes following the principles of sustainability framework for mining. Identification of the risks associated with surface mining, specially for large opencast mines. Developing methods for risk assessment in large surface mines and quantification of risks. Formulation of risk mitigation plans and their implementation.

1.6 Award Certificate

The student will be evaluated through attendance, assignments, quizzes and a final test. The student must secure a minimum of 60% of the total marks to get the course completion certificate.

Course Coordinator:

Prof. S.Dasgupta- Department of Mining Engineering, AKS University

Mentors:

- Dr. G K Pradhan- Dean, Faculty of Engineering & Technology, AKS university
- Dr. B K Mishra- HOD, Department of Mining Engineering, AKS University
- Prof. A K Mittal- Director (Training)- AKS University
- Er. P K Palit- Director (RD), AKS University

AKS University
Department of Mining Engineering

VALUE ADDED COURSE

Course Name- FIRSTAID TRAINING CERTIFICATE PROGRAM

Course Details

Course Name- FIRSTAID TRAINING CERTIFICATE PROGRAM Course Code- Duration-10 days, (30 Hours Theory Class and 10 Hours Practical class) Student Strength-

Description

First aid is the first and immediate assistance given to any person suffering from either a minor or serious illness or injury. As per mines rule Every underground mine shall be adequate and suitable arrangements are made for the speedy removal from the mine to a dispensary or hospital, of persons employed in the mine who while on duty suffers from serious bodily injury or illness of a serious nature. At every mine employing more than 150 persons on any one day of the preceding calendar year, there shall be provided and maintained in good order a suitable first-aid room & A first aid station shall be established at the bottom of every shaft where men or material are normally wound, near the drive end of every haulage and at the entrance to every district or section of the mine.

Course Objective

The objective is to improve the knowledge and skill of First Aider deployed in Mines. you will learn the proper uses of Splinters and Slings, the process of CPR, Wounds, and Bleeding & handle the burn injury.

Course Curriculum

- Statutory Provisions in Mines for First Aid
- Basics of First Aid
- First Aid Materials.
- Cardiopulmonary resuscitation (CPR)
- Wounds and Bleeding.
- Fracture
- Shock
- Asphyxia (Choking)
- Burn Injuries.
- Poison.
- Emergency Moves

What First Aid Training Cover?

These days, first aid training typically covers procedures like cardiopulmonary resuscitation (CPR) and the use of Automated External Defibrillators (AEDs).

MSHA standards also specify that first aid training and skills should include:

- Patient assessment,
- Artificial respiration,
- Controlling bleeding, and
- Treating shock, wounds, burns, and musculoskeletal injuries.

Why is First Aid Training Important?

mine workers are exposed to some of the highest rates of occupational injury and death in the country.

It's important for mine operators to ensure they're ready to provide first aid for these incidents because faster responses save lives and reduce the severity of injury or illness. Mines are often located in remote areas, but even when professional medical services are relatively nearby, every minute counts. The common advice is that life-threatening injuries require trained personnel within four minutes, and serious injuries require attention within fifteen.

Skilled first aid not only reduces the likelihood of death and prevents the situation from becoming worse, but it also improves the chance of recovery, mitigates the severity of the outcome, and reduces the time for rehabilitation.

First aid training also helps people on the ground provide useful information to emergency services.

Duration of course

- For Mining Students and for Mines, the duration of First Aid training is 10 days and examination on 11th day as per as per the gazette notification of Directorate General of Mines Safety (Ministry of Labour & Employment), gazette notification no G.S.R. 529 (E), dated 4th August 2021.
- For Industries, Factories and other sectors, duration of the training will be finalized as per rules and acts of the concerned department OR authority.

CERTIFICATION

Health & Family Welfare Foundation is registered under Indian Trust Act 1882, Govt. of India & Affiliated to Directorate General of Mines Safety (Ministry of Labour & Employment), vide letter No. DGMS/OH(HQ)/First Aid/02/2022/10 dated 25th Jan 2022, as per the gazette notification no G.S.R. 529 (E), dated 4th August 2021 to issue Proficiency Certificate. The Trust is also registered and approved by NITI AAYOG (Govt. of India), MSME (Govt. of India) as well as ISO 9001-2015 certified organisation.

Types & Validity of the First Aid Certificate

SL.NO.	STAGE	Name of the CERTIFICATE	Validity
01	1st Stage	VOUCHER	5 YEARS
02	2nd Stage	MEDALLION	Life Time

Day-wise First Aid syllabus to be covered for issuing First Aid Competency certificate to the candidate after
conducting Oral and practical examination:

1.5 Schedule of the Course

Day	Topics
Day 1	Lecture- First Aid Basic Principles Definition of First Aid & First Aider Brief of First Aid & Aims of first Aid Responsibilities of First Aider Golden Rules of First-Aid Protecting yourself & Victim against contamination (Universal Precaution) Emergency Scene Management; Patient Assessment; □ The Primary Survey; □ The Physical examination; □ History Taking; □ Head-To-Toe Examination; □ Vital Signs; Practical- Patient Assessment ,
Day 2	Lecture- . Dressings and Bandages; □ Functions of Bandages; □ Types of bandages and dressings; □ General rules for using bandages and dressings; Introduction to basic anatomy □ Musculoskeletal system □ Central nervous system Practical- Different knots, triangular bandage and its application to different part of body and Arm sling and its application
Day 3	Lecture- Fracture □ Identifying fracture (sign and symptom) □ Type of fracture □ Immobilisation of fracture Practical- Immobilisation of Fracture : Depressed fracture of skull, lower jaw, Ribs, Breastbone, collar -bone, Shoulder- Blade, Arm, Forearm, Hand

Day 4	Lecture- Management of Medical Shock □ Type of shock □ Identifying shock (sign and symptom) □ Treating shock (first aid) Dislocations, Sprains, Strains- Signs, Symptoms and treatment. Practical - Immobilisation of Fracture : Pelvis, Thigh, Knee-cap, Leg and Foot.
Day 5	Lecture-. Wounds-types & management Bleeding; □ Types of Bleeding; □ Methods to control external bleeding; □ Specific Types of Bleeding; Practical - Control of external bleeding Nosebleed-control
Day 6	Lecture- Introduction to Cardiovascular System Coronary Heart Diseases and Risk Factors Heart attack and Angina, Cardiopulmonary Resuscitation (CPR) Practical - Practice of CPR on Manikin
Day 7	Lecture- Introduction to Respiratory System Causes of Airway obstruction; Methods of removing an airway obstruction Asphyxia, hypoxia, chocking Carbon monoxide poisoning Foreign bodies in Eye, Ear and Nose Practical Airway Obstruction – Conscious (Heimlich Manoeuvre) Airway Obstruction – Unconscious Victim Care of unconscious victim (Recovery Position)
Day 8	Lecture- Head & Spinal injury Management of Spinal Injury □ Identifying spinal injuries □ Care of the injured victim □ Immobilisation and transportation Practical- Stabilisation of neck in spinal injury Stretcher loading- unloading of person having spinal injury

Day 9	Lecture- Ambulance & Equipment Burn , Electrocution Effect of heat and cold and management Transport of the injured person Practical- Transport of injured person : loading & unloading on the Stretcher, loading & unloading in the Ambulance.
Day 10	Lecture- Drowning Diabetes Poisoning Bites and stings Convulsion & epilepsy First-aid legislation in mines. Group Discussion
Day 11	Examination-total 200 marks Practical- Full Marks 160, Pass Marks 80 Practical- 4 components 1. CPR , 2. Control of bleeding 3. Fracture management 4. Transportation Each practical component carries 40 marks Oral – Full Marks 40 , Pass Marks-20 Oral- 10 Questions shall be asked , each question carries 4 marks Candidate shall pass in Practical and Oral examination separately

Course Coordinator:

Mr. Akash Gupta- Department of Mining Engineering, AKS University

Mentors:

- Dr. G K Pradhan- Dean, Faculty of Engineering & Technology, AKS university
- Prof. S Das Gupta- , Department of Mining Engineering, AKS University
- Prof. A K Mittal- Director (Training)- AKS University
- Er. P K Palit- Director (RD), AKS University

DEPARTMENT OF MINING ENGINEERING, AKS University, Satna, M. P.
VALUE ADDED COURSE DETAIL
ACADEMIC YEARS-2021-2022, 2022-2023 and 2023-2024

1.1. Course Details

Course Name: Geostatistical tools application in Mining

Course Code: GTA-VMIN-101

Contact Hours: 4 weeks 30 Hours (20 Hours Teaching + 10 Hours of Workshop)

Duration: 12th August, 2021 to 9th September, 2021

Students Strength: 30

1.2. Course Objective

This course aims to familiarize students with systematic review methodology so they can comprehend the essential elements of a review and get the essential skills required to conduct their own reviews.

1.3 Course Description

Geostatistical tools Geostatistics, in combination with other statistical methods, offers a wide range of mathematical tools that can be used to analyses, model, provide estimates and assess uncertainties, for different types of spatial features – e.g. grades or geological faces etc. Data Mining analyzing in details the statistics and spatial correlation of the available data is always the key step of a Geostatistical approach. Exploratory Spatial Data Analysis (ESDA) consists in exploring the classical statistics as well as spatial statistics of one or several variables simultaneously, by means of Histograms, Cross-plots, QQ-plots, Variograms, etc. Linking these statistical graphs dynamically with data base maps enables to further explore the data.

1.3.1 Scope of this Course

Geostatistics is concerned with the analysis and modelling of spatial variability. It also addresses how quantified spatial variability can be used in optimal spatial interpolation and spatial stochastic simulation. Fields of application include Mining, Hydrology, Soil Science, Ecology, Geology, Agriculture and Forestry.

1.3.2 Main Objectives for Students:

The main objective of geostatistics is the characterization of spatial systems that are incompletely known, systems that are common in geology and mining. A key difference from classical statistics is that geostatistics uses the sampling location of every measurement.

Geostatistics is a powerful tool for mining engineers who want to estimate the quantity and quality of mineral resources, optimize the design of sampling and drilling programs, and assess the uncertainty and risk of their projects.

1.3.3 Course Contents:

1. Understanding the resource modeling by various exploration techniques
2. Geostatistical parts of exploration modeling
3. Practical application of economic block modeling
4. Understanding the mathematical principles behind the natural resource modeling solution
5. Integration of Geostatistical modeling with the mining production
6. Improving the mining activities by means of Geostatistical resource modeling

1.4 Course Outcomes

Appreciated the explanation given on geostatistics and drilling solution. Students feel more of the Geostatistics and its application in mining should be highlighted. Course should be balanced with Geostatistics and its application in mining. Understand the mining technology research implications of the movement toward evidence-based practice in mining professionals.

Skills: Students can concentrate on creating more recent systematic reviews, which are considered to be highly influential research in the field. Pupils can learn how to evaluate the evidence in a given situation and conduct methodical literature searches.

Employability: Students can apply for jobs as mining engineers, research scientist, research assistants, research scholars, assistant professors, and research assistants by using this course and listing it in their resumes.

Entrepreneurship: By using this knowledge, students can develop their competence in supporting organizations and businesses with updated systematic searches to find relevant literature.

Prerequisites:

Students should have basic understanding of mining research technology designs or methodology and an introductory understanding of mining statistics. Students are advised to work on their personal computers or laptop with an active internet connection with preinstalled programs.

Research Topic:

It will be the responsibility of the students to choose an opening research question for a systematic review. These inquiries will serve as the foundation for the formation of "review teams" consisting of two to three students, who will collaborate to complete each step of the drafting process for a comprehensive review.

Assignments:

Assignments for the course will cover the many phases of a review:

1. Geostatistical parts of exploration modeling
2. Practical application of economic block modeling
3. mathematical principles behind the natural resource modeling solution
4. Improving the mining activities by means of Geostatistical resource modeling

Student Evaluation

Students will receive individual grades on participation and points on their respective assignments on submission.

Schedule

Week	Topic Covered
1	Understanding the resource modeling by various exploration techniques
2	Geostatistical parts of exploration modeling
3	Understanding the mathematical principles behind the natural resource modeling solution
4	Improving the mining activities by means of Geostatistical resource modeling

1.6 Award of Certificate

The student's performance will be assessed by final exam, assignments, quizzes, and attendance. To receive the certificate of course completion, the student needs to receive at least 60% of the total possible points.

Course Coordinator

Dr. B. K. Mishra

Mentors:

Prof A K Mittal, Prof S Dasgupta

LIST OF STUDENTS PARTICIAPATES IN ACADEMIC YEAR-2021-2022

1	B1755R10108031	AKASH TIWARI
2	B1755R10108043	VINEET KUMAR DWIVEDI
3	B1755R10108046	KRISHNKANT
4	B1755R10108007	DHEERENDRA SINGH
5	B1755R10108017	ARUN VISHWAKARMA
6	B1755R10108009	SHUBHAM SINGH
7	B1755R10108024	ADITYA SINGH
8	B1755R10108052	SATENDRA SINGH
9	B1755R10108037	ROHIT KHARE
10	B1755R10108040	SHUBHAM SINGH
11	B1755R10108027	AYUSHMAN
12	B1755R10108039	KRISHNA SONI
13	B1755R10108057	DILIP KUMAR SAHU
14	B1755R10108062	LALIT KUMAR SAHU
15	B1855R10108029	NIPUN KUMAR
16	B1855R10108033	AAYUSH TAILANG
17	B1855R10108034	PAWAN KUMAR SINGH
18	B1855R10108045	NITESH KUMAR TRIPATHI
19	B1855R10108053	VAIBHAV SINGH BAGHEL
20	B1855R10108060	SHIVAM BHARTI
21	B1855R10108012	ANURAG SINGH BAGHEL
22	B1855R10108016	KUMAR RAHUL RATAN
23	B1855R10108017	DEEPAK KUMAR RANA
24	B1855R10108057	ANURAG MAURYA
25	B1855R10108051	ROHIT SINGH
26	B1855R10108056	NILAMBAR KUMAR GANDHI
27	B1855R10108008	RAHUL YADAV
28	B1855R10108018	PRAKASH SINGH
29	B1855R10108037	KRISHNAM GAUTAM
30	B1855R10108043	SHIVAM KUMAR SINGH

LIST OF STUDENTS PARTICIAPATES IN ACADEMIC YEAR-2022-2023

1	B2055R10108019	ABHIRAJ SINGH
2	B2055R10108002	ABHISHEK ANAND
3	B2055R10108035	AJAY KUMAR GUPTA
4	B2055R10108008	AJAY SINGH BAGHEL
5	B2055R10108024	AKASH PRASAD
6	B2155R14408005	AKSHIT KUMAR
7	B2155R14408001	AMAN KUMAR
8	B2055R10108033	AMBUJ SINGH
9	B2055R10108001	AMIT ANAND
10	B2055R10108023	ANKUR SINGH
11	B2055R10108011	ANURAG TIWARI
12	B2055R10108029	ARPIT KUMAR KHARE
13	B2055R10108003	ARUNISH KUMAR
14	B2055R10108028	ASHUTOSH NAMDEV
15	B2055R10108014	AVDHESH KUMAR SEN
16	B2155R14408003	AYUSH KUMAR SINGH
17	B2155R14408017	DEVARAPALLI LOKESH
18	B2055R10108007	DHANESH SINGH
19	B2055R10108017	HIMANSHU VISHWAKARMA
20	B2155R14408014	JAI SONI
21	B2055R10108026	KAMAL KISHOR TIWARI
22	B2055R10108012	KARANJEET SINGH BHOGAL
23	B2155R14408009	KHUSHAL TANDEKAR
24	B2055R10108045	KSHIRSAGAR PRAYUSH DINKAR
25	B2055R10108042	MANISH KUMAR
26	B2055R10108021	MUDDASAR ALI KHAN
27	B2155R14408020	NILENDRA SINGH
28	B2155R14408016	NULU JAGADEESH
29	B2155R14408018	PREM KUMAR PRAJAPATI
30	B2155R14408010	PRINCE KUMAR CHATURVEDI
31	B2055R10108020	RAJ KUMAR MAHTO
32	B2055R10108036	RAM PRAVESH CHOUHAN
33	B2055R10108009	RATNESH SHUKLA
34	B2055R10108031	ROHIT KUMAR MANDAL

LIST OF STUDENTS PARTICIAPATES IN ACADEMIC YEAR-2023-2024

1	B2155R14408008	RONAK MITRA
2	B2155R14408012	SANDEEP SINGH
3	B2055R10108016	SANKALP TAMRAKAR
4	B2055R10108025	SARWAN KUMAR MANDAL
5	B2055R10108038	SATYAM KUMAR
6	B2155R14408013	SAURABH BHARTI
7	B2155R14408002	SAURABH PATEL
8	B2055R10108034	SHASHANK PRAKASH
9	B2055R10108043	SHRADDHA
10	B2155R14408004	SHUBHAM KUMAR SINGH
11	B2055R10108004	SOURAV BANERJEE
12	B2055R10108030	SRISHTI SONI
13	B2155R14408011	SUDHANSHU JAISWAL
14	B2055R10108044	SUJAL KUMAR
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16	B2055R10108041	SWASTIK MISHRA
17	B2155R14408019	VIKASH KUMAR RAJAK
18	B2055R10108006	YASH SAHU
19	B2155R14408022	YUVRAJ SINGH
20	B2155R10108001-	KHEMRAJ SINGH
21	B2155R10108002-	HARSH SEN
22	B2155R10108003-	MOHD ANAS SIDDIQUE
23	B2155R10108004-	ASIF SIDDIQUE
24	B2155R10108005-	ARYAN JAGNE
25	B2155R10108006-	MANISH KUMAR NAYAKVAR
26	B2155R10108007-	SHIVAM KUMAR
27	B2155R10108008-	SAMRIDHI SINGH
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31	B2155R10108013-	ABHISHEK SHRIVASTVA
32	B2155R10108016-	MOHAN PRATAP SINGH
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34	B2155R10108020-	MANEESH KUMAR
35	B2155R10108022-	PRATYUSH RAJ
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42	B2155R10108032-	ADITYA MISHRA

DEPARTMENT OF MINING ENGINEERING, AKS University, Satna, M. P.
VALUE ADDED COURSE DETAIL
ACADEMIC YEARS-2020-2021, 2021-2022, 2022-2023 and 2023-2024

Course Name:
Sustainable Mining Practices: Impacts on Environment & Mitigation Plans

1.1: Course Details

Course Name: Sustainable Mining Practices- Impacts on Environment & Mitigation Plans
Course Code: SMP-VMIN-102
Conduct Hours- 6 Weeks; 36 Hours (30 hours Teaching + 6 hours workshop)
Duration-01st February, 2021 to 15th March, 2021
Student Strength- 60

1.2: Course Objective

The purpose of the course is to introduce to the students the principles of Sustainable Development and their application in the mining industry and acquire key skills in identifying the broad based impact of mining on environment with the aim to develop strategic plans to mitigate the effects within reasonable limits.

1.3 : Course Description

The course encompasses the genesis, chronology and advent of the principles of sustainable development as all pervading principles and formulation of sustainable development framework in consideration of unique features of mining industry.

The course is designed to develop key skills among the students to comprehend different impacts of mining – both positive and adverse- on economic, social and ecological environment and to enable the students to formulate strategic technical plans to mitigate the adverse effects and also generate interest among them for specific area of research in this field.

Scope of the course

The focus of the course is to make an in-depth analysis of mining technologies and other mining activities for their effects on overall environment and taking actions within the ambit of different mining and environment related laws (Acts, Rules & Regulations) to prevent unscrupulous exploitation of mother earth and its resources and at the same time promote the principles of sustainable development towards contributing to the “Common Goal & Common Future” of human civilization.

Main Objectives for Students

- To become familiar with the concept of "Sustainable Development" and its basic principles
- To comprehend the importance and need of the course in alignment with the global concern on environment in general and impact of mining industry in particular.
- To understand the broad impacts of mining activities in total perspective of economy, society and environment.
- To develop knowledge and skill for formulation of mitigation plans to combat the impacts and their practical application.
- To garner adequate knowledge base for research orientation in this field with futuristic approach.
- To be acquainted with the Acts, Rules and Regulations in relation to environmental protection and Corporate Social Responsibilities (CSR) as integral part of mitigation plan
- To develop skills in critical appraisal for continual improvement in the situation of systematic reviews.

Course Contents

1. Introduction to the concept of Sustainable Development.
2. Genesis and chronology of the development of Sustainable Development theory.
3. Basic principles of sustainable development(SD).
4. Formulation of Sustainable Development Framework for mining based on principles of SD and unique features of mining industry.
5. An overview of the impacts of mining on environment.
6. Environmental Impact Assessment (EIA)- a statutory requirement for all new and expanding mining projects (Gazette Notification, 1994) under The Environmental Protection Act, 1986
7. Formulation of Environmental Management Plan (EMP) with the objectives to mitigate the adverse effects of mining as assessed during EIA.
8. Mine Closure Plan (MCP) to implement the EMP in progressive and final phases in a mine's life.

9. Impact of mining activities on air quality parameters- their measurement, monitoring and mitigation.
10. Impact of mining activities on water quality parameters both for surface and ground waters.
11. Impact of mining activities on land. Importance of proper land us plan.
12. Classification of forest lands and laws governing the use of forest lands for mining projects
13. Financial evaluation for use of forest land for mining purposes based on categorization of forest lands.
14. Star Rating System for non-coal and coal mining leases as an important tool to implement sustainable development principles in mining sector.
15. Importance of coal mining sector in the "Energy Security" in India.
16. An analysis of the present & future perspective of energy mix in Indian context.

Course outcomes

After the completion of the course, students will be able to:

1. Understand the implications of sustainable development principles in regional, national and also in global context.
2. Comprehend the necessity of balancing the mining activities with environmental protection needs.
3. Garner awareness about the social responsibilities of all industrial organizations in general and mining industry in particular.
4. Will develop understanding about the importance of environmental impacts of mining and will develop skill for their quantitative and qualitative assessment.
5. Will obtain sufficient technical skill to formulate mitigation plans against different levels & different spheres of environmental impacts.
6. Will be able to channelize their knowledge towards oriented research studies in the different fields of technology for eco-friendly mining.
7. Conduct published literature survey in search of effective measures towards up-grading specific knowledge on environmental issues.

8. Critically appraise the risk of bias and quality of research in primary studies.
9. Select journals for manual searches based on topical relevance.
10. Develop a strategy for collective descriptive data about primary studies.
11. Develop appropriate analytical skill to present important and relevant data from the primary studies.
12. Understand the implications of systematic review on the subject for research, practice in field and policy making for the mining industry.
13. Will have adequate understanding of the existing laws under Acts, Rules & Regulations for practical implementation of the mining practices
14. Above all, the subject study will have direct effect on the ETHICAL VALUES for Mining Engineers.

Skills- Students can focus on developing newer systematic approach towards mining practices involving eco-friendly, more economic and more efficient from the conservation point of view mining technologies and mining processes.

Employability- Students can use this course for inclusion in their profile and CV for various job opportunities in Industrial field, Academic institutions and Research organizations

Entrepreneurship- Students can use this knowledge to build expertise in aiding mining units and mining companies for updating systematic searches in dealing with different types of mining problems and environmental issues.

Prerequisites

- Students should have basic knowledge and understanding of the different mining processes and technologies.
- The students must have sufficient base to understand the primary and secondary impacts of mining in a broad scale
- Students must be knowledgeable about searching facilities in internets for acquiring relevant data & information at all levels and capacity to interpret these data.

Research Topic

Students will have to select research orientations like:

- Innovative mining technologies in the fields of exploration, development and exploitation of mineral resources.
- Analysis of impacts of mining on economic, social and ecological environment at macro and micro level
- Developing new templates for the review of the dynamics of bottom line parameters of sustainability on mining activities

Assignments

Course assignments will comprise at different stages:

1. Impact analysis of industrial development in post world war period on environment and its exponential growth trajectory in last five decades.
2. The chronology of events leading to the formulation of Brundtland commission report on Sustainable Development and its subsequent developments
3.
4. in Paris Agreement,2015 & COP26, 2021.
5. Unique features of mining industry & formulation of Sustainable Development Framework for mining.
6. 17 Sustainable Development Goals (SDG) and mining industry- An analytical approach
7. Star Rating System as a tool to implement sustainable development principles in Indian mine leaseholds. Analysis of the evaluation template for star rating system
8. Short term & Long term perspectives of Indian energy mix from the point of view of eco-friendly & technologically efficient coal mining in Indian context.

Student Evaluation

Students will receive individual grades on participation on their respective assignments on submission.

1.5 Schedule of the Course

Week	Topics Covered
1st	Evolution of theories related to environmental protection in the era of rapid industrial growth leading to the development of sustainable development principles
2nd	Formulation of Sustainable Development Framework for mining. Analysis of impact of mining activities on environment- on air quality, surface and ground water, land and land use plan and social impacts
3rd	Inclusion of the sustainable development principles in reenacting Acts, Rules and Regulations for new and expanding mining projects
4th	Criteria for establishment of new or expanding mining projects involving forest lands and the laws governing technical, technological and financial implications
5th	Impacts of newly introduced statutory requirements for mining projects on project evaluation and project feasibility. Need for emergence of eco-friendly mining technologies and mining processes.
6th	In-depth analysis of Indian energy security and perspective of Indian coal mining sector in long and short term.

1.6 Award Certificate

The student will be evaluated through attendance, assignments, quizzes and a final test. The student must secure a minimum of 60% of the total marks to get the course completion certificate.

Course Coordinator:

Prof. S.Dasgupta- Department of Mining Engineering, AKS University

Mentors:

- Dr. G K Pradhan- Dean, Faculty of Engineering & Technology, AKS university
- Dr. B K Mishra- HOD, Department of Mining Engineering, AKS University
- Prof. A K Mittal- Director (Training)- AKS University
- Er. P K Palit- Director (RD), AKS University

LIST OF STUDENTS PARTICIAPATES IN ACADEMIC YEAR-2020-2021

SN	Student Code	Students Name
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3	B1755R14408001	KUDIRE PREM SAI
4	B1755R14408005	KUCHANPALLY MURALI KRISHNA
5	B1755R14408012	UMASHANKAR SONGEAR
6	B1755R14408014	VIKALP DESHMUKH
7	B1755R14408006	DEVA BEERAIAH
8	B1755R14408013	SHIVAM GAUTAM
9	B1755R14408016	CHINTHAM SAI SUMAN
10	B1755R14408007	BANDI CHANAKYA
11	B1755R14408015	BARRENKALA MAHESH
12	B1755R14408010	GUDIMALLA SAIKUMAR
13	B1755R14408011	UTKARSH JAIN
14	B1755R14408019	AJAY KEWAT
15	B1755R14408002	BUDDARTHI PAVAN KALYAN
16	B1755R14408003	PONNALA MADHU
17	B1755R14408017	BHUPENDRA CHOUDHARY
18	B1855R14408034	BANDI NARENDRA
19	B1855R14408066	GAJULA SAGAR
20	B1855R14408067	SINGAM DEEKSHITH
21	B1855R14408072	RYAGATI PRAVEEN
22	B1855R14408076	CHITUKURI RAJI REDDY
23	B1855R14408077	SHAIK AFROZ
24	B1855R14408016	ALETI SANTHOSH
25	B1855R14408022	PRASHANT SHARMA
26	B1855R14408024	VAIBHAV DHAR DWIVEDI
27	B1855R14408033	ANNADI KARTHIK REDDY
28	B1855R14408078	NALLAVELLI SAI KUMAR
29	B1855R14408002	ABDUL SAFIQUE
30	B1855R14408006	YERRABOINA SRIKANTH
31	B1855R14408026	UDUTHA SANDEEP
32	B1855R14408030	SUNKARI ABHILASH REDDY
33	B1855R14408031	THOTA RAJKUMAR
34	B1855R14408032	KORE PRAVEEN
35	B1855R14408040	BOREM PRADEEP
36	B1855R14408048	MANDA RAVINDRA

37	B1755R10108026	SATYENDRA PATEL
38	B1755R10108010	ASHWINI KUMAR SAHANI
39	B1755R10108035	NISHANT SONI
40	B1755R10108049	RAHUL KUMAR GUPTA
41	B1755R10108059	MANISH KUMAR PAL
42	B1755R10108050	DHRUV RAJ SHAH
43	B1755R10108036	ANAND PRAKASH BARI
44	B1955R14408018	MALOTH LOKNATH
45	B1955R14408029	AZMEERA NAVEEN
46	B1955R14408030	HATKAR PAVAN
47	B1955R14408059	GAURAV GAUTAM
48	B1955R14408057	SETLA SAICHANDU
49	B1955R14408023	KANAGANTI SAI PRASAD
50	B1955R14408017	JARPULA NAVEEN
51	B1955R14408021	RIPU SUDAN
52	B1955R14408061	ASHWINI RAJ

LIST OF STUDENTS PARTICIAPATES IN ACADEMIC YEAR-2021-2022

1	B1955R14408011	KEKKARLA SANDEEP
2	B1955R14408012	PAVURALA SAICHARAN
3	B1955R14408038	DESHETTI PAVAN
4	B1955R14408033	GUGULOTH ANAND BABU
5	B1955R14408002	AKASH KUMAR SHUKLA
6	B1955R14408003	GUGULOTH SANDEEP
7	B1955R14408052	MOHAMAD SHUKOOR
8	B1955R14408004	SANGA RAVI CHANDAR
9	B1955R14408010	KOTHAGATTU SAIKUMAR
10	B1955R14408054	SADALA RUSHVESH
11	B1955R14408019	MOHAMMAD FAROOQUDDIN
12	B1955R14408028	MEDEPALLY PHANI SAI
13	B1955R14408006	SHAIK ANEEF
14	B1955R14408040	CHILUVERI ARAVIND
15	B1955R14408041	GURIJALA SAI KIRAN
16	B1955R14408039	MERUGU NITHIN
17	B1955R14408024	BACHALA ANIL KUMAR
18	B1955R14408007	TEJAVATH ASHOK
19	B1955R14408001	ABHIMANYU SINGH
20	B1955R14408025	PALAKAPATI SANTHOSH KUMAR
21	B1955R14408026	GOSUKULA VAMSHI KRISHNA
22	B1955R14408032	POLOJU PRASHANTH
23	B1955R14408035	GANDHAM KAMALAKAR
24	B1955R14408036	SURAMALLA SAI TEJA
25	B1955R14408034	CHITTOJI SAIDESWAR
26	B1955R14408043	KORNI ARJUN REDDY
27	B1955R14408047	BATHINI AJAY
28	B1955R14408044	MULA MAHENDER
29	B1955R14408055	POLOJU BHANU PRASAD
30	B1955R14408050	VIJJAGIRI PRUDHVI TEJA
31	B1955R14408045	KASU RAGHU
32	B1955R14408046	PASHAM SHASHIDER REDDY
33	B1955R14408051	CHALLA MADHUKAR
34	B1955R14408037	MAILAGANI SANJEEV
35	B1955R14408042	RAMANCHA DEEPAK
36	B1955R14408048	NAMPELLI RAGHUPATHI
37	B1955R14408027	RISHIKESH PRATAP SINGH

38	B1955R14408058	RASAMANTI VENKATESH
39	B1955R14408022	YETTI PRADEEP
40	B1955R14408049	JAGIRAPU GANESH REDDY
41	B1955R14408053	BIYYANA SAI RISHMANTH
42	B1955R14408056	BODDUPELLI VINAY
43	B1955R14408008	GUNDE AKASH
44	B1955R14408013	UPPUNURI KRISHNA PRAKASH NARAYANA
45	B1955R14408014	PAGOLU ROSHAN
46	B1955R14408015	GUGULOTH ANIL
47	B1955R14408031	BHUKYA MAHESH
48	B1955R14408016	BHUKYA VEERANNA SAI
49	B1955R14408018	MALOTH LOKNATH
50	B1955R14408029	AZMEERA NAVEEN
51	B1955R14408030	HATKAR PAVAN
52	B1955R14408059	GAURAV GAUTAM
53	B1955R14408057	SETLA SAICHANDU
54	B1955R14408023	KANAGANTI SAI PRASAD
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6	B1855R14408071	BARIGELA HARSHAVARDHAN
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10	B1855R14408044	GOUNI VIRINCHI PRANAV
11	B1855R14408046	ANNARAPU RAMAKRISHNA
12	B1855R14408008	SODI SAI KUMAR
13	B1855R14408011	THOGARI RAJKUMAR
14	B1855R14408013	VEERAGANTI NARENDER
15	B1855R14408018	THOTA ROHITH
16	B1855R14408041	VARADABOINA SATISH KUMAR
17	B1855R14408052	NARLA MANISAI
18	B1855R14408015	GUJJULA SAI SUMANTH
19	B1855R14408021	RITESH TIWARI
20	B1855R14408050	GANNEBOINA SATHISH
21	B1855R14408051	RASAKONDA KRANTHIKIRAN
22	B1855R14408057	MEDEPELLI ROHITH
23	B1855R14408060	BODDU RAJESH
24	B1855R14408070	VANKUDOTH HARSHAVARDHAN
25	B1855R14408075	BHUKYA SHIVA KRISHNA
26	B1855R14408053	VUNUKONDA MAHESH
27	B1855R14408061	MARUPAKA SRI SAI PAVAN
28	B1855R14408064	KARUKURI SATYANARAYANA
29	B1855R14408009	SHESHADRI NEERAJ KUMAR
30	B1855R14408010	RAVULA SAI VAMSHI
31	B1855R14408054	YERRA DILEEP
32	B1855R14408055	MILKURI GIRIVARDHAN
33	B1855R14408059	DUBBAKA SANDEEP
34	B1855R14408068	GUGULOTH BALAJI
35	B1855R14408007	SHETTY VINAY PATEL
36	B1855R14408020	JAGIRI JAYANTH
37	B1855R14408029	NIKHIL SINGH
38	B1855R14408043	SACHIN CHATURVEDI

39	B1855R14408074	NITISH KUMAR SINGH
40	B1855R14408014	THATIKONDA VEERABRAHMA CHARY
41	B1855R14408037	ATUL SINGH
42	B1855R14408038	MRIGENDRA SINGH SENGER
43	B1855R14408042	YEMUNDLA SRIDHAR
44	B1855R14408047	NUNNA SUDHEER CHOWDARY
45	B1855R14408049	GAJJELA RANADEEP
46	B1855R14408062	KURELLA KARTHIK
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55	B1855R10108064	ABHISHEK KUMAR
56	B1855R10108024	SHIVENDRA PANDEY
57	B1855R10108015	MADHUKAR SINGH
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59	B1855R10108058	HIMANSHU RAGHUWANSHI
60	B1855R10108001	MOHAN SINGH
61	B1855R10108007	AYUSH PATEL
62	B1855R10108011	PRAKHAR
63	B1855R10108004	SHUBHAM SINGH
64	B1855R10108021	SUMIT SINGH
65	B1855R10108038	ANKIT KUMAR SINGH
66	B1855R10108026	JAIRAM KUMAR
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16	B2155R14408003	AYUSH KUMAR SINGH
17	B2155R14408017	DEVARAPALLI LOKESH
18	B2055R10108007	DHANESH SINGH
19	B2055R10108017	HIMANSHU VISHWAKARMA
20	B2155R14408014	JAI SONI
21	B2055R10108026	KAMAL KISHOR TIWARI
22	B2055R10108012	KARANJEET SINGH BHOGAL
23	B2155R14408009	KHUSHAL TANDEKAR
24	B2055R10108045	KSHIRSAGAR PRAYUSH DINKAR
25	B2055R10108042	MANISH KUMAR
26	B2055R10108021	MUDDASAR ALI KHAN
27	B2155R14408020	NILENDRA SINGH
28	B2155R14408016	NULU JAGADEESH
29	B2155R14408018	PREM KUMAR PRAJAPATI
30	B2155R14408010	PRINCE KUMAR CHATURVEDI
31	B2055R10108020	RAJ KUMAR MAHTO
32	B2055R10108036	RAM PRAVESH CHOUHAN
33	B2055R10108009	RATNESH SHUKLA
34	B2055R10108031	ROHIT KUMAR MANDAL
35	B2155R14408008	RONAK MITRA
36	B2155R14408012	SANDEEP SINGH
37	B2055R10108016	SANKALP TAMRAKAR
38	B2055R10108025	SARWAN KUMAR MANDAL

39	B2055R10108038	SATYAM KUMAR
40	B2155R14408013	SAURABH BHARTI
41	B2155R14408002	SAURABH PATEL
42	B2055R10108034	SHASHANK PRAKASH
43	B2055R10108043	SHRADDHA
44	B2155R14408004	SHUBHAM KUMAR SINGH
45	B2055R10108004	SOURAV BANERJEE
46	B2055R10108030	SRISHTI SONI
47	B2155R14408011	SUDHANSHU JAISWAL
48	B2055R10108044	SUJAL KUMAR
49	B2055R10108010	SUSHIL KUMAR SEN
50	B2055R10108041	SWASTIK MISHRA
51	B2155R14408019	VIKASH KUMAR RAJAK
52	B2055R10108006	YASH SAHU
53	B2155R14408022	YUVRAJ SINGH
54	B2155R10108051-	DEVENDRA KUMAR GUPTA
55	B2155R10108052-	SANJAY SINGH TEKAM
56	B2155R10108053-	JITENDRA SINGH TINGAM
57	B2155R10108054-	SUBHASH KUMAR PATEL
58	B2255R14408002-	BHAVANAM VENKATESWARA REDDY
59	B2255R14408003-	HARSH BHOLA
60	B2255R14408004-	ANUSHKA SINGH
61	B2255R14408005-	ABHISHEK KUMAR
62	B2255R14408007-	PRINCE RANJAN
63	B2255R14408008-	ASHISH KUMAR CHATURVEDI
64	B2255R14408009-	ANKIT SHARMA
65	B2255R14408010-	KESIREDDY CHAITANYA REDDY
66	B2255R14408011-	VIKRAM SINGH PARIHAR
67	B2255R14408012-	MANOJKUMAR S
68	B2255R14408013-	VISHVA T
69	B2255R14408014-	PRASHANT SINGH
70	TB2255R14408002-	KUMAR SHASHANK
71	TB2255R14408003-	SUBHAM KUMAR PRASAD

Value Added Course

Machine Learning Fundamentals Program

Department of Computer Science & Engineering

AKS University Satna (M.P.), India

Course Coordinators
Mr. Lokendra Gaur
Assistant Professor
Department of Computer Science
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AKS University, Satna (M.P.)

Head of Department
Dr. Akhilesh A. Waoo
Head & Associate Dean
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AKS University SATNA

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Contact For Registrations

Dr. Akhilesh Waoo

Course Details

Course Name	**Machine Learning Fundamentals Program**
Total Hrs.	**1 Week**
Duration	**12 October & 16 October 2023**
Students Strength	**40**

Course Objective

To be able to formulate machine learning problems corresponding to different applications. To understand a range of machine learning algorithms along with their strengths and weaknesses. To be able to apply machine learning algorithms to solve problems of moderate complexity.

Course Description

"Machine Learning Fundamentals" is an introductory course designed to provide students with a comprehensive understanding of the core concepts and techniques in machine learning. The course covers the essential principles, algorithms, and applications of machine learning, equipping students with the skills needed to apply these techniques to real-world problems.

Main Objectives for Students

- Grasp Fundamental Concepts
- Implement Machine Learning Algorithms
- Data Preprocessing and Feature Engineering
- Model Evaluation and Selection
- Utilize Machine Learning Tools and Frameworks
- Solve Real-World Problems

Skills

Upon completing the "Machine Learning Fundamentals" course, students will have developed the following key skills:

- Programming Proficiency
- Data Handling and Preprocessing
- Exploratory Data Analysis (EDA)
- Implementation of Machine Learning Algorithms
- Model Evaluation and Validation
- Model Selection and Hyperparameter Tuning
- Use of Machine Learning Frameworks
- Problem-Solving and Critical Thinking
- Communication and Collaboration
- Continuous Learning and Adaptation

Employability

Completing the "Machine Learning Fundamentals" course equips students with a range of skills that significantly enhance their employability in the data science and machine learning job markets. Here are the key employability skills and benefits:

- Technical Proficiency
- Data Manipulation and Analysis
- Model Development and Evaluation
- Tool Proficiency
- Problem-Solving and Critical Thinking

The "Machine Learning Fundamentals" course equips students with a versatile skill set, making them attractive candidates for a wide range of roles in the rapidly evolving field of machine learning and data science. The practical experience and theoretical knowledge gained through the course ensure that graduates are well-prepared to meet the demands of employers and succeed in their careers.

Entrepreneurship

Completing the "Machine Learning Fundamentals" course not only prepares students for employment but also equips them with essential skills to venture into entrepreneurship in the tech and data science sectors. Here are the key entrepreneurial skills gained:

- Technical Expertise
- Innovation and Product Development
- Business Acumen
- Technical Communication
- Agility and Adaptability
- Resource Management

Course Outcome:

Upon completing the "Machine Learning Fundamentals" course, students will achieve the following outcomes:

- Foundational Knowledge
- Technical Proficiency
- Data Handling and Preprocessing

- Algorithm Implementation

By the end of the "Machine Learning Fundamentals" course, students will be equipped with a robust set of skills and knowledge, preparing them for further academic pursuits or immediate entry into the workforce. They will have the capability to apply machine learning techniques to solve complex problems, communicate their results effectively, and continue learning in this rapidly evolving field.

Schedule:

During this Course, we will cover the following Topics:

Day	Date	Session Name
1	**12/Oct./2023**	Introduction to Machine Learning
2	**13/Oct./2023**	Exploratory Data Analysis (EDA)
3	**14/Oct./2023**	Supervised Learning: Linear Regression
4	**15/Oct./2023**	Decision Trees and Random Forests
5	**16/Oct./2023**	Unsupervised Learning: K-Means Clustering

Award of Certificate

The student will be evaluated through attendance, assignments, quizzes and a final test. The student must secure a minimum of 60% of the total marks to get the course completion certificate.


AKS UNIVERSITY SATNA


AKS UNIVERSITY SATNA

Course Coordinators

Mr. Lokendra Gaur
Assistant Professor
Department of Computer Science & Engineering
AKS University, Satna (M.P.)

Head of Department

Dr. Dr. Akhilesh A. Waoo Head & Associate Dean
Department of Computer Science & Engineering
AKS University, Satna(M.P.)

Value Added Course

Connected Realities: Exploring the Internet of Things (IoT)

Department of Computer Science & Engineering

AKS University Satna (M.P.), India

Course Coordinators
Mr. Shankar Bera
Ms. Pragay Shrivastava
Assistant Professor
Department of Computer Science
& Engineering
AKS University, Satna (M.P.)

Head of Department
Dr. Akhilesh A. Waoo
Head & Associate Dean
Department of Computer Science
& Engineering
AKS University, Satna(M.P.)

Course Details

Course Name	Connected Realities: Exploring the Internet of Things (IoT)
Total Hrs.	**2 Days.**
Duration	**12 December & 13 December 2023**
Students Strength	**60**

Course Objective

The objective of the IoT workshop is to provide students with practical knowledge and hands-on experience in IoT technology. Through interactive sessions, students will learn about sensors, data processing, and applications of IoT in real-world scenarios, fostering problem-solving skills and preparing them for future challenges in the field.

Course Description

This IoT workshop offers a comprehensive exploration into the rapidly evolving field of the Internet of Things (IoT). Participants will delve into the fundamental concepts, technologies, and applications driving IoT innovation. Through hands-on activities and practical projects, students will gain proficiency in sensor integration, data analysis, and IoT system development. Topics covered include sensor networks, communication protocols, data visualization, and ethical considerations in IoT deployment. By the end of the workshop, participants will possess the skills and knowledge needed to design, build, and deploy IoT solutions across various domains.

Main Objectives for Students

1. **Understanding IoT Fundamentals:** Introduce students to the basic concepts, components, and principles of IoT systems.
2. **Hands-on Experience:** Provide practical experience in designing, building, and programming IoT devices and systems.
3. **Problem-Solving Skills:** Foster critical thinking and problem-solving abilities through real-world IoT projects and challenges.
4. **Interdisciplinary Learning:** Highlight the interdisciplinary nature of IoT by incorporating elements of computer science, engineering, data science, and more.
5. **Ethical and Social Awareness:** Raise awareness about the ethical, privacy, and security implications of IoT technology and encourage responsible development and use.
6. **Collaboration and Communication:** Promote teamwork, collaboration, and effective communication skills through group projects and activities.
7. **Innovation and Creativity:** Inspire students to explore innovative ideas and applications of IoT technology to address challenges and create new opportunities.

Skills

Students participating in an IoT workshop will acquire a comprehensive set of skills essential for navigating the modern technological landscape. They will develop technical proficiency through hands-on experience in designing, building, and programming IoT devices and systems. Problem-solving abilities will be honed as they tackle real-world challenges within IoT projects. They will gain expertise in data analysis, interpreting insights from sensor-generated data. Interdisciplinary understanding will be cultivated, spanning computer science, engineering, data science, and electronics. Collaboration and communication skills will be enhanced through group projects. Ethical awareness will be fostered, promoting responsible development and use of IoT technology. Finally, innovation and creativity will be encouraged, inspiring students to explore novel applications of IoT for addressing societal challenges.

Employability

After attending an IoT workshop not only equips you with specific technical skills but also enhances your overall employability by fostering a combination of technical expertise, problem-solving capabilities, interdisciplinary knowledge, and soft skills highly sought after by employers.

Entrepreneurship

After an IoT workshop, participants are well-equipped to pursue entrepreneurship ventures. Armed with technical skills, problem-solving abilities, and innovative mindsets, they can develop IoT-based products or services, addressing market needs in areas like smart cities, healthcare, agriculture, and more, fostering innovation and creating entrepreneurial opportunities.

Course Outcome:

Participants will gain proficiency in designing, building, and programming IoT systems. They'll develop problem-solving skills, interdisciplinary understanding, and ethical awareness. Enhanced collaboration, communication, and project management abilities will prepare them for real-world challenges. The workshop fosters innovation and cultivates an entrepreneurial mindset for future endeavors in IoT.

Schedule

During this Course, we will cover the following Topics:

Day	Date	Session Name
1	**12/Dec./2023**	Foundational concepts of IoT, ensuring participants have a strong understanding of IoT Ecosystem & IoT Technologies.
2	**13/Dec./2023**	Hands on Practice and Product Development.

Award of Certificate

The student will be evaluated through attendance, assignments, quizzes and a final test. The student must secure a minimum of 60% of the total marks to get the course completion certificate.

Course Coordinators

Mr. Shankar Bera
Ms. Pragay Shrivastava
Assistant Professor
Department of Computer Science & Engineering
AKS University, Satna (M.P.)

Head of Department

Dr. Dr. Akhilesh A. Waoo Head & Associate Dean
Department of Computer Science & Engineering
AKS University, Satna(M.P.)

Value Added Course

Data Science for Beginners using python

Department of Computer Science & Engineering

AKS University Satna (M.P.), India

Course Coordinators
Mr. Vinay Kumar Dwivedi
Assistant Professor
Department of Computer Science
& Engineering
AKS University, Satna (M.P.)

Head of Department
Dr. Akhilesh A. Waoo
Head & Associate Dean
Department of Computer Science
& Engineering
AKS University, Satna(M.P.)

Course Details

Course Name	Data Science for Beginners using python
Total Hrs.	
Duration	
Students Strength	

Course Objective

The goal of this course is to provide beginners with the essential skills in data science using Python. This will enable them to effectively analyze, visualize, and interpret data. By the end of the course, students will be able to comprehend and apply basic data science concepts, utilize Python for data manipulation, and conduct simple data analyses and visualizations.

Course Description

Data Science for Beginners Using Python" is an introductory course designed to provide students with a comprehensive foundation in data science, focusing on the use of Python for data analysis, visualization, and statistical exploration. This course is ideal for individuals with little to no prior experience in data science or programming, aiming to equip them with the skills necessary to tackle real-world data challenges.

Main Objectives for Students

1. **Understand the Basics of Data Science:**

Grasp fundamental concepts and the significance of data science.

Recognize various applications and industries where data science is utilized.

2. **Proficiency in Python Programming:**

Learn and apply Python programming basics, including syntax, data types, and control structures.

Use Python effectively for data analysis tasks.

3. **Data Manipulation Skills:**

Use Pandas to manipulate and analyze datasets.

Perform data cleaning, transformation, and aggregation operations.

4. **Data Visualization Techniques:**

Create informative and visually appealing plots using Matplotlib and Seaborn.

Understand the principles of good data visualization to convey insights effectively.

5. **Statistical Analysis:**

Apply basic statistical methods to analyze data.

Perform descriptive statistics and simple inferential statistics using Python.

6. **Hands-on Project Experience:**

Engage in practical projects to apply data science concepts to real-world datasets.

Develop a mini-project to demonstrate data analysis and visualization skills.

7. **Mastering Data Science Tools:**

Use Jupyter Notebooks for interactive coding and analysis.

Implement version control with Git and GitHub for managing code and collaboration.

8. **Developing Best Practices:**

Write clean, readable, and efficient Python code.

Learn best practices for data analysis workflows and coding standards.

Skills

Students enrolled in "Data Science for Beginners Using Python" will develop a diverse set of skills that are essential for starting a career in data science. These skills can be broadly categorized into technical, analytical, and professional domains.

Technical Skills:

1. **Python Programming:**

Writing and debugging Python code.

Understanding Python data structures (lists, dictionaries, sets, tuples).

2. **Data Manipulation with Pandas:**

Importing and exporting data in various formats (CSV, Excel, SQL).

Cleaning and transforming datasets.

Aggregating and summarizing data.

3. **Numerical Computation with NumPy:**

Performing numerical operations on arrays.

Utilizing NumPy functions for mathematical computations.

4. **Data Visualization:**

Creating plots and charts using Matplotlib.

Developing advanced visualizations with Seaborn.

Customizing plots for effective data presentation.

5. **Statistical Analysis:**

Computing descriptive statistics (mean, median, standard deviation).

Conducting inferential statistics (t-tests, chi-square tests).

Understanding and applying correlation and regression analysis.

6. **Jupyter Notebooks:**

Writing and executing code interactively.

Documenting analysis with markdown.

Sharing notebooks for collaborative work.

7. **Version Control with Git and GitHub:**

Managing code versions and tracking changes.

Collaborating on projects using GitHub repositories.

Analytical Skills:

1. **Data Cleaning and Preparation:**

Identifying and handling missing or inconsistent data.

Normalizing and scaling data for analysis.

2. **Data Exploration:**

Using exploratory data analysis (EDA) techniques.

Identifying patterns and trends in data.

3. **Statistical Thinking:**

Applying statistical methods to draw meaningful conclusions.

Interpreting statistical results in the context of real-world problems.

4. **Problem-Solving:**

Formulating questions that can be answered with data.

Designing and implementing data analysis workflows to solve specific problems.

Professional Skills:

1. **Effective Communication:**

Presenting data insights through visualizations.

Writing clear and concise reports on data findings.

2. **Project Management:**

Planning and executing data science projects.

Managing time and resources effectively to meet project goals.

3. **Collaborative Work:**

Working in teams using version control systems.

Sharing and reviewing code with peers.

4. **Best Practices in Coding:**

Writing clean, readable, and efficient code.

Following coding standards and documentation practices.

Additional Skills:

1. **Critical Thinking:**

Evaluating data quality and relevance.

Making data-driven decisions based on analysis.

2. **Adaptability:**

Learning new tools and technologies as needed.

Applying learned concepts to various types of data and problems.

Employability

Completing a course like "Data Science for Beginners Using Python" can significantly improve a student's employability by providing essential skills and a strong foundation in data science. This course can contribute to student's employability in the following ways:

Entrepreneurship

Data science skills can be incredibly valuable for entrepreneurs looking to leverage data to create, optimize, and grow their businesses.By leveraging data science skills learned in this course, entrepreneurs can make informed decisions, innovate, and create value-driven businesses that stand out in today's data-centric world.

Course Outcome:

By the end of this course, students will be able to:

Write Python programs for data manipulation and analysis.

Clean and prepare datasets for analysis.

Create and interpret various types of visualizations.

Perform basic statistical analyses using Python.

Apply data science techniques to solve real-world problems.

Use version control systems to manage their code and collaborate with others.

Schedule

During this Course, we will cover the following Topics:

Day	Date	Session Name
1		
2		

Award of Certificate

The student will be evaluated through attendance, assignments, quizzes and a final test. The student must secure a minimum of 60% of the total marks to get the course completion certificate.

Course Coordinators

Mr. Shankar Bera
Ms. Pragay Shrivastava
Assistant Professor
Department of Computer Science & Engineering
AKS University, Satna (M.P.)

Head of Department

Dr. Dr. Akhilesh A. Waoo Head & Associate Dean
Department of Computer Science & Engineering
AKS University, Satna(M.P.)

Value Added Course

Microsoft Azure Certification Program

Department of Computer Science & Engineering

AKS University Satna (M.P.), India

Course Coordinators
Mr. Lokendra Gaur
Assistant Professor
Department of Computer Science
& Engineering
AKS University, Satna (M.P.)

Head of Department
Dr. Akhilesh A. Waoo
Head & Associate Dean
Department of Computer Science
& Engineering
AKS University, Satna(M.P.)

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In **Satna.**

Contact For Registrations

Dr. Akhilesh Waoo

Course Details

Course Name	**Microsoft Azure Certification Program**
Total Hrs.	**1 Week**
Duration	**02 December & 6 December 2022**
Students Strength	**60**

Course Objective

The Microsoft Azure Certification Program encompasses various certifications, each tailored to specific roles and expertise levels within the Azure ecosystem. Below are the general course objectives for the foundational Microsoft Certified: Azure Fundamentals (AZ-900) certification program, which serves as an entry point to other Azure certifications:

- Introduction to Azure
- Core Azure Services
- Azure Solutions and Architectures
- Azure Pricing and Support
- Security, Privacy, Compliance, and Trust
- Azure Management Tools

Course Description

The Microsoft Azure Certification Program offers a range of courses tailored to various roles and expertise levels within the Azure ecosystem. Below is a general course description for the foundational Microsoft Certified: Azure Fundamentals (AZ-900) certification program.

Main Objectives for Students

For students enrolled in the Microsoft Azure Certification Program, the main objectives are designed to equip them with foundational knowledge and skills in cloud computing with a focus on Microsoft Azure services. Here are the main objectives tailored for students:

- Understand Cloud Computing Concepts
- Explore Microsoft Azure Fundamentals
- Develop Practical Skills
- Master Azure Services
- Gain Insights into Azure Security and Compliance

- Prepare for Certification Exam
- Build Problem-Solving Skills

Skills

The Microsoft Azure Certification Program requires a range of skills to succeed in understanding, deploying, managing, and optimizing Azure services and solutions. Here are the key skills needed for the program:

- Cloud Computing Fundamentals
- Azure Services Knowledge
- Hands-On Experience
- Networking and Security
- Storage and Database Management

Employability

The Microsoft Azure Certification Program can significantly enhance employability by equipping individuals with in-demand skills and expertise in cloud computing with a focus on Microsoft Azure. Here are several ways in which this certification can boost employability:

- Industry Recognition:
- High Demand for Azure Skills
- Diverse Career Opportunities
- Competitive Edge in the Job Market
- Salary Advancement
- Global Opportunities

Entrepreneurship

The Microsoft Azure Certification Program can be a catalyst for entrepreneurial endeavors, empowering individuals to leverage their Azure skills to create innovative solutions, offer cloud services, and build successful businesses. Here's how Azure certification can support entrepreneurship:

- Cloud Service Provider

- Solution Development
- Managed Services Provider (MSP)
- Data Analytics and AI Solutions
- Internet of Things (IoT) Solutions

Course Outcome:

The outcomes of completing the Microsoft Azure Certification Program encompass a broad range of skills, knowledge, and achievements that prepare individuals for success in cloud computing with a focus on Microsoft Azure. Here are the key course outcomes:

- Comprehensive Understanding of Azure
- Proficiency in Azure Services
- Hands-On Experience
- Cloud Architecture and Design Skills
- Security and Compliance Expertise
- Cost Management and Optimization

Schedule

During this Course, we will cover the following Topics:

Day	Date	Session Name
1	**02/Oct./2022**	• Understand Cloud Computing Concepts
2	**03/Dec./2022**	Explore Microsoft Azure Fundamentals
3	**04/Dec./2022**	Develop Practical Skills
4	**05/Dec./2022**	Master Azure Services
5	**06/Dec./2022**	Gain Insights into Azure Security and Compliance

Award of Certificate

The student will be evaluated through attendance, assignments, quizzes and a final test. The student must secure a minimum of 60% of the total marks to get the course completion certificate.


AKS UNIVERSITY SATNA


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Course Coordinators

Mr. Lokendra Gaur
Assistant Professor
Department of Computer Science & Engineering
AKS University, Satna (M.P.)

Head of Department

Dr. Dr. Akhilesh A. Waoo Head & Associate Dean
Department of Computer Science & Engineering
AKS University, Satna(M.P.)

AKS UNIVERSITY, SATNA

CodeChef Program

Session Start : 31/10/2022

Session End : 05/12/2022

Co-Ordinator
Mr. Santosh Soni
(Asst. Proffesor)

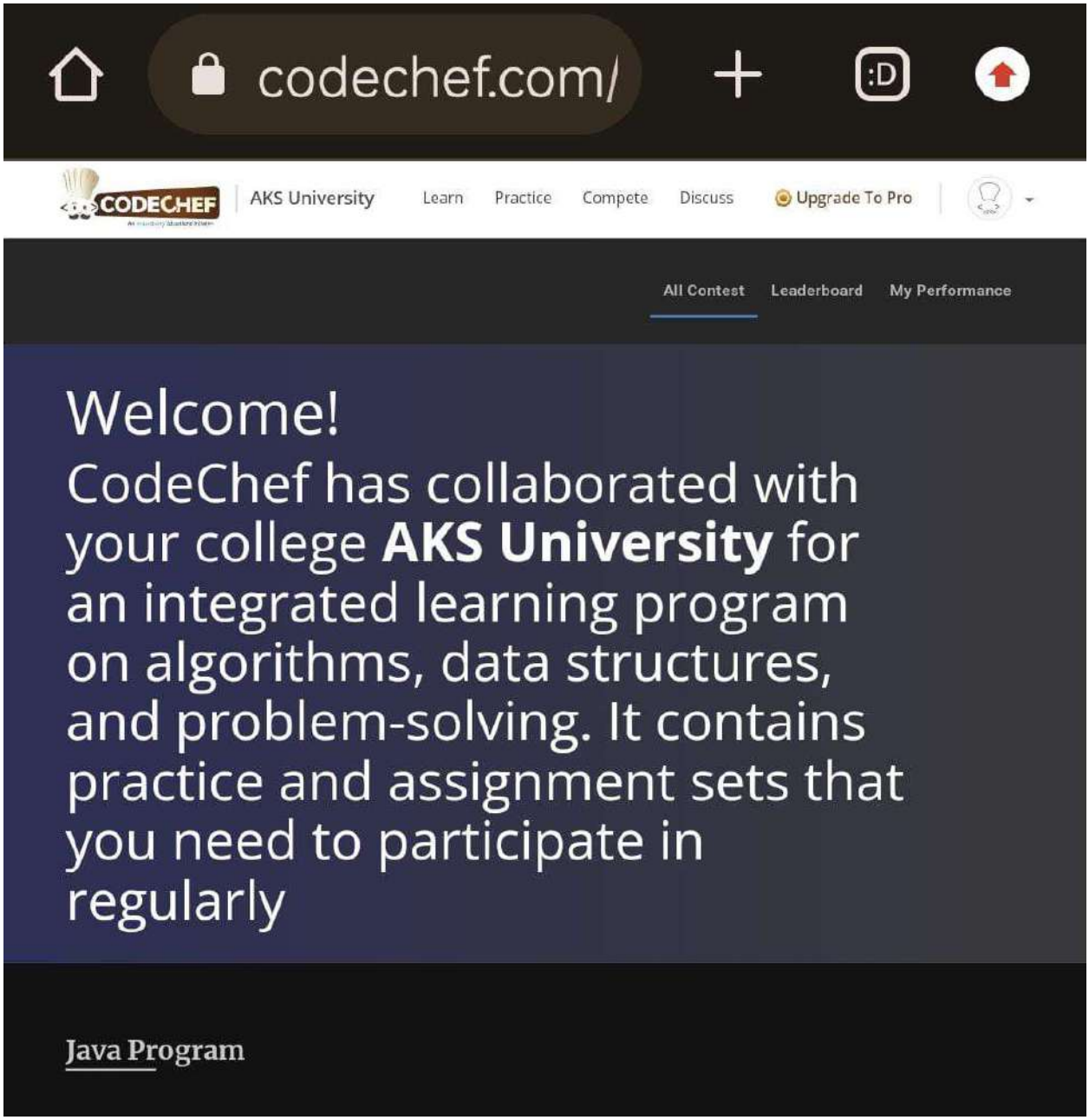
HOD
Computer Science & Engineering
Mr . Akhilesh A. Waoo

CodeChef Report

Our University is enrolled in CodeChef Learning Program. This Program is an 11-week integrated learning program where we will share weekly practice and assignment sets related to topics taught by your faculty.

With www.codechef.com/college/contests to view current practice and assignment weeks running in your college. We can track performance via a dashboard. We can also get top performers' details with 4, 9, and 11 weeks.

Codechef Java based contest started in 4 levels each level has 5 questions. Each question has 100 marks. Additional assignment questions were given in 3 and 4 levels. Additional marks were given. Out of all 86 participants, first 4 were selected.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CODECHEF
AKS University
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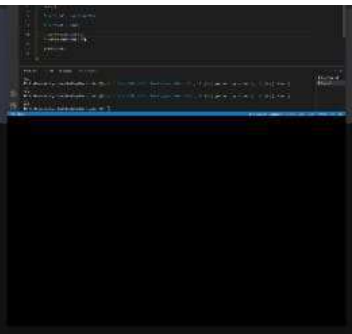
Leaderboard
My Performance
Welcome!
CodeChef has collaborated with your college AKS University for an integrated learning program on algorithms, data structures, and problem-solving. It contains practice and assignment sets that you need to participate in regularly
Java Program

S.No	Topic	Contest Code	Start Date	End Date	Status
1	Week 4	AKSSPP04	05/12/2022, 18:00:00	12/12/2022, 18:00:00	Upcoming
2	Week 3	AKSSPP03	28/11/2022, 18:00:00	05/12/2022, 18:00:00	Upcoming
3	Week 2	AKSSPP02	21/11/2022, 18:00:00	28/11/2022, 18:00:00	Ongoing
4	Week 1	AKSSPP01	31/10/2022, 19:00:00	14/11/2022, 19:00:00	Ended

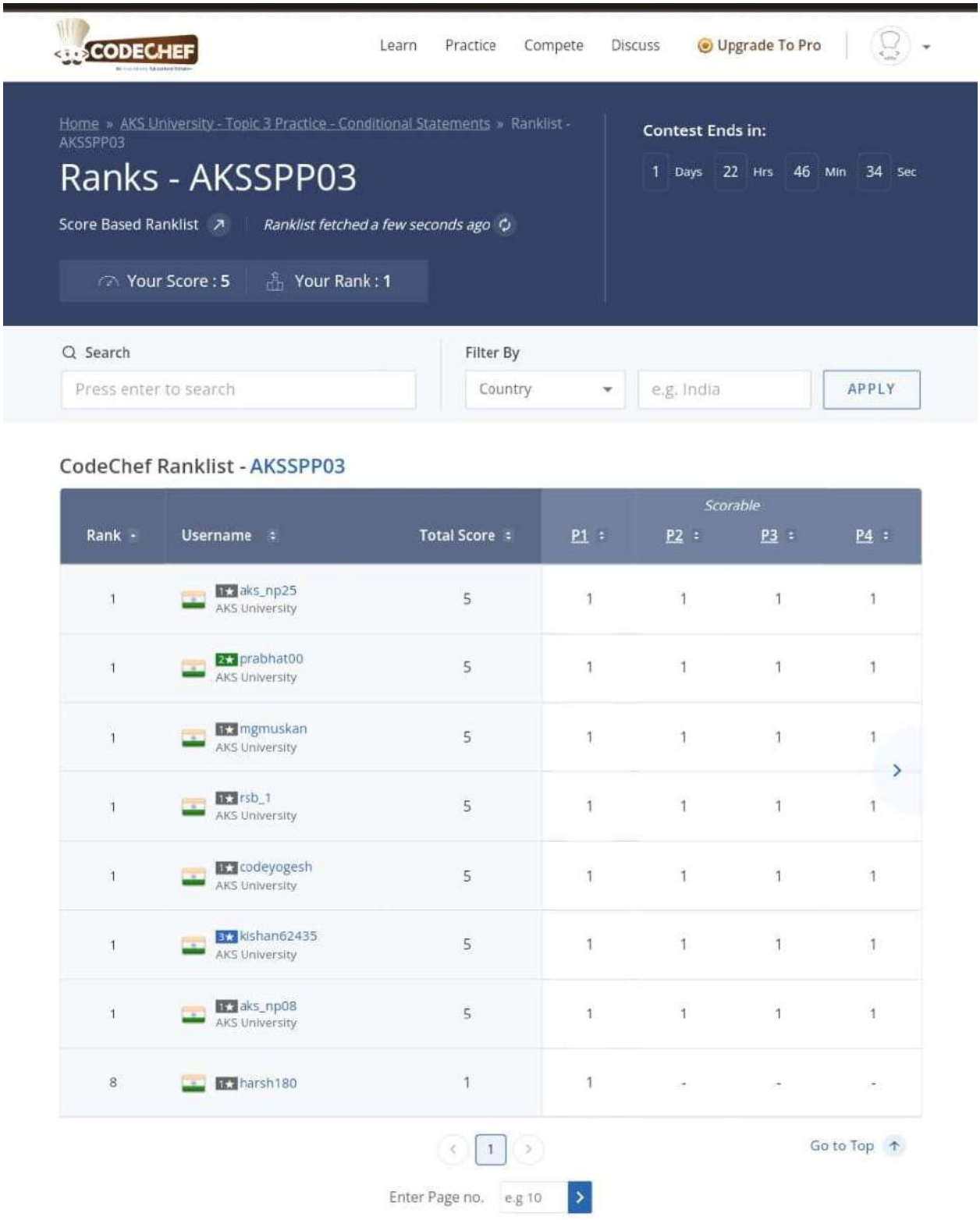
Leaderboard



Java Program

Top 20 Students Highest Scores

Rank	Name / Roll No	Practice Score	Assignment Score	Total Score
1	kishan62435	1109	501	1610
1	mgmuskan	1109	501	1610
2	prabhat00	1109	NA	1109
2	codeyogesh	1109	NA	1109
2	aks_np01	1109	NA	1109
3	aks_np25	1008	NA	1008
4	aks_np12	1005	NA	1005
5	tanmayeshwar	909	NA	909
5	rsb_1	909	NA	909
6	aks_np08	708	NA	708
6	aks_np04	708	NA	708
7	aks_np21	705	NA	705
8	aks_np30	703	NA	703
9	aks_np16	501	NA	501
10	aks_np37	500	NA	500
10	aks_np05	500	NA	500
10	aks_np32	500	NA	500
10	aks_np15	500	NA	500
10	aks_np26	500	NA	500
11	harsh180	401	NA	401


CODECHEF
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Practice
Compete
Discuss
Upgrade To Pro
Home » AKS University - Topic 3 Practice - Conditional Statements » Ranklist - AKSSPP03
Ranks - AKSSPP03
Score Based Ranklist
Ranklist fetched a few seconds ago
Your Score : 5
Your Rank : 1
Contest Ends in:
1 Days 22 Hrs 46 Min 34 Sec
Search
Press enter to search
Filter By
Country
e.g. India
APPLY
CodeChef Ranklist - AKSSPP03
Rank
Username
Total Score
Scorable
P1
P2
P3
P4
1 aks_np25 AKS University 5 1 1 1 1
1 prabhat00 AKS University 5 1 1 1 1
1 mgmuskan AKS University 5 1 1 1 1
1 rsb_1 AKS University 5 1 1 1 1
1 codeyogesh AKS University 5 1 1 1 1
1 kishan62435 AKS University 5 1 1 1 1
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AKS UNIVERSITY, SATNA

International Web Colloquium on Cyber Cloud Computing

Session Start : 25/09/2023

Session End : 30/09/2023

Co-Ordinator
Mrs. Shruti
(Asst. Professor)

HOD
Dr . Akhilesh A. Waoo
Computer Science & Engineering

Course Details

Course Name	**International Web Colloquium on Cyber Cloud Computing**
Total Hrs.	**6 Days.**
Duration	**25th September to 30th September 2023**
Students Strength	**50**

Course Description:

This course is designed to provide an in-depth understanding of cyber cloud computing. Participants will explore key concepts, technologies, and applications of cloud computing in the context of cybersecurity. The course will cover cloud architectures, service models, security challenges, risk management, and emerging trends.

Course Objective

- Understand the fundamentals of cloud computing and its service models
- Identify and analyze security challenges in cloud environments
- Explore risk management and compliance in cloud computing
- Examine emerging trends and technologies in cyber cloud computing
- Develop strategies for implementing secure cloud solutions

Target Audience:

- IT professionals and cybersecurity experts
- Cloud service providers and consultants
- Students and researchers in computer science and information technology
- Business leaders and decision-makers interested in cloud technologies

Main Objectives for Students

1. Understanding Cloud Computing Fundamentals:

- Gain a comprehensive understanding of cloud computing concepts, architectures, and service models (IaaS, PaaS, SaaS).
- Explore the different deployment models (Public, Private, Hybrid, Community) and their use cases.

2. Identifying Security Challenges:

- Identify common security challenges and threats in cloud environments, such as data breaches, insecure APIs, and account hijacking.

- Understand the implications of multi-tenancy and isolation in cloud security.

3. Designing Secure Cloud Architectures:

- Learn to design secure cloud architectures using best practices for Identity and Access Management (IAM), encryption, and data protection.
- Implement security measures to protect cloud infrastructure and applications.

4. Managing Risks and Ensuring Compliance:

- Conduct risk assessments and develop risk management plans tailored to cloud environments.
- Understand and comply with regulatory frameworks such as GDPR, HIPAA, and other relevant laws and standards.

5. Exploring Emerging Trends and Technologies:

- Stay informed about the latest trends and innovations in cloud computing, such as edge computing, serverless architectures, and the integration of AI and ML.
- Assess how these emerging technologies impact cloud security.

6. Utilizing Cloud Security Solutions and Tools:

- Gain hands-on experience with popular cloud security tools and solutions, including Security Information and Event Management (SIEM) and Cloud Security Posture Management (CSPM).
- Develop and implement comprehensive cloud security strategies using these tools.

7. Developing Practical Skills:

- Participate in labs and practical exercises to apply theoretical knowledge in real-world scenarios.
- Work on a capstone project to design and present a secure cloud solution, demonstrating the skills acquired throughout the course.

8. Encouraging Collaborative Learning:

- Engage in discussions, group activities, and brainstorming sessions to foster collaborative learning and knowledge sharing.
- Benefit from the insights and experiences of industry experts and guest speakers.

By achieving these objectives, participants will be well-equipped to navigate the complexities of cyber cloud computing and implement robust security measures to protect cloud environments.

Schedule:

During this Course, we will cover the following Topics:

Day	Date	Session Name
1	25/09/2023	**Overview of Cloud Computing** - Definition and characteristics - Cloud service models (IaaS, PaaS, SaaS) - Deployment models (Public, Private, Hybrid, Community)
2	26/09/2023	**Cloud Architecture and Service Models** - Infrastructure as a Service (IaaS): Virtualization, Storage, Networking - Platform as a Service (PaaS): Application Development, Deployment - Software as a Service (SaaS): Software Delivery, Licensing - Lab: Setting up a virtual machine on a cloud platform (e.g., AWS, Azure) - Discussion: Compare and contrast different cloud service models
3	27/09/2023	**Security Challenges in Cloud Computing** - Lecture: Common Security Issues and Threats - Data breaches, Insecure APIs, Account hijacking - Multi-tenancy and isolation - Case Study: Analysis of a recent cloud security incident - Group Activity: Brainstorming session on mitigating cloud security risks.
4	28/09/2023	**Emerging Trends and Technologies** - Lecture: Innovations in Cloud Computing - Edge Computing, Serverless Architectures, AI and ML in the cloud - Guest Speaker: Industry expert on the future of cloud computing - Discussion: How emerging technologies are shaping the future of cloud security

5	**29/09/2023**	**Cloud Security Solutions and Tools** - Lecture: Overview of Cloud Security Solutions - Security Information and Event Management (SIEM) - Cloud Security Posture Management (CSPM) - Lab: Hands-on with popular cloud security tools (e.g., AWS GuardDuty, Azure Security Center) - Project: Propose a comprehensive security solution for a given cloud scenario
6	**30/09/2023**	**Course Review and Capstone Project** - Lecture: Course Summary and Key Takeaways - Capstone Project Presentation - Participants will present their comprehensive cloud security strategy developed over the course - Feedback Session: Course evaluation and feedback

Block Chain Technology and its Application

Department of Computer Science & Engineering

AKS University Satna (M.P.), India

Course Coordinators
Mr. Rajneesh Shrivastava
Assistant Professor
Department of Computer Science
& Engineering
AKS University, Satna (M.P.)

Head of Department
Dr. Akhilesh A. Waoo
Head & Associate Dean
Department of Computer Science
& Engineering
AKS University, Satna (M.P.)

Session Start: 15/12/2023 Session End:16/12/2023

Course Details

Course Name	Block Chain Technology & its Application
Total Hrs.	**2 Days.**
Duration	**15 December & 16 December 2023**
Students Strength	**60**

Course Objective

- The course objective for a Blockchain Technology course typically includes to Understand the fundamental concepts of blockchain technology. and Learn about the history and evolution of blockchain. and Grasp the basics of cryptographic principles used in blockchain. lastly Understand how security is maintained in a blockchain environment. This outline ensures that students gain a comprehensive understanding of blockchain technology and its applications, preparing them for careers or further research in this evolving field.

Course Description

This course provides a comprehensive introduction to blockchain technology, exploring its fundamental principles, architecture, and diverse applications. Students will delve into the cryptographic techniques that underpin blockchain's security, understand the decentralized nature of blockchain networks, and learn how blockchain can transform various industries. This course is designed for students, professionals, and enthusiasts aiming to acquire in-depth knowledge of blockchain technology and its transformative potential across industries.

Main Objectives for Students

Understand Fundamental Concepts:

- ✓ Grasp the basic principles of blockchain technology, including decentralization, distributed ledger technology (DLT), and peer-to-peer networks.
- ✓ Learn about the historical evolution and significance of blockchain.

Master Cryptographic Techniques:

- ✓ Comprehend essential cryptographic concepts such as hashing, digital signatures, and public-key cryptography.
- ✓ Understand how cryptography ensures the security and integrity of blockchain data.

Explore Blockchain Architecture:

- ✓ Analyze the structure of a blockchain, including blocks, chains, nodes, and transactions.
- ✓ Study various consensus mechanisms (e.g., Proof of Work, Proof of Stake) and their roles in achieving agreement within the network.

Develop Smart Contracts and DApps:

- ✓ Learn the principles and benefits of smart contracts.
- ✓ Gain practical skills in developing, testing, and deploying smart contracts on platforms like Ethereum.
- ✓ Build and operate decentralized applications (DApps).

Evaluate Blockchain Platforms:

- ✓ Explore and compare different blockchain platforms such as Bitcoin, Ethereum, Hyperledger, and others.
- ✓ Assess the strengths, weaknesses, and use cases of each platform.

Skills

To effectively learn and work in blockchain technology, students and professionals should develop a diverse set of skills. These can be categorized into technical, analytical, practical, soft skills, domain-specific knowledge, and research capabilities. By developing these skills, individuals will be well-equipped to understand, develop, and implement blockchain solutions, making them valuable contributors to the field of blockchain technology.

Employability

The blockchain technology sector offers numerous opportunities across various roles and industries. As blockchain technology continues to evolve and integrate into different sectors, the demand for skilled professionals is growing. Here are key employability factors and potential career paths in blockchain technology The employability in blockchain technology is robust and expanding. By developing the necessary technical, analytical, and soft skills, along with gaining practical experience and industry-specific knowledge, individuals can position themselves for a successful career in this dynamic and transformative field.

Entrepreneurship

Attending a blockchain technology workshop can open numerous entrepreneurial opportunities for participants. By gaining knowledge and practical skills in blockchain technology, participants can identify gaps in the market and develop innovative solutions. Here are some potential entrepreneurial ventures and business ideas in the blockchain space. By leveraging the knowledge and skills gained from a blockchain technology workshop, participants can explore these entrepreneurial opportunities and contribute to the growing blockchain ecosystem.

Course Outcome:

Upon completing a course in blockchain technology, students should achieve several key outcomes that equip them with the knowledge and skills to apply blockchain principles and techniques effectively. By the end of the course, students will have a robust understanding of blockchain technology, practical skills in blockchain development, and the ability to apply blockchain solutions across various industries. They will be well-prepared to pursue careers in blockchain development, consulting, project management, and entrepreneurship, as well as to continue learning and innovating in the rapidly evolving blockchain ecosystem.

Schedule

During this Course, we will cover the following Topics:

Day	Date	Session Name
1	15/Dec./2023	Foundational concepts of Block Chain Technology, ensuring participants have a strong understanding of Block chain Technology & Its applications.
2	16/Dec./2023	Block Chain Architecture, tools and its application.

Award of Certificate

The student will be evaluated through attendance, assignments, quizzes and a final test. The student must secure a minimum of 60% of the total marks to get the course completion certificat

Memorandum of Understanding (MOU)

AKS University Satna, (M.P.)

Department of Computer Science & Engineering

And

Red Hat Training

Institution Name: AKS University, Satna
SPoC Name: Dr. Akhilesh A Waoo
SPoC Email id: akhileshwaoo@gmail.com>

Memorandum of Understanding (MOU) between an AKS University Satna and Red Hat aims to outline a collaborative partnership focused on enhancing educational opportunities and skill development. Here are the common purposes and objectives of such an MOU

Skill Development and Training:

- To provide students with access to various online learning resources, courses, and Certifications through Red Hat.
- To offer training programs that align with industry requirements, thereby improving the Employability of students.

Faculty Development:

- To provide faculty members with training and development programs to enhance their Teaching methodologies and subject matter expertise.
- To facilitate faculty participation in workshops, seminars, and conferences organized by Red Hat.

Internships and Projects:

- To offer students opportunities for internships, live projects, and hands-on experience with real-world industry problems.
- To provide a platform for students to work on collaborative projects and gain practical experience.

Research and Innovation:

- To promote joint research initiatives and innovative projects between the educational organization and Red Hat.
- To support the establishment of research labs or innovation centers focusing on emerging technologies.

Career Support and Placement:

- To assist students with career guidance, counselling, and placement support through Red Hat network.

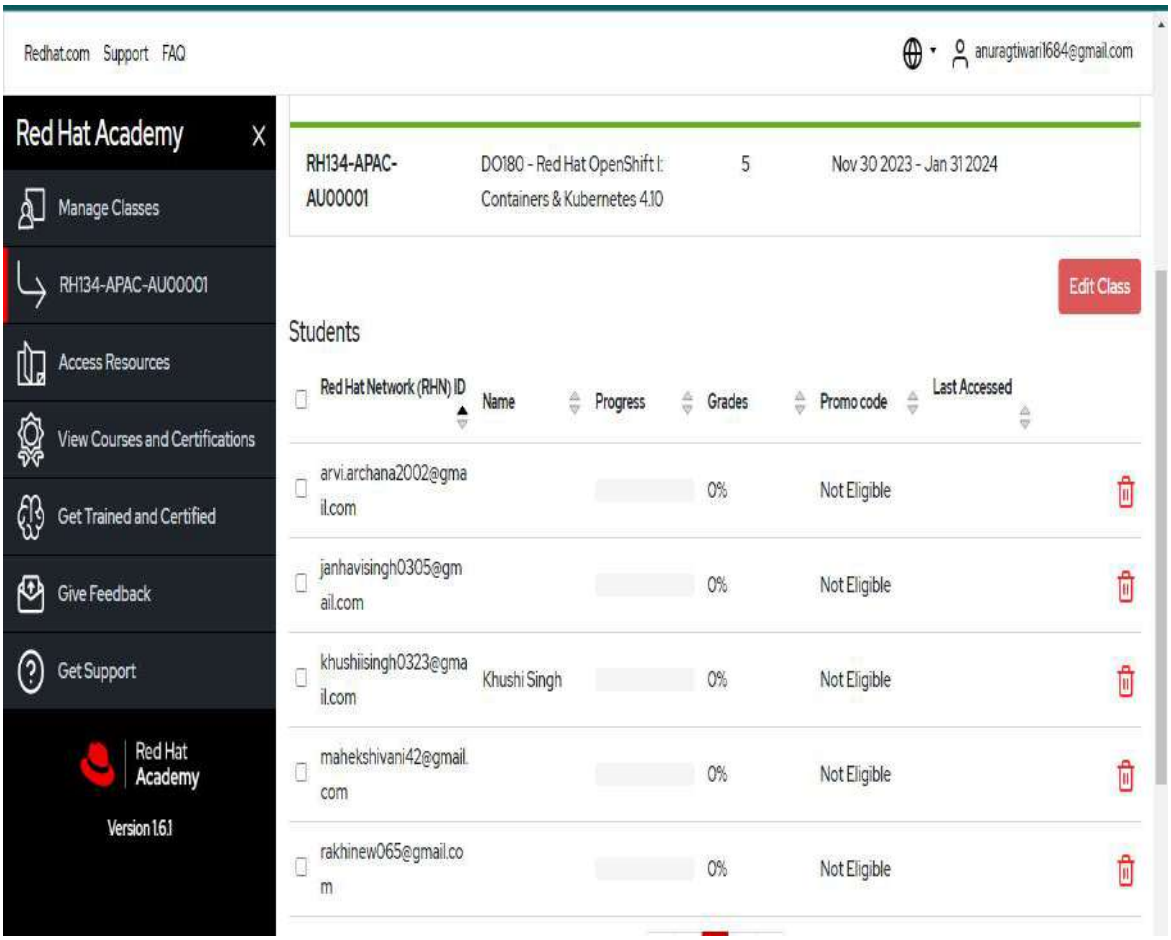
- To organize campus recruitment drives, job fairs, and employability enhancement programs.

Community and Outreach Programs:

- To engage in community development projects and outreach programs that benefit the broader society.
- To support initiatives aimed at digital literacy and skill development in underserved communities.

Monitoring and Evaluation:

- To establish a framework for monitoring the progress and impact of the collaborative initiatives.
- To conduct regular reviews and assessments to ensure the objectives of the MOU are being met.



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Program:

Value Added Course

Rostris InfoTech

Department of Computer Science & Engineering

AKS University Satna (M.P.), India

Course Coordinators

Mr. Anurag Tiwari

Assistant Professor

Department of Computer Science & Engineering

AKS University, Satna (M.P.)

Head of Department

Dr. Akhilesh A. Waoo

Head & Associate Dean

Department of Computer Science & Engineering

AKS University, Satna (M.P.)

Program Detail:

Course Name: Docker and kubernetes

Total Hrs. 40 hrs.

Duration: 20 November 2023 to 24 November 2023

Details of the Program:

In Linux, a "program" typically refers to an executable file that performs a specific task or set of tasks when run. These programs can range from simple scripts written in scripting languages like Bash, Python, or Perl to complex software applications like web browsers, text editors, or office suites.

The topics covered in this program include:

A program focusing on Docker and Kubernetes typically covers a range of topics related to containerization, container orchestration, and deployment of containerized applications. Here are the key topics often included:

Containerization Basics:

Introduction to containerization and its benefits.

Understanding Docker and its architecture.

Docker file creation and best practices.

Building, running, and managing Docker containers.

Docker Advanced Features:

Docker networking and storage.

Docker Compose for multi-container applications.

Docker volumes and data management.

Docker security best practices.

Docker registries and image distribution.

Kubernetes Introduction:

Introduction to Kubernetes and its architecture.

Understanding Kubernetes components (e.g., API server, etcd, kubelet, kube-proxy).

Kubernetes resources (e.g., pods, services, deployments, replica sets).

Kubernetes networking concepts (e.g., services, Ingress, network policies).

Kubernetes storage options.

Learning outcome:

The learning outcomes for a Docker and Kubernetes program typically revolve around both theoretical understanding and practical skills. Here are some common learning outcomes:

- Understanding Containerization Concepts
- Proficiency in Docker
- Understanding Kubernetes
- Deployment and Orchestration Skills
- Operations and Maintenance

Prerequisite:

Before diving into learning Docker and Kubernetes, it's beneficial to have a solid understanding of certain foundational concepts and technologies.

Linux Fundamentals: Since both Docker and Kubernetes originated in the Linux ecosystem, familiarity with basic Linux concepts such as the command line interface, file system navigation, permissions, and basic shell scripting is essential.

Networking Basics: Understanding fundamental networking concepts like IP addresses, subnets, DNS, and HTTP/HTTPS protocols is crucial for working with Docker and Kubernetes, especially when configuring networking for containerized applications.

Version Control: Proficiency with version control systems like Git is highly recommended, as version control is often used in conjunction with Docker and Kubernetes for managing code and configurations.

Containerization Concepts: While not mandatory, having a conceptual understanding of containerization and how it differs from traditional virtualization can be helpful. Knowledge of containerization principles can make it easier to grasp Docker and Kubernetes concepts.

Web Development Experience: Basic knowledge of web development concepts such as client-server architecture, web servers (e.g., Apache, Nginx), and databases (e.g., MySQL, PostgreSQL) can be advantageous, as many containerized applications are web-based.

Main Objectives for Students

For students learning Docker and Kubernetes, the main objectives typically include gaining a solid understanding of the core concepts, developing practical skills for deploying and managing containerized applications, and preparing for real-world scenarios in software development and operations.

- Understanding Containerization

- Mastering Docker
- Exploring Kubernetes
- Practical Deployment Skills
- Operational Proficiency

Employability: Students can use this course as including it in their profile to apply for various job opportunities as developer in IT Industry.

Award of Certificate

The student will be evaluated through attendance, assignments, quizzes and a final test. The student mustsecure a minimum of 60% of the total marks to get the course completion certificate.


Program Coordinator

Mr. Anurag Tiwari

Department of Computer Science & Engineering

AKS University Satna (M.P.)

Head OF Department

Dr. Akhilesh A. Waoo

Department of Computer Science & Engineering

AKS University Satna (M.P.)

Value Added Course

Infosys Spring Board

Technical master classes on AI Foundation.

Department of Computer Science & Engineering

AKS University Satna (M.P.), India

Course Coordinators
Mr. Chandra Shekhar Gautam
Assistant Professor
Department of Computer
Science & Engineering
AKS University, Satna (M.P.)

Head of Department
Dr. Akhilesh A. Waoo
Head & Associate Dean
Department of Computer Science & Engineering
AKS University, Satna(M.P.)

Infosys Spring Board

Course Details

Course Name:

- Python
- AI Foundation
- Cyber Security
- Cloud Computing
- Deep Learning

Total Hrs. 12 hrs.

Duration :31October to 3 November 2023

Course Objective

This course focuses on Artificial Intelligence case studies, industry implementations, AI concepts.

Get guidance from our subject matter expert who will share valuable industry insights to enhance your Artificial Intelligence skills.

This course focuses on the models, tools, and techniques for enforcement of security with some emphasis on the use of cryptography. Students will learn security from multiple perspectives.

Course Description

During this Master class, we will cover the following Topics:

Day	Date	Session Name
1	31-Oct-23	Briefing about the sessions, Briefing about Python
2	1-Nov-23	Introduction to Artificial Intelligence
3	2-Nov-23	Introduction to Deep Learning
4	3-Nov-23	Introduction to Natural Language Processing

Main Objectives for Students

- To become familiar with AI.
- To learn appropriate methodology for AI application development and the steps needed to complete this.
- TO become familiar with algorithms for machine leaning and Deep learning.
- To develop skills in python programming.
- To become familiar with cloud computing.
-

Skills

Students can focus on developing newer systematic knowledge about AI Foundation, Cloud Computing, Cyber Security. which stands as high impact evidence in the recent area.

Employability: Students can use this course as including it in their profile to apply for various job opportunities as developer in IT Industry.

Entrepreneurship: Students can use this knowledge to build expertise cloud computing, AI.

Course Outcome:

- Understand the informed and uninformed problem types and apply search strategies to solve them.
- Apply difficult real-life problems in a state space representation so as to solve them using AI techniques like searching and game playing.
- Learn the basics of learning problems with hypothesis and version spaces.
- Understand the features of machine learning to apply on real world problems.
- To develop an understanding of computing paradigms and compare them.
- To be able to choose a particular deployment model according to scenario.
- Design and develop cloud and implement various services on cloud.
- the students will be able to develop basic understanding of security, cryptography, system attacks and defenses against them.

Schedule:

Day	Date	Session Name
1	31-Oct-23	Briefing about the sessions, Briefing about Python

2	1-Nov-23	Introduction to Artificial Intelligence
3	2-Nov-23	Introduction to Deep Learning
4	3-Nov-23	Introduction to Natural Language Processing

Prerequisites

Student should have knowledge of Computer Fundamental.
Student should have knowledge about basic concept of Programming.

Award of Certificate

The student will be evaluated through attendance, assignments, quizzes and a final test. The student mustsecure a minimum of 60% of the total marks to get the course completion certificate.

Course Coordinator

Mr. Chandra Shekhar Gautam
Department of Computer Science & Engineering
AKS University Satna (M.P.)

Head OF Department

Dr.Akhilesh A Woo
Department of Computer Science & Engineering
AKS University Satna (M.P.)

AKS UNIVERSITY, SATNA

Certification course on Cyber Security

Session Start : 20/09/2023 Session End : 30/12/2023

Co-Ordinator
Ms.Jyoti Dwivedi
HOD : Dr . AkhileshAWaoo

Computer Science & Engineering

Course Details

Course Name	**Cybersecurity Certification Course**
Tenure	**12 weeks**
Level	**Intermediate to Advanced**
Prerequisites	**Basic knowledge of computer systems and networks**

Course Structure:

1. Introduction to Cyber Security
2. Fundamentals of Network Security
3. Cryptography
4. Security Operations
5. Application Security
6. Incident Response and Management
7. Ethical Hacking and Penetration Testing
8. Compliance and Governance
9. Emerging Threats and Security Solutions
10. Cyber Security Tools and Practices
11. Capstone Project
12. Certification Exam Preparation

Week 1: Introduction to Cybersecurity

Lecture 1: Understanding Cybersecurity

- Definition and importance
- History of cybersecurity
- Key concepts and terminologies
- Lecture 2: Types of Cyber Threats
- Malware (viruses, worms, trojans)
- Phishing
- Ransomware
- Denial of Service (DoS) attacks

Lab 1: Setting Up a Virtual Lab Environment

Week 2: Networking Fundamentals

Lecture 1: Networking Basics

- OSI and TCP/IP models
- IP addressing and subnetting
- Common network protocols (HTTP, HTTPS, FTP, etc.)

Lecture 2: Network Devices and Topologies

Routers, switches, firewalls

Network topologies (star, mesh, hybrid)

Lab 2: Network Configuration and Analysis

Week 3: Cryptography

Lecture 1: Introduction to Cryptography

- Basic concepts and terminologies
- Symmetric vs. asymmetric encryption
- Lecture 2: Cryptographic Protocols
- SSL/TLS
- Public Key Infrastructure (PKI)

Lab 3: Implementing Encryption and Decryption

Week 4: Security Operations and Incident Response

Lecture 1: Security Operations Centers (SOCs)

- Role and responsibilities
- Tools and technologies

- Lecture 2: Incident Response
- Incident response lifecycle
- Common incident response tools

Lab 4: Simulating an Incident Response

Week 5: Threat Intelligence and Analysis

Lecture 1: Understanding Threat Intelligence

- Sources of threat intelligence
- Analyzing threat data

Lecture 2: Tools for Threat Analysis

SIEM systems

Threat intelligence platforms

Lab 5: Using Threat Intelligence Tools

Week 6: Vulnerability Management

Lecture 1: Identifying Vulnerabilities

Common vulnerabilities and exposures (CVEs)

Vulnerability assessment methodologies

Lecture 2: Remediation and Mitigation

Patch management

Security patches and updates

Lab 6: Conducting a Vulnerability Assessment

Week 7: Penetration Testing

Lecture 1: Introduction to Penetration Testing

Penetration testing methodologies

Legal and ethical considerations

Lecture 2: Tools and Techniques

Reconnaissance

Exploitation

Lab 7: Performing a Basic Penetration Test

Week 8: Secure Software Development

Lecture 1: Secure Coding Practices

Common coding vulnerabilities

Secure coding standards

Lecture 2: Application Security Testing

Static and dynamic analysis

Code review and testing tools

Lab 8: Implementing Secure Code

Week 9: Cloud Security

Lecture 1: Cloud Computing Basics

Cloud service models (IaaS, PaaS, SaaS)

Cloud deployment models (public, private, hybrid)

Lecture 2: Cloud Security Challenges

Identity and access management (IAM)

Data protection in the cloud

Lab 9: Configuring Security in a Cloud Environment

Week 10: Compliance and Legal Issues

Lecture 1: Cybersecurity Regulations and Standards

GDPR, HIPAA, PCI-DSS

NIST Cybersecurity Framework

Lecture 2: Legal and Ethical Issues

Data privacy laws

Cyber ethics

Lab 10: Compliance Assessment

Week 11: Advanced Topics in Cybersecurity

Lecture 1: Emerging Threats and Technologies

- AI in cybersecurity
- Quantum computing and security

Lecture 2: Cybersecurity in Critical Infrastructures

- Industrial control systems (ICS)
- Smart grids and IoT security

Lab 11: Exploring Advanced Cybersecurity Tools

Week 12: Capstone Project and Review

Lecture 1: Course Review and Q&A

- Recap of key concepts and skills
- Open discussion

Lecture 2: Capstone Project Presentation

- Students present their projects
- Peer review and feedback

Lab 12: Final Project Submission

Report on
Value Added Program on **Intellectual Property Rights (IPR)**

Course Coordinator - Dr. Akhilesh A. Waoo, Head IPR.
Expert Lecture by- Dr. Ashish Mishra, Jabalpur

1. Introduction

Intellectual Property Rights (IPR) are crucial for protecting the creations of the human intellect, fostering innovation, and promoting economic growth. Recognizing the significance of IPR, a value-added program was initiated to enhance the understanding and utilization of intellectual property assets.

2. Objectives

- To educate participants about the importance of IPR in various sectors.
- To provide practical insights into the process of obtaining and managing IPR.
- To empower participants with skills to effectively leverage IPR for business growth and innovation.

- To foster networking and collaboration among participants and experts in the field of intellectual property.

3. **Program Structure**

The value-added program on IPR was structured into several modules covering different aspects of intellectual property, including patents, trademarks, copyrights, and trade secrets. Each module comprised interactive lectures, case studies, workshops, and discussions facilitated by experts in the field. The program also included hands-on exercises to reinforce learning and encourage practical application of concepts.

4. **Key Topics Covered**

- Introduction to Intellectual Property Rights
- Types of Intellectual Property
- Patent Law and Practice
- Trademark Law and Practice
- Copyright Law and Protection
- Trade Secret Protection
- Licensing and Technology Transfer
- Enforcement of Intellectual Property Rights
- Emerging Issues in IPR (e.g., digital copyright, AI-generated content)

5. **Participants**

The program attracted a diverse range of participants, including entrepreneurs, innovators, researchers, legal professionals, business executives, and students. Participants came from various industries such as technology, healthcare, manufacturing, entertainment, and academia.

6. **Outcomes**

- Increased Awareness: Participants gained a deeper understanding of the importance of IPR and its implications for business and innovation.

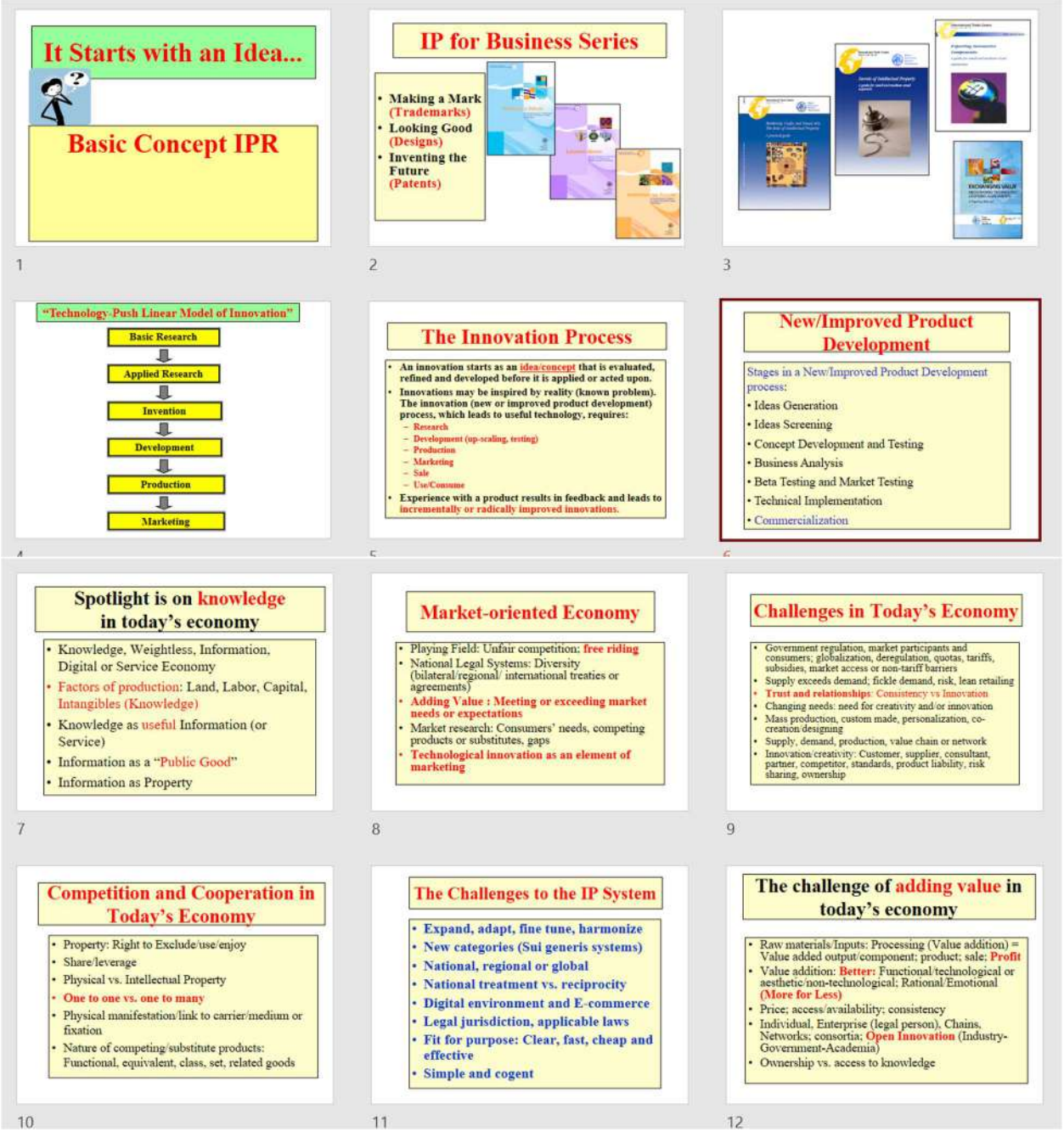
- Enhanced Skills: Participants acquired practical skills and knowledge related to the identification, protection, and management of intellectual property assets.
- Networking Opportunities: The program provided a platform for participants to network with experts and peers, fostering collaboration and knowledge exchange.
- Business Impact: Participants were equipped with strategies to leverage IPR for competitive advantage, product differentiation, and revenue generation.

7. Recommendations

- Continued Education: Regular value-added programs and workshops on IPR should be organized to keep participants updated on evolving laws and best practices.
- Industry-Specific Focus: Tailored programs focusing on specific industries or sectors could provide more targeted insights and practical guidance.
- Policy Support: Governments and policymakers should provide support for initiatives aimed at promoting awareness and protection of intellectual property rights.

8. Conclusion

The value-added program on Intellectual Property Rights was a valuable initiative that contributed to enhancing awareness, skills, and collaboration in the field of intellectual property. By equipping participants with the knowledge and tools to effectively navigate the complexities of IPR, the program has the potential to drive innovation, economic growth, and competitiveness in the global marketplace. Continued efforts in this direction are essential to foster a culture of creativity, innovation, and respect for intellectual property rights.


It Starts with an Idea...
Basic Concept IPR
1
IP for Business Series
• Making a Mark (Trademarks)
• Looking Good (Designs)
• Inventing the Future (Patents)
2
3
"Technology-Push Linear Model of Innovation"
Basic Research
Applied Research
Invention
Development
Production
Marketing
The Innovation Process
• An innovation starts as an idea/concept that is evaluated, refined and developed before it is applied or acted upon.
• Innovations may be inspired by reality (known problem). The innovation (new or improved product development) process, which leads to useful technology, requires:
– Research
– Development (up-scaling, testing)
– Production
– Marketing
– Sale
– Use/Consume
• Experience with a product results in feedback and leads to incrementally or radically improved innovations.
New/Improved Product Development
Stages in a New/Improved Product Development process:
• Ideas Generation
• Ideas Screening
• Concept Development and Testing
• Business Analysis
• Beta Testing and Market Testing
• Technical Implementation
• Commercialization
Spotlight is on knowledge in today's economy
• Knowledge, Weightless, Information, Digital or Service Economy
• Factors of production: Land, Labor, Capital, Intangibles (Knowledge)
• Knowledge as useful Information (or Service)
• Information as a "Public Good"
• Information as Property
7
Market-oriented Economy
• Playing Field: Unfair competition: free riding
• National Legal Systems: Diversity (bilateral/regional/ international treaties or agreements)
• Adding Value : Meeting or exceeding market needs or expectations
• Market research: Consumers' needs, competing products or substitutes, gaps
• Technological innovation as an element of marketing
8
Challenges in Today's Economy
• Government regulation, market participants and consumers; globalization, deregulation, quotas, tariffs, subsidies, market access or non-tariff barriers
• Supply exceeds demand; fickle demand, risk, lean retailing
• Trust and relationships: Consistency vs Innovation
• Changing needs: need for creativity and/or innovation
• Mass production, custom made, personalization, co-creation/designing
• Supply, demand, production, value chain or network
• Innovation/creativity: Customer, supplier, consultant, partner, competitor, standards, product liability, risk sharing, ownership
9
Competition and Cooperation in Today's Economy
• Property: Right to Exclude/use/enjoy
• Share/leverage
• Physical vs. Intellectual Property
• One to one vs. one to many
• Physical manifestation/link to carrier/medium or fixation
• Nature of competing/substitute products: Functional, equivalent, class, set, related goods
10
The Challenges to the IP System
• Expand, adapt, fine tune, harmonize
• New categories (Sui generis systems)
• National, regional or global
• National treatment vs. reciprocity
• Digital environment and E-commerce
• Legal jurisdiction, applicable laws
• Fit for purpose: Clear, fast, cheap and effective
• Simple and cogent
11
The challenge of adding value in today's economy
• Raw materials/Inputs: Processing (Value addition) = Value added output/component; product; sale; Profit
• Value addition: Better: Functional/technological or aesthetic/non-technological; Rational/Emotional (More for Less)
• Price; access/availability; consistency
• Individual, Enterprise (legal person), Chains, Networks; consortia; Open Innovation (Industry-Government-Academia)
• Ownership vs. access to knowledge
12

Ideas, Creativity and Innovation

- **Creativity**
  The ability to make or otherwise bring into existence something new, whether a new solution to a problem, a new method or device, or a new artistic object or form.
- **Innovation**
  1 : The introduction of something new
  2 : A new idea, method, or device

- **Creativity = Idea + Action**
- **Innovation = Creativity + Productivity**
- **Innovation = Idea + Action + Productivity**

13

IDEA to PRODUCT

14

IDEA to MARKET

15

Idea to Profit

16

Understanding the Process of Innovation

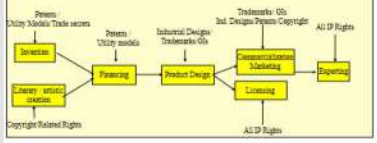
17

The Needs of Each Stage

18

Basic Message 1

IP adds value at every stage of the value chain from creative/innovative idea to putting a new, better, and cheaper, product/service on the market:



19

Basic Message 2

- **IP Strategy should be an integral part of the overall business strategy of an Enterprise**
- **The IP strategy of an Enterprise is influenced by its creative/innovative capacity, financial resources, field of technology, competitive environment, etc.**
- **BUT: *Ignoring the IP system altogether is in itself an IP strategy, which may eventually prove very costly or even fatal***

20

Basic Message 3 (More for Less)

- **Own Use**
- **Licensing**
- **Franchising**
- **Merchandising (Mickey Mouse, Hello Kitty)**

21

Patents

Example: Ring-pull cans

The inventor licensed the system to Coca-Cola at 1/10 of a penny per can. During the period of validity of the patent the inventor obtained 148,000 UK pounds a day on royalties.

22

What is a trade secret?

- Three essential requirements:
  - The information must be secret *
  - It must have commercial value because it's secret
  - holder must have taken reasonable steps to keep it secret (e.g. confidentiality agreements)

* *"not generally known among or readily accessible to persons within the circles that normally deal with this kind of information"*

23

Case Study on Trade Secrets

Monday April 9 3:45 AM ET
Fruit of the Loom Sues Competitor

CHICAGO (AP) - Fruit of the Loom is suing competitor Gildan Activewear Inc., accusing the Montreal company of stealing trade secrets to grab a competitive edge in the cutthroat apparel business.

Fruit of the Loom contends the reports include production goals for plants in El Salvador, Honduras and Mexico that would allow Gildan to estimate production costs. They detail sales to specific customers, trends in demand and budget information.

24

Case Study: FBI Arrests Man Selling Software Debug Code

- **HINDUSTAN TIMES, New Delhi, August 28, 2002**
- Shekhar Verma arrested August 25, Ashok Hotel
- Geometric Software Solutions Limited (GSSL)
- Confidentiality Agreement (Not to disclose, sell, transfer, or assign any information on the project
- US Software Giant, SOLID Works, engaged GSSL for debugging source Code of "Solid Works 2001 Plus"
- Left GSSL in June 2002; took copy of source code

25

IP Rights: Copyright

- **Rights given to creators** for their literary and artistic works
- **Protected works**: books; newspapers; computer programs; databases; films, musical compositions; choreography; paintings; drawings; photographs; sculpture; architecture; advertisements; maps and technical drawings; no registration
- Generally protected for 50 years after the death of the author
- Extent of overlap between copyright and design laws

26

A Bundle of Exclusive Rights

Economic Rights

- Reproduce or make copies;
- Distribute to public;
- Sell, rent*, lease*, lend, license;
- Display or perform to public;
- Adapt and Translate ("Derivative works");

Inherit, Gift, Sell or License

Moral rights**

- Right of paternity: of acknowledgement;
- Right of integrity: to object against mutilation and/or distortion of work;

** Moral rights cannot be transferred; but may be waived.

* Generally applies only to certain types of works: i.e. Cinematographic works; musical works, or computer programs.

27

Copyright Works

28

What are Related Rights?

There are three kinds of "related rights":

Rights of performers	Rights of producers of sound recordings	Rights of broadcasting organizations
• Actors • Musicians • Singers • Dancers ... or generally people who perform in their performances;	(also called phonograms) in their recordings (cassette recordings, compact discs, etc.);	in their radio and television programs and in Internet broadcasts such as 'podcasts'.

29

Marketing principles…….

- Identify opportunities and threats
- Identify customer needs and expectations
- Respond to a competitive environment
- Carefully plan to make a New or Improved Product
- Use the 4 P's….
  - Product service
  - Price
  - Promotion
  - Place (distribution)
- Retain flexibility to respond to unforeseen changes

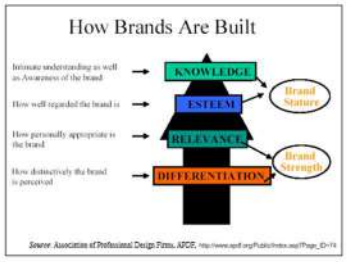
30

Building Trust and Relationships

- A Brand is a consistent, holistic promise/pledge made by a company; the face a company presents
- A Brand serves as an unmistakable symbol for products and services
- "Business card" a company proffers on the competitive scene, to set itself apart from the rest

31

How Brands Are Built



Source: Association of Professional Design Firms, AIGA, <http://www.aiga.org/PublicIndex.asp?Page_ID=74

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Trademarks

- **Trademarks are valuable business assets**
- **Interbrand 2003 Annual Survey of the world's most valuable global brands:**

Coca-Cola: 70.45 billion US$ Microsoft : 65.17 billion US$ IBM: 51.71 US$.

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"Brand" Companies

Nike...
Adidas...
Reebok...
Levi-Strauss…

…Own No Factories

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Value of a brand value is affected by...

- New inventions
- Adaptability to change (Management, Employees)
- Changes in consumer tastes
- Situation and trends in the economy
- Industry trends and brands trends
- Impact of technological developments

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Example no. 1

- Decades ago, Coca-Cola decided to keep its soft drink formula a secret
- The formula is only know to a few people within the company
- Kept in the vault of a bank in Atlanta
- Those who know the secret formula have signed non-disclosure agreements
- It is rumored that they are not allowed to travel together
- If it had patented its formula, the whole world would be making Coca-Cola

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Example no. 2

- **Patent** for stud and tube coupling system (the way bricks hold together)
- But: Today the patents have long expired and the company tries hard to keep out competitors by using **designs**, **trademarks** and **copyright**

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Industrial Designs

Business (Idea) point of view:

- Make your product appealing to consumers
- Customize products in order to target different customers (e.g. Swatch)
- Develop the brand (e.g. Apple 's « Think Different » strategy; i Pod)

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Entrepreneurship 1

Entrepreneurship drives innovation, competitiveness, job creation and economic growth.

It allows new/innovative ideas to turn into successful ventures in high-tech sectors and/or can unlock the personal potential of disadvantaged people to create jobs for themselves and find a better place in society.

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Entrepreneurship 2

Entrepreneurship, in small business or large, focuses on "what may be" or "what can be".

One is practicing entrepreneurship by looking for what is needed, what is missing, what is changing, and what consumers will buy during the coming years.

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Entrepreneurship 3

Entrepreneurs have:

- A **passion** for what they do
- The **creativity** and **ability** to innovate
- A sense of **independence** and **self- reliance**
- (Usually) a high level of **self confidence**
- A **willingness** and **capability** (though not necessarily capacity or preference) for **taking risks**

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Entrepreneurship 4

Entrepreneurs do not (usually) have:

- **A tolerance for organizational bureaucracies**
- **A penchant for following rules**
- **A structured approach to developing and implementing ideas**
- **The foresight to plan a course of action once the idea is implemented and established**

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Entrepreneurial Success

1. **People (Entrepreneur /Entrepreneurial Team)**
2. **Opportunity (Marriage of Market and Product/Service)**
3. **Access to Resources (Land. Labor, Capital, Knowledge**

And the fit amongst these three elements (Business Model)

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Introduction to IP Management 1

- **Legal**
- **Technical**
- **Business**
- **Export**
- **Financial**
- **Relationships**
- **Accounting**
- **Tax**
- **Insurance**
- **Security**
- **Automation**
- **Personnel**

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Introduction to IP Management 2

- **Trademarks (Brands)**
- **Geographical Indications**
- **Industrial Designs**
- **Patents and Utility Models**
- **Copyright and Related Rights**
- **Trade Secrets**
- **New Varieties of Plants**
- **Unfair Competition**

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Glimpses of IPR Session with expert –

Value Added Course

Microsoft Power Platform Fundamentals Certification Program

Department of Computer Science & Engineering

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Course Details

Course Name	**Microsoft Power Platform Fundamentals Certification Program**
Total Hrs.	**1 Week**
Duration	**14 October & 20 December 2023**
Students Strength	**80**

Course Objective

The Microsoft Power Platform Fundamentals program, specifically the Microsoft Certified: Power Platform Fundamentals certification, aims to equip individuals with foundational knowledge and skills in using the Power Platform. The program is designed for beginners and provides a comprehensive introduction to the various tools and capabilities of the Power Platform.

Course Description

This IoT workshop offers a comprehensive exploration into the rapidly evolving field of the Internet of Things (IoT). Participants will delve into the fundamental concepts, technologies, and applications driving IoT innovation. Through hands-on activities and practical projects, students will gain proficiency in sensor integration, data analysis, and IoT system development. Topics covered include sensor networks, communication protocols, data visualization, and ethical considerations in IoT deployment. By the end of the workshop, participants will possess the skills and knowledge needed to design, build, and deploy IoT solutions across various domains.

Main Objectives for Students

- Introduction to Power Platform
- Data Analysis and Visualization
- App Development
- Process Automation
- Creating Chatbots
- Connecting Data and Systems
- Security and Administration
- Practical Application

Skills

The Microsoft Power Platform Fundamentals Certification Program (Exam PL-900) equips individuals with a range of foundational skills related to the Power Platform. These skills are essential for leveraging the platform's tools to create business solutions. Here are the key skills covered in the program:
Understanding the Power Platform Components:

- Data Analysis and Visualization
- App Development
- Process Automation
- Creating Chatbot
- Connecting Data and Systems
- Security and Compliance

Employability

The Microsoft Power Platform Fundamentals Certification (Exam PL-900) enhances employability by equipping individuals with essential skills in using the Power Platform, which is increasingly important in the business world. Here are several ways this certification can boost employability:

- Industry Recognition
- Enhanced Skill Set
- Entry-Level Opportunities
- Career Advancement
- Increased Demand for Automation and Analytics

Entrepreneurship

The Microsoft Power Platform Fundamentals Certification can be a valuable asset for entrepreneurs, providing them with the skills to leverage the Power Platform's tools to create efficient, data-driven solutions for their businesses. Here's how this certification can support entrepreneurial endeavors:

- Cost-Effective Solutions
- Data-Driven Decision Making
- Improved Customer Engagement
- Streamlined Operations
- Resource Optimization

Course Outcome:

Completing the Microsoft Power Platform Fundamentals Certification Program (PL-900) leads to several specific outcomes, reflecting the knowledge and skills acquired. Here are the key course outcomes:

- Understanding of Core Components
- Proficiency in Data Analysis and Visualization
- Basic App Development Skills
- Process Automation Skills
- Data Integration and Connectivity

Schedule

During this Course, we will cover the following Topics:

Day	Date	Session Name
1	**14/Oct./2023**	Introduction to Power Platform
2	**15/Dec./2023**	Hands on Practice on Power Platform
3	**16/Oct./2023**	App Development, Process Automation
4	**17/Oct./2023**	Connecting Data and Systems Creating Chatbots
5	**18/Oct./2023**	Security and Administration

Award of Certificate

The student will be evaluated through attendance, assignments, quizzes and a final test. The student must secure a minimum of 60% of the total marks to get the course completion certificate.


AKS UNIVERSITY SATNA


AKS UNIVERSITY SATNA

Course Coordinators

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Dr. Dr. Akhilesh A. Waoo Head & Associate Dean
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AKS University, Satna(M.P.)

Value Added Course

By

Rostris InfoTech

Organized By

Department of Computer Science & Engineering

AKS University Satna (M.P.), India

Program Detail:

Course Name: Docker and kubernetes

Total Hrs. 40 hrs.

Duration: 20 November 2023 to 24 November 2023

Details of the Program:

In Linux, a "program" typically refers to an executable file that performs a specific task or set of tasks when run. These programs can range from simple scripts written in scripting languages like Bash, Python, or Perl to complex software applications like web browsers, text editors, or office suites.

The topics covered in this program include:

A program focusing on Docker and Kubernetes typically covers a range of topics related to containerization, container orchestration, and deployment of containerized applications. Here are the key topics often included:

Containerization Basics:

Introduction to containerization and its benefits.
Understanding Docker and its architecture.
Docker file creation and best practices.
Building, running, and managing Docker containers.

Docker Advanced Features:

Docker networking and storage.
Docker Compose for multi-container applications.
Docker volumes and data management.
Docker security best practices.
Docker registries and image distribution.

Kubernetes Introduction:

Introduction to Kubernetes and its architecture.
Understanding Kubernetes components (e.g., API server, etcd, kubelet, kube-proxy).
Kubernetes resources (e.g., pods, services, deployments, replica sets).
Kubernetes networking concepts (e.g., services, Ingress, network policies).
Kubernetes storage options.

Learning outcome:

The learning outcomes for a Docker and Kubernetes program typically revolve around both theoretical understanding and practical skills. Here are some common learning outcomes:

- Understanding Containerization Concepts
- Proficiency in Docker
- Understanding Kubernetes
- Deployment and Orchestration Skills
- Operations and Maintenance

Prerequisite:

Before diving into learning Docker and Kubernetes, it's beneficial to have a solid understanding of certain foundational concepts and technologies.

Linux Fundamentals: Since both Docker and Kubernetes originated in the Linux ecosystem, familiarity with basic Linux concepts such as the command line interface, file system navigation, permissions, and basic shell scripting is essential.

Networking Basics: Understanding fundamental networking concepts like IP addresses, subnets, DNS, and HTTP/HTTPS protocols is crucial for working with Docker and Kubernetes, especially when configuring networking for containerized applications.

Version Control: Proficiency with version control systems like Git is highly recommended, as version control is often used in conjunction with Docker and Kubernetes for managing code and configurations.

Containerization Concepts: While not mandatory, having a conceptual understanding of containerization and how it differs from traditional virtualization can be helpful. Knowledge of containerization principles can make it easier to grasp Docker and Kubernetes concepts.

Web Development Experience: Basic knowledge of web development concepts such as client-server architecture, web servers (e.g., Apache, Nginx), and databases (e.g., MySQL, PostgreSQL) can be advantageous, as many containerized applications are web-based.

Main Objectives for Students

For students learning Docker and Kubernetes, the main objectives typically include gaining a solid understanding of the core concepts, developing practical skills for deploying and managing containerized applications, and preparing for real-world scenarios in software development and operations.

- Understanding Containerization
- Mastering Docker
- Exploring Kubernetes
- Practical Deployment Skills
- Operational Proficiency

Employability: Students can use this course as including it in their profile to apply for various job opportunities as developer in IT Industry.

Award of Certificate

The student will be evaluated through attendance, assignments, quizzes and a final test. The student mustsecure a minimum of 60% of the total marks to get the course completion certificate.


Program Coordinator
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Value Added Course

Basics Mathematics for AI and DS

Department of Computer Science & Engineering

AKS University Satna (M.P.), India

Basics Mathematics for AI and DS

Course Details

Course Name	**Basics Mathematics for AI and DS**
Total Hrs.	**30 hrs.**
Duration	**31 September to 3 October 2023**
Students Strength	---

Course Objective

This course focuses on Artificial Intelligence case studies, AI And DS concepts.

Get guidance from our subject matter expert who will share valuable industry insights to enhance your Artificial Intelligence skills.

Use mathematical foundations to understand and implement core AI and DS techniques such as regression, classification, clustering, and neural networks..

Course Description

During this Master class, we will cover the following Topics:

Day	Date	Session Name
1	31-Sep-23	Briefing about the sessions, Briefing about Mathematics properties for AI and DS
2	1-Oct-23	Introduction to Probability.
3	2-Oct-23	Introduction to Statistics.
4	3-Oct-23	Introduction to Applications to AI and DS.

Main Objectives for Students

- To become familiar with AI.
- To learn appropriate methodology for AI application development and the steps needed to complete this.
- TO become familiar with algorithms for machine leaning and Deep learning.

- To develop skills in python.
- Students will be prepared to tackle complex problems, optimize solutions, and innovate in the fields of AI and DS.

Skills

Students can focus on developing mathematical skills will enable students to effectively analyze data, build robust models, and solve complex problems in AI and Data Science.

Employability: Students can use this course as including it in their profile to apply for various job opportunities as developer in IT Industry.

Entrepreneurship: Students can use this knowledge to build expertise in AI.

Course Outcome:

- Understand the informed and uninformed problem types and apply search strategies to solve them.
- Apply difficult real-life problems in a state space representation so as to solve them using AI techniques like searching and game playing.
- Learn the basics of learning problems with hypothesis and version spaces.
- Understand the features of machine learning to apply on real world problems.
- To be able to choose a particular deployment model according to scenario.
- Design and develop cloud and implement various services on cloud.

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Schedule:

Day	Date	Session Name
1	31-Sep -23	Briefing about the sessions, Briefing about Mathematics properties for AI and DS
2	1-Oct-23	Introduction to Probability.
3	2-Oct-23	Introduction to Statistics.
4	3-Oct-23	Introduction to Applications to AI and DS.

Prerequisites

Student should have knowledge of Basic Mathematics concept.
Student should have knowledge about basic concept of AI And DS.

Award of Certificate

The student will be evaluated through attendance, assignments, quizzes and a final test. The student must secure a minimum of 60% of the total marks to get the course completion certificate.

Course Coordinator

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Department of Civil Engineering

Value Added Course

Repair and Rehabilitation of Structures

Course Name : Repair and Rehabilitation of Structures

Course Code: CCE-27/21-22

Contact hours: 30 hours

Duration: 4th December-11th December 2021

Course Objective:

The workshop aims to equip participants with essential knowledge and practical skills for assessing structural damage, implementing effective repair techniques, and ensuring the long-term durability of rehabilitated structures. Emphasis will be placed on modern materials, innovative methods, and best practices in the field of structural repair and rehabilitation.

Course Description:

Repair and rehabilitation of structures involve restoring and enhancing the performance of buildings and infrastructure that have deteriorated over time or sustained damage. This crucial field addresses issues such as structural integrity, safety, and functionality through various techniques and materials. Modern approaches include using advanced composites, non-destructive testing, and innovative construction methods to extend the lifespan and improve the resilience of structures. Understanding the underlying causes of deterioration, such as environmental factors and material fatigue, is essential. Effective repair and rehabilitation not only preserve the structural heritage but also ensure sustainability and safety in the built environment.

Scope of the Course

The workshop on repair and rehabilitation of structures will comprehensively cover the theoretical and practical aspects of assessing, repairing, and strengthening damaged or deteriorated buildings and infrastructure. Participants will learn about various causes of structural degradation, including environmental factors, material fatigue, and design flaws. The scope includes:

1. **Assessment Techniques**: Detailed exploration of non-destructive testing methods, structural health monitoring, and damage evaluation.
2. **Repair Materials and Methods**: In-depth analysis of traditional and modern materials such as polymers, composites, and concrete, along with their application techniques.
3. **Rehabilitation Strategies**: Strategies for retrofitting and strengthening structures to enhance durability and resilience.
4. **Case Studies**: Examination of real-world examples to illustrate successful repair and rehabilitation projects.
5. **Sustainability and Best Practices**: Emphasis on sustainable practices and compliance with industry standards and regulations.

The workshop aims to provide a thorough understanding of the entire repair and rehabilitation process, equipping participants with the skills needed for effective structural maintenance and enhancement.

Main Objective for the students

- **Understand Structural Assessment**: Gain proficiency in evaluating the condition of structures using non-destructive testing and damage assessment techniques.
- **Identify Causes of Degradation**: Learn to identify and analyze common causes of structural deterioration, including environmental factors, material fatigue, and design flaws.
- **Explore Repair Materials**: Acquire knowledge about traditional and modern repair materials, such as polymers, composites, and advanced concretes.
- **Apply Repair Techniques**: Master various repair and reinforcement techniques to address different types of structural damage.
- **Implement Rehabilitation Strategies**: Develop skills in planning and executing effective rehabilitation strategies to extend the lifespan and improve the resilience of structures.
- **Analyze Case Studies**: Study real-world examples to understand practical applications and outcomes of repair and rehabilitation projects.
- **Emphasize Sustainability**: Learn about sustainable practices in repair and rehabilitation, focusing on eco-friendly materials and methods.
- **Understand Regulatory Compliance**: Familiarize with industry standards and regulations to ensure compliant and safe repair practices.
- **Develop Problem-Solving Skills**: Enhance problem-solving abilities by tackling complex repair and rehabilitation scenarios.
- **Promote Safety and Durability**: Emphasize the importance of safety and durability in maintaining the integrity of repaired and rehabilitated structures.

Course Contents

- **Introduction to Repair and Rehabilitation**: Overview of the importance and scope of structural repair and rehabilitation. **(2 HOURS)**
- **Types of Structural Deterioration**: Examination of common causes, such as environmental exposure, material fatigue, and structural overload. **(2 HOURS)**
- **Structural Assessment Techniques**: Training in non-destructive testing methods, visual inspection, and advanced diagnostic tools. **(2 HOURS)**
- **Material Properties and Selection**: Study of traditional and modern materials used in repairs, including their properties and selection criteria. **(2 HOURS)**
- **Concrete Repair Methods**: Detailed discussion on patch repair, crack injection, and surface treatments for concrete structures. **(2 HOURS)**
- **Steel Structure Rehabilitation**: Techniques for corrosion protection, member replacement, and reinforcement of steel structures. **(2 HOURS)**
- **Masonry Repair Techniques**: Methods for repairing and strengthening brick, stone, and block masonry structures. **(2 HOURS)**
- **Composite Materials in Rehabilitation**: Application of fiber-reinforced polymers (FRP) and other composites for structural reinforcement. **(2 HOURS)**
- **Waterproofing and Protection**: Techniques for preventing water ingress and protecting structures from moisture damage. **(2 HOURS)**
- **Retrofitting Techniques**: Strategies for upgrading structures to meet current codes and improve seismic resistance. **(2 HOURS)**

- **Strengthening Methods**: Techniques such as external post-tensioning, steel plate bonding, and column jacketing. **(2 HOURS)**
- **Case Studies**: Analysis of successful repair and rehabilitation projects to illustrate practical applications. **(2 HOURS)**
- **Sustainability in Repairs**: Emphasis on eco-friendly materials and sustainable repair practices. **(2 HOURS)**
- **Safety and Compliance**: Ensuring adherence to safety standards, codes, and regulations during repair processes. **(2 HOURS)**
- **Future Trends in Structural Rehabilitation**: Exploration of emerging technologies and methods in the field of repair and rehabilitation. **(2 HOURS)**

Course Outcomes

- **Enhanced Diagnostic Skills**: Ability to effectively assess and diagnose structural damage using non-destructive testing and other assessment techniques.
- **In-depth Material Knowledge**: Comprehensive understanding of traditional and modern repair materials, including their properties and applications.
- **Practical Repair Techniques**: Proficiency in applying various repair methods for concrete, steel, and masonry structures.
- **Advanced Rehabilitation Strategies**: Capability to design and implement effective rehabilitation plans tailored to specific structural issues.
- **Sustainable Practices**: Knowledge of eco-friendly and sustainable approaches in repair and rehabilitation projects.
- **Regulatory Compliance**: Understanding of relevant codes, standards, and regulations to ensure compliance in repair practices.
- **Safety Awareness**: Emphasis on safety measures and protocols during the repair and rehabilitation process.
- **Innovative Solutions**: Ability to utilize advanced materials like fiber-reinforced polymers (FRP) and other composites for structural strengthening.
- **Waterproofing Expertise**: Skills in applying waterproofing techniques to protect structures from moisture damage.
- **Seismic Retrofitting**: Proficiency in retrofitting techniques to enhance the seismic resistance of existing structures.
- **Problem-Solving Abilities**: Enhanced problem-solving skills to address complex repair and rehabilitation challenges.
- **Case Study Analysis**: Experience in analyzing real-world case studies to understand practical applications and outcomes.
- **Technical Documentation**: Ability to prepare detailed reports and documentation for repair and rehabilitation projects.
- **Project Planning and Management**: Skills in planning, managing, and executing repair and rehabilitation projects efficiently.
- **Innovative Trend Awareness**: Awareness of the latest trends and technological advancements in the field of structural repair and rehabilitation.
- **Durability Improvement**: Techniques to enhance the long-term durability and performance of repaired structures.

- **Corrosion Protection**: Knowledge of methods to protect steel structures from corrosion and extend their service life.
- **Masonry Preservation**: Expertise in techniques for preserving and strengthening masonry structures.
- **Collaborative Skills**: Ability to work effectively in multidisciplinary teams for comprehensive repair and rehabilitation solutions.
- **Holistic Approach**: Development of a holistic approach to structural repair and rehabilitation, integrating assessment, repair, reinforcement, and maintenance.

Research topic

Advanced Composite Materials for Structural Rehabilitation: Research in this field focuses on developing and optimizing the use of advanced composite materials, such as fiber-reinforced polymers (FRP), for the repair and strengthening of deteriorated structures. This includes studying their mechanical properties, durability, and performance under various environmental conditions. The goal is to create more efficient, cost-effective, and sustainable solutions for extending the lifespan and enhancing the resilience of buildings and infrastructure. Research may also explore the application techniques, bonding methods, and long-term behavior of these materials in different types of structural systems.

Assignments

- **Case Study Analysis**: Select a real-world repair and rehabilitation project, analyze the techniques and materials used, and evaluate the effectiveness of the intervention.
- **Material Research Report**: Research a specific repair material (e.g., fiber-reinforced polymer, high-performance concrete) and write a report on its properties, applications, and advantages in structural rehabilitation.
- **Damage Assessment Report**: Conduct a detailed assessment of a chosen structure, identifying types of damage, causes, and recommending appropriate repair methods.
- **Non-Destructive Testing (NDT) Project**: Perform NDT on a small-scale structure or a sample and report on the findings, interpreting the data to assess the structure's integrity.
- **Design a Repair Plan**: Develop a comprehensive repair plan for a hypothetical damaged structure, including material selection, techniques, and a step-by-step implementation process.
- **Retrofitting Proposal**: Create a proposal for retrofitting an existing structure to enhance its seismic performance, detailing the methods and materials to be used.
- **Sustainability Assessment**: Evaluate the sustainability of different repair and rehabilitation methods, considering factors such as environmental impact, material lifecycle, and energy efficiency.

Schedule

Award of certificate

Course Coordinator

Mentors

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www.aksuniversity.com

Department of Civil Engineering

Value Added Course

GIS Tools in Civil Engineering

Course Name : # GIS Tools in Civil Engineering

Course Code: CCE-28/22-23

Contact hours: 30 hours

Duration:28th November-5th December 2022

Course Objective :

The workshop aims to equip civil engineering professionals with essential skills in Geographic Information Systems (GIS) tools, focusing on spatial data analysis, mapping, and decision-making processes. Participants will learn to integrate GIS technology into project planning, design, and management, enhancing efficiency and accuracy in civil engineering projects.

Course Description:

Repair and rehabilitation of structures involve restoring and enhancing the performance of buildings and infrastructure that have deteriorated over time or sustained damage. This crucial field addresses issues such as structural integrity, safety, and functionality through various techniques and materials. Modern approaches include using advanced composites, non-destructive testing, and innovative construction methods to extend the lifespan and improve the resilience of structures. Understanding the underlying causes of deterioration, such as environmental factors and material fatigue, is essential. Effective repair and rehabilitation not only preserve the structural heritage but also ensure sustainability and safety in the built environment.

Scope of the Course

The workshop covers fundamentals of GIS application in civil engineering, including spatial data acquisition, analysis, and visualization. Topics include GIS software usage, integration with CAD, and applications in infrastructure planning, environmental assessment, and urban development. Participants gain practical skills for leveraging GIS in diverse civil engineering projects.

Course Contents

1. **Introduction to GIS (Geographic Information System) (2 HOURS)**
    - Definition and importance in civil engineering projects.
    - Basic components and functionalities.
2. **Spatial Data in Civil Engineering(2 HOURS)**
    - Types of spatial data used (e.g., points, lines, polygons).
    - Sources and formats of spatial data (e.g., GPS, remote sensing, CAD).
3. **GIS Software Overview (2 HOURS)**
    - Popular GIS software used in civil engineering (e.g., ArcGIS, QGIS).
    - Comparison of different software capabilities and costs.
4. **Data Acquisition and Integration (2 HOURS)**
    - Techniques for collecting spatial data in civil engineering applications.
    - Methods for integrating diverse data sources into GIS platforms.
5. **Spatial Analysis Techniques (2 HOURS)**
    - Basic spatial analysis operations (e.g., buffering, overlay, proximity analysis).

    - Applications of spatial analysis in civil engineering (e.g., site selection, route planning).
6. **GIS for Infrastructure Planning (2 HOURS)**
    - Use of GIS in planning and designing infrastructure projects (e.g., roads, utilities).
    - Case studies demonstrating effective use of GIS in infrastructure planning.
7. **GIS for Environmental Impact Assessment (2 HOURS)**
    - Role of GIS in assessing environmental impacts of civil engineering projects.
    - Tools and methodologies for environmental modeling and analysis.
8. **3D GIS and Visualization (2 HOURS)**
    - Introduction to 3D GIS concepts and applications in civil engineering.
    - Visualization techniques for presenting spatial data and designs.
9. **Geospatial Data Management (2 HOURS)**
    - Best practices for managing geospatial data in civil engineering projects.
    - Data storage, organization, and retrieval strategies.
10. **GIS for Asset Management (2 HOURS)**
    - Utilizing GIS for asset inventory, maintenance scheduling, and lifecycle management.
    - Integration with Building Information Modeling (BIM) systems.
11. **Mobile GIS Applications (2 HOURS)**
    - Use of mobile devices for data collection and field mapping.
    - Examples of mobile GIS apps and their functionalities.
12. **GIS and Geotechnical Engineering (2 HOURS)**
    - Applications of GIS in geotechnical investigations and analysis.
    - Mapping and analyzing soil properties, groundwater, and geological features.
13. **GIS in Disaster Management (2 HOURS)**
    - Role of GIS in disaster preparedness, response, and recovery.
    - Case studies illustrating GIS applications during natural disasters.
14. **Legal and Ethical Considerations (2 HOURS)**
    - Legal issues related to GIS data use and sharing in civil engineering.
    - Ethical considerations in handling sensitive or private spatial data.
15. **Hands-on Exercises and Case Studies (2 HOURS)**
    - Practical sessions using GIS software to solve civil engineering problems.
    - Analysis of real-world case studies to reinforce learning outcomes.

Course Outcomes

- Ability to use GIS software for spatial data visualization.
- Proficiency in conducting spatial analysis for site suitability assessments.
- Skills in creating and interpreting maps for infrastructure planning.
- Understanding of GIS applications in environmental impact assessments.
- Knowledge of integrating GIS with civil engineering design processes.
- Capability to utilize GIS for asset management and maintenance.
- Competence in utilizing spatial data for transportation planning.
- Familiarity with GIS-based hydrological modeling for water resource management.
- Ability to apply GIS in urban planning and development projects.

- Improved decision-making skills through GIS-based data analysis in civil engineering contexts.

Research topic

One relevant topic of research after attending a workshop on GIS tools in civil engineering could be:

"Integration of Remote Sensing Data with GIS for Urban Planning and Infrastructure Development"

This topic explores how Geographic Information Systems (GIS) can be enhanced by integrating remote sensing data (such as satellite imagery, LiDAR, or UAV data) to improve urban planning and infrastructure development in civil engineering. Research could focus on methodologies for data integration, applications in land use planning, transportation network design, environmental impact assessment, and disaster management. It would involve understanding how spatial analysis and modeling techniques within GIS can be enriched by high-resolution remote sensing data, leading to more informed decision-making processes in civil engineering projects.

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Assignments

Here is a list of assignments that can be given to students after a workshop on GIS (Geographic Information System) tools in civil engineering:

1. **Mapping and Spatial Analysis Assignment:**
    - Task: Create a map of a given area using GIS software, identifying and analyzing key features such as roads, buildings, water bodies, and land use patterns.
    - Objective: To understand the basics of GIS mapping and spatial data representation.
2. **Site Selection Analysis:**
    - Task: Use GIS tools to perform a site selection analysis for a new infrastructure project (e.g., a bridge, highway, or commercial building). Consider factors such as proximity to resources, environmental impact, and land suitability.
    - Objective: To learn how GIS can assist in decision-making for site selection in civil engineering projects.
3. **Flood Risk Assessment:**
    - Task: Analyze flood risk in a specific region using GIS tools. Include data layers such as topography, historical flood data, and land use.
    - Objective: To apply GIS in environmental risk assessment and disaster management.
4. **Transportation Network Analysis:**
    - Task: Model and analyze the transportation network of a city using GIS. Assess traffic flow, identify bottlenecks, and propose improvements.
    - Objective: To utilize GIS in transportation planning and traffic management.
5. **Utility Network Mapping:**

- Task: Create a GIS-based map of underground utilities (e.g., water, gas, electricity) for a given urban area. Include metadata and attribute data for each utility type.
- Objective: To understand the application of GIS in managing urban infrastructure.

6. **Land Use Change Detection:**
   - Task: Compare satellite images or aerial photographs of an area from different time periods to detect changes in land use. Use GIS tools to quantify and visualize these changes.
   - Objective: To learn about remote sensing and temporal analysis in GIS.
7. **Environmental Impact Assessment:**
   - Task: Conduct an environmental impact assessment for a proposed construction project using GIS. Include analysis of vegetation, wildlife habitats, and potential pollution sources.
   - Objective: To integrate GIS in environmental planning and impact assessment.
8. **3D Terrain Modeling:**
   - Task: Create a 3D terrain model of a specified area using GIS software. Analyze the model for slope, elevation, and aspect.
   - Objective: To gain skills in 3D modeling and terrain analysis using GIS.
9. **Urban Planning and Zoning:**
   - Task: Develop a zoning plan for an urban area using GIS tools. Consider factors such as residential, commercial, and industrial zones, as well as green spaces.
   - Objective: To apply GIS in urban planning and land use management.
10. **Hydrological Modeling:**
    - Task: Use GIS to model the hydrology of a watershed area. Include analysis of rainfall, runoff, and watershed boundaries.
    - Objective: To understand the use of GIS in hydrological studies and water resource management.
11. **Public Health and Safety Analysis:**
    - Task: Map the distribution of healthcare facilities and emergency services in a region using GIS. Analyze accessibility and identify underserved areas.
    - Objective: To explore the application of GIS in public health and safety planning.
12. **Data Collection and Field Survey:**
    - Task: Conduct a field survey to collect spatial data (e.g., GPS coordinates, photographs) and integrate this data into a GIS project.
    - Objective: To experience hands-on data collection and integration into GIS systems.
13. **Geospatial Data Integration:**
    - Task: Integrate various geospatial datasets (e.g., demographic data, environmental data, infrastructure data) into a comprehensive GIS database for a given area.
    - Objective: To learn about the challenges and techniques of integrating diverse geospatial data.
14. **Customized GIS Application Development:**
    - Task: Develop a customized GIS application or tool for a specific civil engineering problem, such as road maintenance tracking or construction site monitoring.
    - Objective: To explore advanced GIS functionalities and application development.

These assignments aim to reinforce the concepts covered in the workshop and provide practical experience in using GIS tools for various civil engineering applications.

Schedule

Award of certificate

Course Coordinator

Mentors

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Department of Civil Engineering

Value Added Course

3 D printing technology for Civil Engineers

Course Name : **3 D Printing Technology for Civil Engineers**

Course Code: CCE-29/23-24

Contact hours: 30 hours

Duration: 12th October to 19th October 2023

Course Objective :

The workshop aims to introduce civil engineers to 3D printing technology, covering its principles, applications in construction, design processes, and material considerations. Participants will gain practical skills, understand its potential to revolutionize the industry, and explore innovative solutions for building and infrastructure projects.

Course Description:

3D printing technology revolutionizes civil engineering by enabling the creation of complex, customized structures with precision and efficiency. Using additive manufacturing, materials like concrete, plastics, and metals are layered to construct everything from small components to entire buildings. This technology reduces waste, speeds up construction, and allows for innovative designs that traditional methods can't achieve. Applications include printing building facades, bridges, and infrastructure components, enhancing sustainability and cost-effectiveness. Civil engineers leverage 3D printing to push the boundaries of design, improve project timelines, and contribute to the future of smart, resilient urban development.

Scope of the Course

The workshop on 3D printing technology for civil engineers covers fundamentals, applications, and advancements in construction. Participants will explore design techniques, material selection, and structural optimization, gaining hands-on experience with 3D printing tools and software. Emphasis is on innovative solutions for sustainable, efficient, and cost-effective construction projects.

Course Contents

1. **Introduction to 3D Printing Technology**: **(2 HOURS)**
    - History and evolution of 3D printing.
    - Overview of different 3D printing technologies.
2. **Basics of 3D Printing**: (**2 HOURS)**
    - Understanding 3D printing processes: FDM, SLS, SLA, and others.
    - Materials used in 3D printing (plastics, metals, concrete, etc.).
3. **3D Printing in Construction**: **(2 HOURS)**
    - Overview of 3D printing applications in the construction industry.
    - Benefits of 3D printing in civil engineering projects.
4. **3D Printing Materials for Civil Engineering**: **(2 HOURS)**
    - Types of materials suitable for construction.
    - Material properties and their impact on structural performance.
5. **Designing for 3D Printing**: **(2 HOURS)**
    - Principles of design for additive manufacturing.
    - Software tools for creating 3D printable models (CAD, BIM).

6. **3D Printing Technologies for Construction**: **(2 HOURS)**
    - Detailed look at large-scale 3D printers used in construction.
    - Comparison of different 3D printing methods for construction projects.
7. **Case Studies**: **(2 HOURS)**
    - Real-world examples of 3D printed structures (houses, bridges, etc.).
    - Lessons learned from past 3D printing construction projects.
8. **Structural Analysis and Performance**: **(2 HOURS)**
    - Evaluating the structural integrity of 3D printed components.
    - Techniques for testing and quality control.
9. **Cost and Time Efficiency**: **(2 HOURS)**
    - Analysis of cost savings and time reduction in 3D printed construction.
    - Comparison with traditional construction methods.
10. **Environmental Impact**: **(2 HOURS)**
    - Sustainability and environmental benefits of 3D printing in construction.
    - Reducing waste and resource efficiency.
11. **Regulatory and Compliance Issues**: **(2 HOURS)**
    - Understanding building codes and regulations related to 3D printed structures.
    - Certification and standards for 3D printed buildings.
12. **Project Planning and Management**: **(2 HOURS)**
    - Steps in planning a 3D printed construction project.
    - Managing logistics, timelines, and workforce for 3D printed construction.
13. **Future Trends in 3D Printing for Civil Engineering**: **(2 HOURS)**
    - Emerging technologies and future possibilities.
    - Integration with other advanced technologies like AI, IoT, and robotics.
14. **Hands-on Session**: **(2 HOURS)**
    - Practical demonstration of 3D printing.
    - Participants design and print a small-scale model.
15. **Q&A and Discussion**: **(2 HOURS)**
    - Open floor for questions and discussions.
    - Networking opportunities and sharing of ideas among participants.

Course Outcomes

- **Fundamental Understanding of 3D Printing**: Participants will gain a thorough understanding of the principles, processes, and materials involved in 3D printing technology.
- **Knowledge of Applications in Civil Engineering**: Attendees will learn about the various applications of 3D printing in civil engineering, including construction, infrastructure development, and design prototyping.
- **Enhanced Design Skills**: Participants will develop enhanced skills in digital design and modeling, enabling them to create detailed and precise 3D models for civil engineering projects.
- **Proficiency in 3D Printing Software**: Attendees will become proficient in using various 3D printing software tools, including CAD programs and slicing software, essential for preparing and executing 3D printing projects.

- **Hands-on Experience**: Participants will gain hands-on experience with 3D printers, learning how to operate and troubleshoot different types of 3D printing equipment.
- **Material Selection and Optimization**: Attendees will learn how to select appropriate materials for different 3D printing applications and optimize material usage to ensure structural integrity and cost-efficiency.
- **Innovation in Construction Methods**: Participants will explore innovative construction methods enabled by 3D printing, such as rapid prototyping, on-site fabrication, and the creation of complex geometries that are difficult to achieve with traditional methods.
- **Sustainability and Efficiency**: Attendees will understand the potential of 3D printing to improve sustainability and efficiency in construction by reducing waste, lowering material costs, and shortening project timelines.
- **Project Management Skills**: Participants will learn how to manage 3D printing projects from conception through execution, including planning, budgeting, and quality control.
- **Collaboration and Networking**: The workshop will provide opportunities for participants to collaborate and network with other professionals in the field, fostering a community of practice and encouraging the exchange of ideas and experiences.

Research topic

Investigating the integration of recycled materials in 3D printing for civil engineering applications post-workshop could be a compelling research topic. Exploring how recycled aggregates and polymers affect structural integrity, sustainability metrics, and cost-efficiency in construction projects would be pertinent to advancing sustainable practices in the industry.

Assignments

1. **esearch Paper**: Write a research paper on the current applications of 3D printing in civil engineering. Include case studies of real-world projects where 3D printing has been successfully implemented, and discuss the benefits and challenges associated with this technology.
2. **Design Project**: Design a structure using 3D modeling software that demonstrates the potential of 3D printing in civil engineering. Include detailed plans, structural analysis, and considerations for material selection and construction techniques.
3. **Cost-Benefit Analysis**: Conduct a cost-benefit analysis comparing traditional construction methods with 3D printing for a specific type of civil engineering project (e.g., residential buildings, bridges, infrastructure components). Consider factors such as material costs, labor requirements, construction time, and long-term maintenance.
4. **Presentation on Future Trends**: Prepare a presentation on emerging trends and future possibilities of 3D printing in civil engineering. Discuss advancements in materials, technologies, and potential applications that could revolutionize the industry in the next decade.
5. **Critique and Debate**: Organize a debate or a panel discussion on the ethical and regulatory implications of widespread adoption of 3D printing in civil engineering. Topics could include intellectual property concerns, safety regulations, environmental impact, and implications for labor markets.

These assignments will help students deepen their understanding of 3D printing technology in civil engineering and encourage critical thinking about its practical applications and implications.

Schedule

Award of certificate

Course Coordinator

Mentors

VALUE ADDED COURSE ON ENTREPRENEURSHIP AND INNOVATION

Innovation involves generating unique ideas and using them to create novel products, services, or methodologies. It's about pushing boundaries, making the impossible possible, and improving existing markets. For instance, introducing energy-efficient equipment for old cars is an innovation that benefits both consumers and the environment[1].
On the other hand, **entrepreneurship** is the process of creating and operating businesses using innovative ideas. Entrepreneurs identify market opportunities and capitalize on them to maximize profits. While not all entrepreneurs are innovators, those with creative skills tend to thrive in business. They often leverage existing innovations that are trending in the market[1].

In summary:

- **Innovation**: Generating new ideas and implementing them to introduce something fresh.
- **Entrepreneurship**: Building businesses by capitalizing on innovative ideas.

Remember, these concepts are closely related but distinct. Innovation fuels entrepreneurship, and entrepreneurs play a crucial role in turning great ideas into viable business ventures

Entrepreneurship and Innovation.

1. **Introduction to Entrepreneurship**: (04 HRS)
    - Understanding the role of entrepreneurs in the economy.
    - Identifying entrepreneurial opportunities.
    - Learning about different types of entrepreneurs.
2. **Innovation Management**: (03 HRS)
    - Strategies for fostering creativity and innovation.
    - Managing the innovation process.
    - Implementing innovative ideas within organizations.
3. **Business Model Development**: (03 HRS)
    - Creating and refining business models.
    - Analyzing value propositions and revenue streams.
    - Understanding customer segments and channels.
4. **Market Research and Analysis**: (03 HRS)
    - Conducting market research to identify customer needs.
    - Analyzing market trends and competitive landscapes.
    - Developing effective marketing strategies.
5. **Financial Aspects of Entrepreneurship**: (05 HRS)
    - Financial planning, budgeting, and forecasting.
    - Sources of funding (e.g., venture capital, angel investors).
    - Managing financial risks.
6. **Legal and Ethical Considerations**: (05 HRS)

- Intellectual property rights (patents, trademarks, copyrights).
- Legal structures for startups (sole proprietorship, LLC, corporation).
- Ethical decision-making in business.

7. **Scaling Up and Growth Strategies**: (04 HRS)
   - Expanding a startup into a sustainable business.
   - Strategic partnerships, mergers, and acquisitions.
   - Managing growth challenges.
8. **Entrepreneurial Mindset and Leadership**: (03 HRS)
   - Cultivating resilience, adaptability, and risk-taking.
   - Effective leadership skills for entrepreneurs.
   - Overcoming obstacles and learning from failures.

COORDINATOR :-- DR PRADEEP CHAURASIA

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Value Added Course

Indian Startups for Economic Development

Indian startups for economic development

A startup is essentially a young company in the initial stages of its business journey. It's founded by one or more entrepreneurs who aim to develop a unique product or service and bring it to market, often with the goal of disrupting existing industries and changing the world at scale[1].

Here are some key points about startups:

- **Innovation and Growth**: Startups focus on innovation and aim for rapid growth. They often start with a minimal viable product (MVP) and iterate based on feedback and usage data[1].
- **Funding**: Initially, founders may finance their startups themselves, but as they grow, they may seek external funding from family, friends, venture capitalists, crowdfunding, and loans[2].
- **Risk and Reward**: While startups come with high risks due to uncertainty and initial lack of revenue, they can also offer great benefits and opportunities for learning and growth[2].
- **Location and Structure**: Deciding on the right location and legal structure is crucial for a startup's success. The choice of location can depend on the nature of the product or service offered[2].

Startups are not just limited to the tech industry; they can be found in various sectors, aiming to provide innovative solutions to everyday problems. If you're interested in learning more or considering starting your own venture, it's important to conduct thorough market research and develop a solid business plan to guide your startup's mission, vision, and goals.

The course contents for startups can vary depending on the program, but they generally cover a range of topics essential for budding entrepreneurs. Here's an overview of what you might expect in a startup course:

1. **Idea Validation**:
    - Idea Identification and Assessment
    - Market Research and Analysis
2. **Finance & Legal**:
    - Building a Legal Foundation
    - Understanding Finance Basics
    - Introduction to Business Planning
3. **Pitching & Funding**:
    - Fundraising & Valuation
    - Pitching to Investors

    - Understanding Term Sheets
4. **Product Development**:
    - Design Thinking
    - Minimum Viable Product (MVP) Development
    - User Experience and Feedback
5. **Growth Strategies**:
    - Marketing and Sales Techniques
    - Scaling Operations
    - Customer Acquisition and Retention
6. **Leadership & Management**:
    - Building and Managing a Team
    - Organizational Culture
    - Decision Making and Problem Solving
7. **Networking & Mentoring**:
    - Interacting with Fellow Entrepreneurs
    - Access to Industry Mentors
    - Community Engagement

These topics are designed to equip you with the knowledge to start and grow your business, understand the startup ecosystem, and navigate the challenges of entrepreneurship. Programs like the **Startup India Learning Program** offer structured learning from top founders and industry experts, and they often include certifications upon completion

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Value Added Course

Digital Marketing

Digital Marketing

Digital marketing is a broad field that encompasses various strategies and techniques used to connect with customers online. It leverages the internet and digital technologies, such as computers, mobile devices, social media, search engines, and other channels to reach consumers. Here's a brief overview of what digital marketing includes:

- **Types of Digital Marketing**:
  - **Content Marketing**: Creating and sharing valuable content to attract and engage a target audience.
  - **Search Engine Optimization (SEO)**: Optimizing content to rank higher on search engine results pages.
  - **Social Media Marketing**: Using platforms like Facebook, Twitter, and Instagram to reach and interact with customers.
  - **Email Marketing**: Sending targeted messages to a group of people via email.
  - **Paid Advertising**: Includes pay-per-click (PPC) ads, display ads, and social media ads.
  - **Affiliate Marketing**: Promoting other people's products and earning a commission for each sale or lead.
- **Skills Required**:
  - **Analytical Skills**: To interpret data and make data-driven decisions.
  - **Creativity**: For crafting engaging content and campaigns.
  - **Technical Skills**: Understanding the digital tools and platforms used in marketing campaigns.
  - **Communication Skills**: To effectively convey messages and interact with customers.
- **Careers in Digital Marketing**:
  - **Digital Marketing Manager**: Oversees digital marketing strategies and campaigns.
  - **SEO Specialist**: Focuses on improving website rankings.
  - **Content Strategist**: Plans and manages content creation and distribution.
  - **Social Media Manager**: Manages a brand's presence on social media platforms.
  - **Data Analyst**: Interprets customer data to inform marketing strategies.

The field is constantly evolving with new technologies and platforms, making it an exciting and dynamic career choice.

Digital marketing is essential for businesses today as it allows them to reach a larger audience more efficiently and measure the success of their campaigns with greater accuracy. It's a field that combines creativity with analytics, offering a diverse range of opportunities for professionals.

The **course contents** of digital marketing typically cover a wide range of topics to provide a comprehensive understanding of the field. Here's a detailed breakdown of the subjects you might encounter in a digital marketing course:

- **Introduction to Digital Marketing**:
  - Defining digital marketing and its relevance
  - Differences from traditional marketing
- **Search Engine Optimization (SEO)**:
  - On-page and off-page SEO techniques
  - Keyword research and analysis
  - Google Analytics and Google Search Console
  - Technical SEO and website audits
- **Search Engine Marketing (SEM)**:
  - Paid search advertising strategies
  - Campaign management and optimization
- **Social Media Marketing**:
  - Using platforms like Facebook, Instagram, and Twitter
  - Engaging with the audience and driving actions
- **Content Strategy**:
  - Creating valuable content for various platforms
  - Content research and planning
- **Web Analytics**:
  - Analyzing visitor behavior on websites
  - Traffic sources and conversion rates
- **Email Marketing**:
  - Designing and sending targeted email campaigns
  - Measuring performance and engagement
- **E-commerce Management**:
  - Online product listing and maintenance
  - Product keyword research and customer retention
- **Internet Marketing**:
  - Strategies for online advertising and promotions
  - Understanding online .
  - The syllabus is designed to equip learners with practical skills and knowledge to plan, execute, and optimize effective digital marketing.

Courses often include both theoretical knowledge and practical applications, ensuring that students not only understand the concepts but also know how to implement them in real-world scenarios. If you're looking to pursue a career in digital marketing, these courses can be a great way to get started and build a strong foundation in the field.

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Value Added Course

Labour Laws & New Labour Codes

Labour Laws And New Labour Codes

Indian labour laws are a comprehensive system designed to regulate employment standards and worker rights in India. The laws cover various aspects such as working conditions, industrial relations, wages, welfare, and social security. They are based on the Indian Constitution and influenced by the International Labour Organization (ILO) conventions[1].

Here's a brief overview of some key aspects of Indian labour laws:

- **Working Conditions**: The Factories Act, 1948, and the Shops and Establishment Act regulate working hours, rest intervals, and other working conditions.
- **Wage Laws**: The Minimum Wages Act, 1948, ensures that workers receive a minimum wage set by the government.
- **Social Security**: The Employees' Provident Fund Organisation and the Employees' State Insurance provide retirement benefits and medical and unemployment benefits, respectively.
- **Maternity Benefits**: The Maternity Benefit (Amendment) Act, 2017, allows female employees to take 6 months of fully paid maternity leave.
- **Industrial Relations**: The Industrial Relations Code, 2020, is one of the four new labour codes that consolidate 44 existing labour laws.

These laws aim to protect workers and ensure fair treatment in the workplace.

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Course contents of labour laws and new labour codes .

The **course contents** for studying Indian labour laws and the new labour codes typically include a detailed analysis of the consolidation of existing laws into the four new labour codes. Here's a breakdown of the topics covered in such a course, based on the information available from the National Programme on Technology Enhanced Learning (NPTEL) and other resources:

1: Introduction to Labour Laws

- Government Policies
- History of Labour Laws in India
- Previous Social Legislations
- National Labour Commission Reports

2: Trade Unions

- Evolution of Trade Unions in India
- Constitutional Freedom to Form Associations and Unions
- International Labour Organization (ILO) on Trade Unions
- Trade Union Definitions, Registration, Cancellation, Management of Funds
- Trade Union Recognition, Immunities

3: Industrial Disputes

- Introduction to Industrial Disputes
- Resolution of Industrial Disputes
- Concept of Workmen, Contract of Service, Contract for Service
- Strike
- Lock-out

4: Employment Stability

- Lay-Off
- Retrenchment
- Closure of Undertakings
- Industrial Employment (Standing Orders)
- Disciplinary Action and Procedures

5: The Code on Wages, 2019

- Introduction to the Code on Wages
- Minimum Wages, Floor Wages, Central and State Advisory Board
- Payment of Wages, Deductions & Recovery, Fines
- Equal Remuneration
- Bonus

6: International Conventions

- ILO Conventions on Minimum Wage, Protection of Wages, Equal Remuneration
- Protection of Workers' Claims (Employer's Insolvency)

7: Code on Social Security, 2020

- Introduction to Social Security Code
- Definitions under Social Security Code
- Social Security Organizations (SSOs)
- Employee's Compensation and Benefits
- Concept of Arising Out of and in the Course of Employment

8: Employee's State Insurance

- Different Benefits under the ESI Scheme

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Value Added Course

Personal Banking

Personal banking, also known as retail banking, is a service provided by banks and financial institutions that deals with individual consumers, rather than businesses or corporations. It's designed to help individuals manage their money, access credit, and save for the future. Here's a brief introduction to personal banking:

Services Offered in Personal Banking:

- **Savings Accounts:** A secure place to deposit money and earn interest over time.
- **Checking Accounts:** Allow for easy access to funds for daily transactions.
- **Credit Cards:** Offer a line of credit for purchases, often with rewards programs.
- **Loans:** Including personal loans, auto loans, and mortgages for purchasing homes.
- **Investment Services:** Such as mutual funds, stocks, and bonds to help grow wealth.
- **Online and Mobile Banking:** For convenient account access, bill payments, and transfers.

Functions of Banks:

- **Accepting Deposits:** To provide a safe place for savings and help in wealth accumulation.
- **Providing Loans:** To finance personal and business needs, stimulating economic growth.
- **Payments and Settlements:** Facilitating transactions through various methods like electronic transfers.
- **Currency Exchange:** Offering foreign exchange services for international dealings.
- **Safekeeping of Valuables:** Providing safe deposit boxes for important documents

Types of Banks in India:

- **Central Bank:** The Reserve Bank of India (RBI), which regulates the monetary and banking system.
- **Commercial Banks:** Including public sector, private sector, and foreign banks that offer a wide range of services.
- **Co-operative Banks:** Serving members with banking and credit services.
- **Payment Banks:** Specializing in remittances and payment services.
- **Small Finance Banks:** Focusing on financial inclusion by providing basic banking services to the underserved sections.

The course contents of personal banking typically cover a range of topics designed to provide comprehensive knowledge and skills in the field. Here are some key components that you might find in a personal banking course:

1. **Introduction to Personal Banking**: Understanding the basics of personal banking, including the types of services offered to individual customers.
2. **Banking Products and Services**: Detailed study of various banking products like savings accounts, checking accounts, credit cards, loans, and mortgages.
3. **Digital Banking**: Exploring online banking services, mobile banking apps, and the impact of technology on personal banking.
4. **Customer Relationship Management**: Techniques for building and maintaining trust-based relationships with customers.
5. **Credit Appraisal**: Learning how to assess the creditworthiness of personal banking customers.
6. **Regulatory Environment**: Understanding the laws and regulations that govern personal banking activities.
7. **Financial Planning and Wealth Management**: Strategies for helping customers manage their finances and build wealth.
8. **Investment Products**: Knowledge about mutual funds, stocks, bonds, and other investment vehicles.
9. **Risk Management**: Identifying and mitigating risks associated with personal banking.
10. **Effective Communication**: Developing skills to communicate effectively with clients, including public speaking modules.

For example, the **Certificate in Personal and Private Banking** is designed to develop knowledge and skills relating to the personal and private banking environment, considering technological developments and regulatory changes Similarly, the **Financial Planning, Banking & Investment Management** course offered by NSE India includes modules on key market fundamentals, technical analysis, wealth management, banking, and derivatives

These courses are aimed at equipping learners with the necessary skills to excel in personal banking and provide excellent service to customers. They are suitable for those looking to enter the banking sector or professionals seeking to enhance their knowledge and advance their careers.

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BEYOND

CERTIFICATE PROGRAMME IN BANKING, FINANCE AND INSURANCE (CPBFI)

Where Potential Meets Opportunity

What our partner colleges and their alumni are saying...

"The programme and the efforts made by Bajaj Finserv on placements led to over 400 of our students finding jobs in good, national-level financial institutions."

Mr Sanjay Bhargava,
Chairman & Trustee, Shiksha Mandal, Wardha

"The various constituents of the programme like the industry-relevant curriculum, HR workshop and Swaroop certainly promote holistic development of young graduates."

Dr G. Vazhan Arasu,
Principal, St. Aloysius College of Commerce, Jabalpur

"The CPBFI classes are most sought-after by our students. It has helped them enhance their placement opportunities."

Dr G. Sahaya Baskaran,
Professor of Physics and Coordinator,
Employability Skills Centre, Andhra Loyola College, Vijayawada

"Before I joined the course I was rejected by three companies and after CPBFI, I gave two interviews and was shortlisted for both. I have had a great leap of confidence after CPBFI. Today I am a better version of myself."

Afhna Shaik
Alumni of Rosary College of Commerce & Arts,
Navelim, Goa

"CPBFI infuses professionalism in students, caters to our learning and bridges the college-industry gap. Trainers provide their best and ensure the concepts are understood by the students. This is one of the best programmes I have done."

Vaibhav Bansode
Alumni of SBES College of Arts & Commerce,
Aurangabad

"We are looking for partners, such as your institute, to reach and train young graduates and prepare them for corporate roles, especially in financial services. Our certificate programme, designed by the industry, for the industry, will develop them into confident professionals. Let us join hands to unlock the potential of your students and build a talent pool for a resurgent India!"

Sanjiv Bajaj,
Chairman and Managing Director,
Bajaj Finserv Limited

The CPBFI Network

Reach	2018-19	2019-20	2020-21	Since inception
States	4	7	8	12
Towns	15	39	58	78
Partner colleges	27	99	143	154
Active centres	22	90	126	161
Batches	30	100	74	#278
Student enrolments	1,022	3,809	4071	#12,000

#As on September 21

The reasons to partner Bajaj Finserv

- Produce graduates that are ready for the industry
- Attract top recruiters for placements
- Improve NAAC/NIRF Ratings and Ranking among the Best Colleges
- Attract top students from the city

About CPBFI

CPBFI is a customised training programme conducted by Bajaj Finserv for graduates, especially the first-generation graduates, across India. CPBFI aims to make these graduates employable for the Banking, Financial Services and Insurance (BFSI) sector. As per industry estimates, less than 50% of the graduates passing out of the colleges are ready for corporate roles. This poses challenges for graduates aspiring for a successful career and for industry looking for skilled employees. CPBFI aims to solve this dual challenge.

CPBFI is a 100-hour training programme designed by Bajaj Finserv in collaboration with industry experts, educational institutes and a leading mental health institute. CPBFI equips participants with the right attitude, skills and industry knowledge, thereby going beyond a typical skill development programme. Successful participants can apply for different roles in banks, finance companies and insurance companies. CPBFI prepares participants for the challenging customer-facing roles in sales, service and operations which offer maximum career opportunities and excellent growth prospects.

CPBFI is conducted by a pool of trainers with extensive industry and training experience. The courses are delivered using an experiential-learning approach based on adult-learning principles. Student are able to participate in the discussions, role plays and other group activities where they can sharpen their own skills and knowledge. CPBFI is short, practical and affordable which makes it accessible to every student. This unique combination of content and pedagogy makes CPBFI one of the best extra-curricular programmes that a college can offer its students.

The data, from the assessments by external recruiters and outcome of the 2 CPBFI Job Fairs, suggests that the CPBFI students are twice as likely to get a role in a corporate, compared to their peers. Bajaj Finserv is continuously working to take this number even higher. The Bajaj Finserv team is currently working towards setting up a placement division that can support the CPBFI participants' access to top recruiters through job fairs, walk-in drives and campus placements.

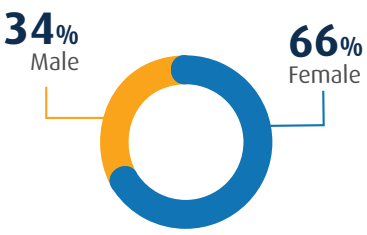
By partnering with Bajaj Finserv, colleges can not only enhance the career opportunities of the students, but also attract top companies to recruit from the college. An industry partnership can benefit the college by improving its NIRF and NAAC rating and its rank in the Best College Rankings by the different agencies. CPBFI is exclusively available to students and alumni of Bajaj Finserv's partner colleges.

How to become a Bajaj Finserv CPBFI partner

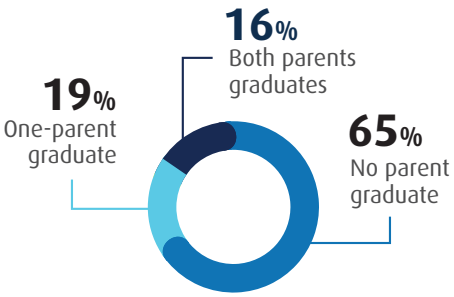
1. Meeting between college officials and Bajaj Finserv representative
2. College decides to partner-with Bajaj Finserv
3. Inform Bajaj Finserv, submit required college data electronically
4. Bajaj Finserv HO team meets college officials – physically or virtually
5. Bajaj Finserv decides to partner with the college
6. Bajaj Finserv and College agree on partnership terms and draft an MoU
7. College mobilises the first CPBFI Batch
8. Bajaj Finserv and College enter into partnership by signing the MoU
9. All CPBFI participants appear for online Pre-CPBFI Quiz and/or Interview
10. Launch of CPBFI at the college at a formal launch ceremony

CPBFI student profile

By gender



By parent education



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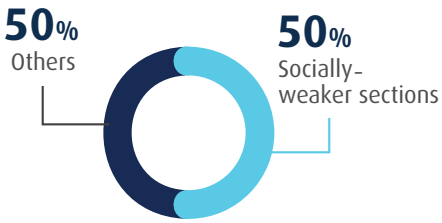

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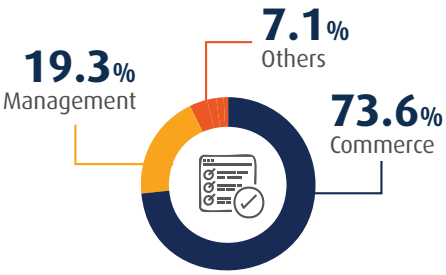
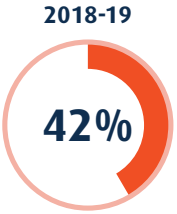
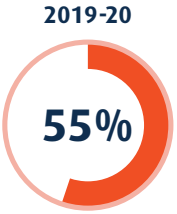
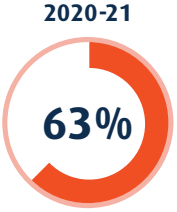


Employability of students

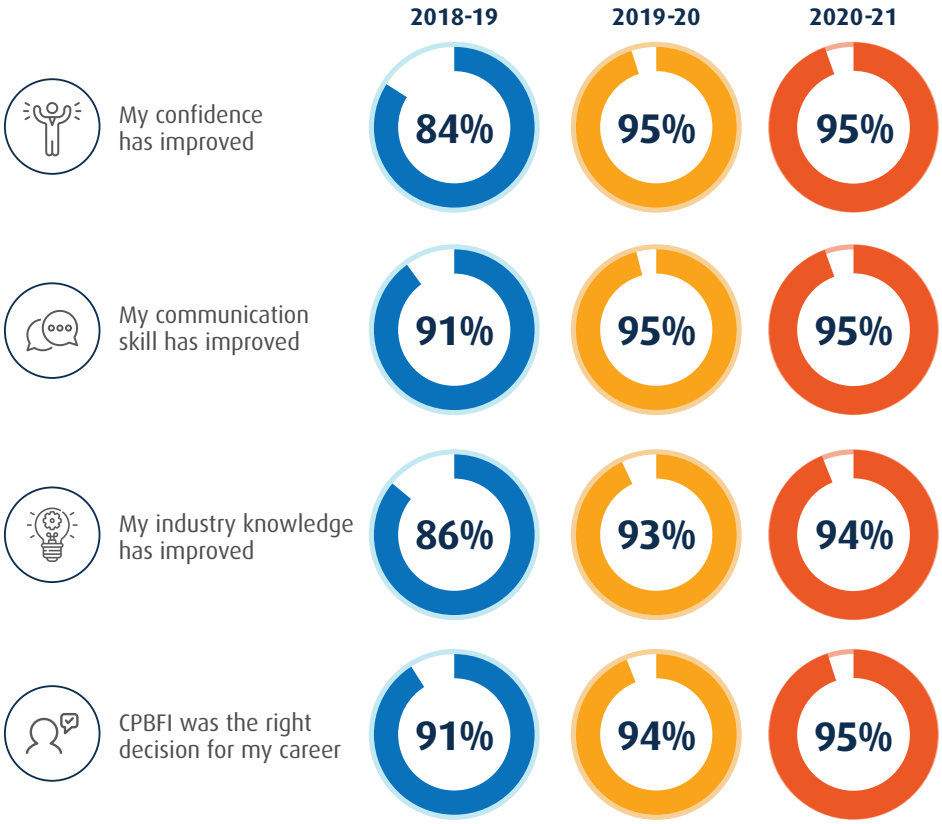






Employability is measured based on results of interview by corporate recruiters

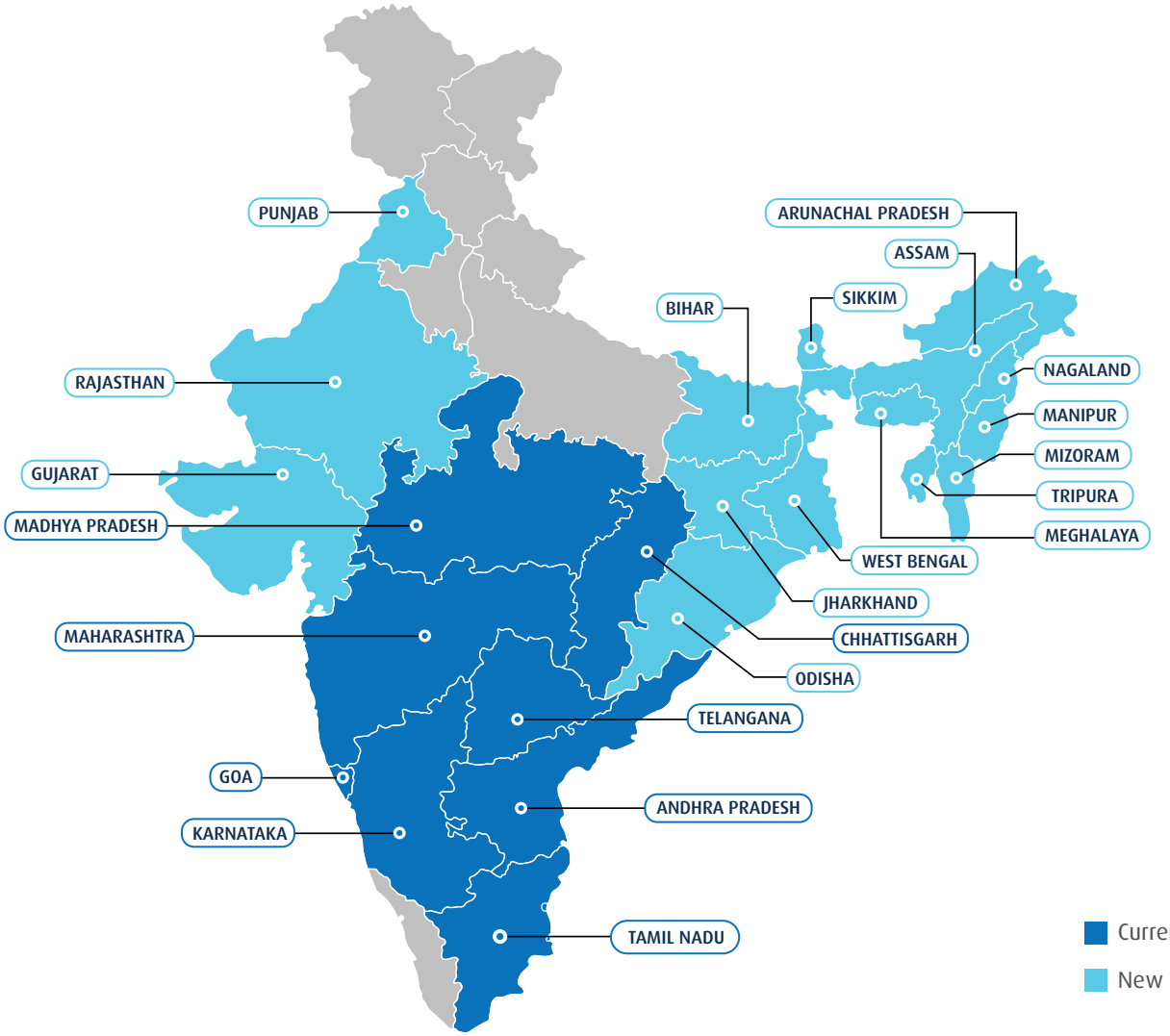
Student satisfaction scores



Numbers indicate % of students agreeing with the statement

CERTIFICATE PROGRAMME IN BANKING, FINANCE AND INSURANCE

Where Potential Meets Opportunity



Our journey so far...

	2016	2017	2018	2019	2020	2021
	CPBFI launched in partnership with Symbiosis International University in Pune	First 2 college partnerships at Wardha and Nagpur	CPBFI enrollment crosses 500	CPBFI Enters Goa, Madhya Pradesh and Karnataka. Enrollment over 1,000. First job fair at Ratnagiri	CPBFI enters Tamil Nadu, Andhra Pradesh, Telangana. 100th batch at Nagpur. 100 batches in 2020. 2nd job fair at Nagpur	CPBFI goes online during Covid-19 pandemic. Regains momentum in October 2020
College Partners	1	5	7	22	90	152
Students Enrolled	36	166	406	1,022	3,809	4071

CPBFI Courses and Structure

ATTITUDE

Course 1: Managing Self - SwaRoop

- SwaRoop orientation
- My Self
- Self-belief – staying assertive
- Mind-body connections and Self-talk
- What are emotions
- Regulating emotions
- What is belief
- ABC Principle of REBT
- Rational and irrational beliefs
- Decision making
- Daily challenges

SKILLS

Course 2: Communication and Workplace Skills

- What is communication
- Goals and barriers in communication
- Modes of communication
- Listening skills and empathy
- Non-verbal expression skills
- Summarisation skills
- Effective communication
- Use of language in communication
- Spoken communication
- Telephonic communication
- Written communication
- Giving and receiving feedback
- Saying and taking NO
- Persuasion and influencing skills
- Working in teams
- Group discussion skills
- Goals and targets at workplace
- Representing self
- Job interview techniques
- Job interview demonstration

KNOWLEDGE

Course 3: Overview of Retail Banking

- Introduction to Banking
- Introduction to Branch Banking
- Customers and Their Needs
- Overview of Banking Products
- Liability Products
- Asset Products
- Third Party and Fee-based Products
- Business Development
- Transaction Processing
- Customer Service
- Compliance and Ethics
- Future of Banking
- Inclusive Banking
- Introduction to NBFCs
- Overview of Corporate Banking
- Banking and Me

KNOWLEDGE

Course 4: Overview of Insurance

- Need for Insurance
- Evolution of Insurance
- Overview of an Insurance Company
- Overview of Retail Insurance Products
- Overview of the Companion Products
- Overview of Insurance Distribution Channels
- Selling Insurance
- Insurance Operations
- Customer Service
- Ethics and Compliance in Insurance
- Future of Insurance
- Inclusive Insurance
- Profitability Drivers for Insurance

Mock interviews by corporate recruiters

Classroom Only

Banking
24 hours
8 days

Insurance
24 hours
8 days

Communication
36 hours
12 days

Managing Self
12 hours
2 days

96 hrs over 30 days

Online Only

Banking
24 hours
12 days

Insurance
24 hours
12 days

Communication
36 hours
18 days

Managing Self
12 hours
4 days

96 hrs over 46 days

Our partners

Centre for Investment Education and Learning (CIEL)

WalchandPlus a Division of Walchand PeopleFirst Limited (WPFL)

Centum Learning Limited.

Bajaj Finserv Limited, 6th Floor, Bajaj Finserv Corporate Office,
Off Pune-Ahmednagar Road, Viman Nagar, Pune - 411 014, Maharashtra, India
Tel: +91 20 30405700 • Fax: +91 20 30405792

Follow us on LinkedIn
https://www.linkedin.com/showcase/finservcpbfi

BEYOND is an employability initiative of Bajaj Finserv Limited and its group companies, aimed at enhancing the employability of graduates from small towns, especially first generation graduates. Under this initiative, customised training programmes are conducted, in collaboration with college partners, for the students and alumni of the partner colleges. Certificate Programme in Banking, Finance and Insurance (CPBFI), launched in FY 2015-16 is the flagship training programme of BEYOND. CPBFI is conducted in over 50 cities across India and more than 10,000 students have benefitted from CPBFI.

AKS University
SATNA

Sherganj Panna Road, Satna (M.P.)
www.aksuniversity.com

Faculty of Management Studies

Value Added Course

Business Planning

Business Planning

Business planning is a fundamental aspect of starting and running a successful business. It involves the creation of a detailed document that outlines a company's goals and the strategies it will use to achieve them. Here's a brief introduction to business planning:

What is Business Planning? Business planning is the process of setting objectives for an organization and developing a plan of action to achieve these objectives. It serves as a roadmap that guides the business in its growth and development, helping to bridge the gap between the current state of the organization and where it aims to be in the future[1].

Importance of Business Planning:

- **Provides Direction:** By setting clear goals, business planning gives managers and employees a clear vision of what they are working towards[1].
- **Reduces Uncertainty:** It anticipates future changes and prepares the organization to handle them effectively[1].
- **Minimizes Wastefulness:** Detailed plans ensure that all departments are aligned, leading to coordinated actions and efficient use of resources[1].
- **Encourages Innovation:** The planning process requires creativity and innovation from managers, pushing them to think outside the box[1].
- **Facilitates Decision-Making:** With clear goals and a plan of action, decision-making becomes more straightforward and focused[1].

Key Components of a Business Plan:

1. **Executive Summary:** A concise overview of the business plan.
2. **Business Description:** Details about the industry, business structure, and product or service offerings.
3. **Market Strategies:** Analysis of potential customers and marketing approaches.
4. **Competitive Analysis:** Evaluation of competitors and strategies to gain a competitive edge.
5. **Design and Development Plan:** Plans for product or service development.
6. **Operations and Management Plan:** Organizational structure and management responsibilities.
7. **Financial Factors:** Financial projections, income statements, and other relevant financial information

A well-crafted business plan not only serves as an internal guide for a company but can also be used to attract investors, secure loans, and recruit key employees. It's a living document that should be updated regularly to reflect the changing circumstances of the business

The course contents for business planning typically cover a comprehensive range of topics that equip students with the knowledge and skills to create effective business plans. Here's an outline of the common components that you might find in a business planning course:

1. **Introduction to Business Planning:**
    - Understanding the purpose and importance of a business plan.
    - The role of business planning in entrepreneurship and business management.
2. **Executive Summary:**
    - Crafting a compelling executive summary that outlines the business concept and financial highlights.
3. **Business Description:**
    - Defining the business, its legal structure, and its mission statement.
    - Industry background and current positioning.
4. **Market Analysis:**
    - Techniques for market research and analysis.
    - Identifying target market segments and understanding customer needs.
5. **Competitor Analysis:**
    - Analyzing the competitive landscape.
    - Developing strategies to establish a competitive advantage.
6. **Products and Services:**
    - Describing the products or services offered.
    - Detailing the benefits and features.
7. **Marketing Plan and Sales Strategies:**
    - Developing marketing and sales strategies.
    - Pricing, promotion, distribution, and sales forecast.
8. **Brand Strategy:**
    - Building a brand identity and strategy.
    - Positioning and brand development.
9. **Operations Plan:**
    - Outlining the operational workflow.
    - Production, location, facilities, and equipment.
10. **Management and Organization:**
    - Describing the organizational structure.
    - Management team and personnel plan.
11. **Financial Planning:**
    - Financial projections and requirements.
    - Understanding income statements, balance sheets, and cash flow statements.
12. **Funding Request:**
    - Identifying funding requirements.
    - Exploring different types of financing and investment.
13. **Appendices and Exhibits:**
    - Including relevant documents, such as resumes, permits, leases, and legal documents.
14. **Business Plan Presentation:**
    - Skills for presenting the business plan effectively to stakeholders and potential investors.

SWAYAM ONLINE COURSE CERTIFICATION

MP08010027

This certificate is awarded to

Akash Gupta

for successfully completing the Two-credit course

Financial Accounting and Analysis

with a consolidated score of 82%

(proctored examination held on 04-12-2023) - July 2023 Semester

offered by **Indian Institute of Management Bangalore**

Vasanthi Srinivasan
National Coordinator
Indian Institute of Management Bangalore

Issued On : 27/12/2023
To validate and check scores : https://swayam.gov.in/

SWAYAM ONLINE COURSE CERTIFICATION

MP08010026

This certificate is awarded to

Ekta Tiwari

for successfully completing the Two-credit course

Financial Accounting and Analysis

with a consolidated score of 73.8%

(proctored examination held on 04-12-2023) - July 2023 Semester

offered by **Indian Institute of Management Bangalore**

Vasanthi Srinivasan
National Coordinator
Indian Institute of Management Bangalore

Issued On : 27/12/2023
To validate and check scores : https://swayam.gov.in/

SWAYAM ONLINE COURSE CERTIFICATION

MP08010024

This certificate is awarded to

Hrishabh Bharadwaj

for successfully completing the Two-credit course

Financial Accounting and Analysis

with a consolidated score of 69.6%

(proctored examination held on 04-12-2023) - July 2023 Semester

offered by **Indian Institute of Management Bangalore**

Vasanthi Srinivasan
National Coordinator
Indian Institute of Management Bangalore

Issued On : 27/12/2023
To validate and check scores : https://swayam.gov.in/

Financial Accounting and Analysis

By Padmini Srinivasan | Indian Institute of Management Bangalore (IIMB)

Financial Accounting and Analysis: AC105x

Are you one of those professionals who is curious and wants to learn about financial statements, but is intimidated by financial numbers and jargon? Then this course is for you!
In this course, we will demystify accounting jargon, help you understand financial statements and analyse them for better decisions. Whatever be your background – marketing, operations, supply chain, strategy, engineering or others, in today's competitive world, you need to use and interpret crucial financial data for making informed decisions.
This course will enable you to:

- Understand the various elements of financial statements
- Apply accounting principles related to its preparation
- Use tools and techniques to analyse and interpret the key parameters of financial performance

The course has direct appl evance in every professional's life. Concepts learnt in the course can be applied in day to day management for improving ding value for the organization. You will also be able to assess financial implications of your decisions.
The course will be covered in an easy, simple and interactive manner through various hands-on activities, short cases and easy-to-understand examples.
No previous finance knowledge is needed. Come armed with enthusiasm and curiosity to learn.

What you'll learn

- Basic financial concepts
- Financial statements and their elements
- Various accounting standards with respect to the elements in the financial statements
- Techniques to analyse the financial statements
- Interpretation of financial statements for better decision-making

Summary

Course Status :	Upcoming
Course Type :	Core
Duration :	6 weeks
Category :	◦ Management Studies
Credit Points :	3
Level :	Postgraduate
Start Date :	26 Jul 2024
End Date :	31 Oct 2024
Enrollment Ends :	31 Aug 2024
Exam Date :	07 Dec 2024 IST
Shift :	2

Note: This exam date is subjected to change based on seat availability. You can check final exam date on your hall ticket.

Course layout

Week 1: Introduction to Financial Accounting
Week 2 : A Closer Look at the Balance Sheet
Week 3 : A Closer Look at the Income Statement, Cash Flow Statement and Statement of Changes in Equity
Week 4 : Traditional Accounting - Learning Accounting in Accountants Way
Week 5 : Financial Statement Analysis – I
Week 6 : Financial Statement Analysis - II

Click here (https://storage.googleapis.com/swayam-node2-production.appspot.com/assets/img/imb24_mg08/Financial Accounting and Analysis new Format Syllabus.pdf) for Syllabus

Exam schedule (https://drive.google.com/file/d/1nt_aSaAwPjy1uC-coy5OVBETcJ7QhcRD/view?usp=sharing)

Books and references

Financial Statements and Analysis - Professor M S Narasimhan

Instructor bio

Padmini Srinivasan

Indian Institute Of Management Bangalore (IIMB)

Dr. Padmini Srinivasan is an Associate Professor, Finance & Accounting Area at the Indian Institute of Management Bangalore (IIMB). She is a Chartered Accountant and a Company Secretary by practice. She received her Ph.D. from the National Law School of India University. Her areas of expertise and interests include Financial Accounting, Financial Statement Analysis, Management Accounting and Corporate Governance and Accountability. Prior to joining IIMB, she worked in industry for more than 14 years in various positions in Treasury, Planning, MIS and Accounting. She is a corporate trainer and a consultant to several organizations. Her research interests are in the areas of Corporate Governance and Accountability, Corporate Reporting and Disclosures, Value Relevance of Accounting Numbers and Management Education.

Course certificate

Enrolling and learning from the course is free. However, if you wish to obtain a certificate, you must register and take the proctored exam in person at one of the designated exam centre's. The registration URL will be announced when the registration form is open. To obtain the certification, you need to fill out the online registration form and pay the exam fee. More details will be provided when the exam registration form is published, including any potential changes. For further information on the exam locations and the conditions associated with filling out the form, please refer to the form.

Grading Policy:

Assessment Type	Weightage
Mid-term & End-term	25%
Final Exam	75%

Certificate Eligibility:

- 40% marks and above in internal assessment (Mid Term & End Term)
- 40% marks and above in the final proctored exam

Score	Type of Certificate
>=90	Gold
75 - 89	Silver
70 - 74	Bronze
40 - 70	Successfully Completed
<40	No Certificate

Sample Certificate:

Disclaimer: In order to be eligible for the certificate, you must register for enrolment and exams using the same email ID. If different email IDs are used, you will not be considered eligible for the certificate.

Value Added Course
On
Spawn Production and Value Addition on Mushrooms

Table of Contents

1. Introduction

Background and Importance of Mushroom Cultivation

Mushrooms have gained significant importance in the field of agriculture and biotechnology due to their nutritional value, medicinal properties, and economic potential. With increasing demand in both domestic and international markets, the cultivation of mushrooms presents a lucrative opportunity for biotechnology students to explore innovative techniques in spawn production and value addition.

Objectives of the Course

The 30-day value-added course on Spawn Production and Value Addition on Mushrooms at AKS University, Satna, aimed to achieve the following objectives:

- **Knowledge Enhancement:** Provide in-depth understanding of mushroom biology, spawn production techniques, and value addition processes.
- **Skill Development:** Equip students with practical skills necessary for spawn production, substrate preparation, inoculation methods, and value-added product development.
- **Industry Relevance:** Align course content with current industry practices to prepare students for careers in mushroom cultivation and biotechnology.
- **Research Orientation:** Encourage research and innovation in mushroom cultivation through practical projects and case studies.

2. Planning Phase

Course Development Team

The course was developed by a team of experienced faculty members specializing in biotechnology and agriculture. External consultants and industry experts were also consulted to ensure the curriculum's alignment with industry standards and emerging trends in mushroom cultivation.

Identification of Learning Objectives

The learning objectives were carefully identified to cater to the specific needs of B.Tech Biotechnology students:

- Understand the principles of mushroom cultivation and the importance of spawn production.
- Acquire practical skills in laboratory techniques for spawn production and substrate preparation.
- Learn methods for value addition to mushrooms through drying, preservation, and product formulation.
- Explore entrepreneurial opportunities in mushroom cultivation and biotechnology applications.

Curriculum Design and Module Structure

The course was structured into six modules, each focusing on different aspects of mushroom cultivation and value addition. The modules were designed to build upon each other, providing a comprehensive learning experience from theory to practical application.

3. Module Structure

Module 1: Introduction to Mushrooms and Their Importance

- **Topics Covered:**
    - Introduction to fungi and mushroom biology.
    - Types of mushrooms and their nutritional benefits.
    - Global and domestic market trends in mushroom cultivation.

Module 2: Basics of Spawn Production

- **Topics Covered:**
    - Overview of spawn and its importance in mushroom cultivation.
    - Laboratory setup for spawn production.
    - Sterilization techniques and media preparation.

Module 3: Techniques for Spawn Production

- **Topics Covered:**
    - Different methods of spawn production (e.g., grain spawn, sawdust spawn).
    - Inoculation techniques and incubation periods.
    - Quality control and troubleshooting in spawn production.

Module 4: Mushroom Cultivation Techniques

- **Topics Covered:**
    - Growing conditions and environmental requirements for different mushroom species.
    - Disease management and pest control strategies.
    - Harvesting and post-harvest handling of mushrooms.

Module 5: Value Addition to Mushrooms

- **Topics Covered:**
    - Techniques for mushroom drying and preservation.
    - Value-added products: extracts, powders, and formulations.
    - Product development and market feasibility analysis.

Module 6: Practical Workshops and Industry Insights

- **Activities Included:**
    - Hands-on training in spawn production and substrate preparation.
    - Field visits to mushroom farms and processing units.
    - Guest lectures by industry experts on entrepreneurship and market opportunities.

4. Execution Phase

Resource Allocation

- **Facilities:** Dedicated laboratory space equipped with sterilization equipment, incubators, and necessary tools.
- **Faculty:** Experienced instructors with expertise in mushroom cultivation and biotechnology.
- **Materials:** Provision of mushroom cultivation kits, raw materials for substrate preparation, and essential chemicals.

Daily Schedule and Activities

The course followed a structured daily schedule to maximize learning outcomes:

- **Morning Sessions:** Theoretical lectures on fundamental concepts and principles.
- **Afternoon Sessions:** Practical demonstrations and hands-on workshops in the laboratory.
- **Evening Sessions:** Guest lectures, case studies, and discussions on industry trends and career opportunities.

Practical Workshops and Hands-On Sessions

- **Activities Conducted:**
    - Step-by-step demonstrations of spawn production techniques.
    - Group exercises in substrate preparation and inoculation methods.
    - Simulation of value addition processes such as drying and product formulation.

5. Assessment and Evaluation

Methods Used for Evaluation

- **Continuous Assessment:** Quizzes, assignments, and laboratory reports to assess theoretical knowledge and practical skills.
- **Final Project:** Individual or group projects on spawn production, value-added product development, or market analysis.
- **Feedback Mechanism:** Regular feedback sessions to address student queries and improve teaching methodologies.

Student Feedback and Improvement

- **Feedback Analysis:** Positive responses regarding the relevance of course content, practical applicability, and industry insights.
- **Areas for Improvement:** Suggestions for more intensive practical sessions and additional guest lectures on emerging technologies.

6. Outcomes and Achievements

Knowledge Enhancement

- **Deepened Understanding:** Improved knowledge of mushroom biology, spawn production techniques, and value addition processes.
- **Theoretical Foundation:** Enhanced theoretical understanding through comprehensive study materials and interactive lectures.

Skill Development

- **Practical Skills:** Proficiency in laboratory techniques for spawn production, substrate preparation, and value-added product development.
- **Critical Thinking:** Ability to analyze challenges in mushroom cultivation and propose innovative solutions.

Industry Readiness and Employability

- **Career Preparedness:** Readiness for careers in mushroom cultivation, biotechnology research, and entrepreneurship.
- **Employability Skills:** Acquired skills aligned with industry demands, enhancing job prospects and entrepreneurship opportunities.

7. Conclusion

Summary of Course Success

The 30-day value-added course on Spawn Production and Value Addition on Mushrooms at AKS University, Satna, successfully achieved its objectives of enhancing knowledge, developing practical skills, and preparing students for careers in mushroom cultivation and biotechnology. The structured modules, hands-on workshops, and industry insights provided a comprehensive learning experience that was well-received by students and faculty alike.

Future Recommendations

- **Expansion of Practical Sessions:** Incorporate more intensive practical workshops and field visits to enhance hands-on learning.
- **Integration of Emerging Technologies:** Include sessions on advanced techniques such as bioreactor cultivation and genomic studies in mushroom research.
- **Continued Industry Engagement:** Foster collaborations with industry stakeholders to stay updated on technological advancements and market trends.

In conclusion, the course not only enriched the academic experience of B.Tech Biotechnology students but also contributed significantly to their professional development and preparedness for the evolving field of mushroom cultivation and biotechnology. The feedback received will be instrumental in refining future iterations of the course to meet the growing demands of the industry and academia alike.

Value Added Course
On
Bioformulation of Fungal and Bacterial Bio-control Agents

Table of Contents

1. Introduction

Importance of Bio-control Agents in Agriculture

Bio-control agents play a crucial role in sustainable agriculture by offering environmentally friendly alternatives to chemical pesticides. Fungal and bacterial bio-control agents specifically target pests and pathogens, reducing crop damage and minimizing adverse effects on human health and the environment. This course on bioformulation aims to equip B.Sc. (Hons.) and B.Tech Biotech students with the knowledge and skills necessary to develop and apply these bio-control agents effectively.

Objectives of the Course

The 30-day value-added course on Bioformulation of Fungal and Bacterial Bio-control Agents at AKS University, Satna, is designed to achieve the following objectives:

- **Knowledge Enhancement:** Provide comprehensive understanding of fungal and bacterial bio-control agents, their mechanisms of action, and formulation techniques.
- **Skill Development:** Develop practical skills in bioformulation, including isolation, identification, and cultivation of bio-control agents.
- **Industry Relevance:** Align course content with current agricultural practices and industry demands in bio-control and biotechnology.
- **Research Orientation:** Encourage research and innovation in bioformulation through practical projects and case studies.

2. Planning Phase

Course Development Team

The course was developed by a multidisciplinary team comprising faculty members specializing in biotechnology, microbiology, and agricultural sciences. External consultants, including

industry experts and researchers, were also consulted to ensure the curriculum's alignment with current trends and technologies in bio-control.

Identification of Learning Objectives

The learning objectives were carefully identified to cater to the specific needs of B.Sc. (Hons.) and B.Tech Biotech students:

- Understand the principles and importance of bio-control in integrated pest management.
- Acquire practical skills in isolation, identification, and characterization of fungal and bacterial bio-control agents.
- Learn techniques for formulation, storage, and application of bio-control agents in agriculture.
- Explore opportunities for entrepreneurship and research in bioformulation and agricultural biotechnology.

Curriculum Design and Module Structure

The course was structured into six modules, each focusing on different aspects of bioformulation and bio-control:

3. Module Structure

Module 1: Introduction to Bio-control Agents

- **Topics Covered:**
    - Overview of integrated pest management (IPM) and bio-control principles.
    - Types of bio-control agents: fungal, bacterial, and viral.
    - Benefits and challenges of bio-control in sustainable agriculture.

Module 2: Isolation and Identification of Bio-control Agents

- **Topics Covered:**
    - Methods for isolation and purification of fungal and bacterial strains.

- Morphological and biochemical characterization techniques.
- Molecular identification using PCR and sequencing.

Module 3: Cultivation and Mass Production Techniques

- **Topics Covered:**
  - Culture media formulation and optimization for bio-control agents.
  - Fermentation techniques: submerged and solid-state fermentation.
  - Scale-up strategies for mass production of bio-control agents.

Module 4: Formulation and Delivery Systems

- **Topics Covered:**
  - Techniques for formulation of bio-control agents (e.g., emulsions, granules, encapsulation).
  - Shelf-life stability and storage conditions.
  - Application methods in field crops, greenhouse, and post-harvest treatments.

Module 5: Regulatory and Safety Considerations

- **Topics Covered:**
  - Regulatory requirements and approvals for bio-control agents.
  - Environmental and safety assessments.
  - Case studies of successful commercialization and regulatory challenges.

Module 6: Practical Workshops and Industry Insights

- **Activities Included:**
  - Hands-on training in isolation, identification, and cultivation of bio-control agents.
  - Formulation workshops: preparation of bio-control formulations.
  - Field visits to agricultural research stations and bio-control product companies.

4. Execution Phase

Resource Allocation

- **Facilities:** Dedicated laboratories equipped with microbiological and biotechnological equipment, including laminar flow hoods, incubators, and bioreactors.
- **Faculty:** Experienced instructors with expertise in microbiology, biotechnology, and agricultural sciences.
- **Materials:** Supplies for microbial culture, media preparation, and formulation experiments.

Daily Schedule and Activities

The course followed a structured daily schedule to optimize learning outcomes:

- **Morning Sessions:** Theoretical lectures on bio-control principles, microbial physiology, and formulation techniques.
- **Afternoon Sessions:** Practical demonstrations and hands-on workshops in the laboratory.
- **Evening Sessions:** Guest lectures by industry experts, case studies, and group discussions on emerging trends and career opportunities in bioformulation.

Practical Workshops and Hands-On Sessions

- **Activities Conducted:**
    - Step-by-step demonstrations of isolation and identification techniques for bio-control agents.
    - Group exercises in culture media preparation, fermentation, and formulation of bio-control products.
    - Simulation of field trials and efficacy testing of bio-control formulations.

5. Assessment and Evaluation

Methods Used for Evaluation

- **Continuous Assessment:** Quizzes, laboratory reports, and assignments to assess theoretical knowledge and practical skills.

- **Final Project:** Individual or group projects on bioformulation, efficacy testing, or development of novel delivery systems.
- **Feedback Mechanism:** Regular feedback sessions to address student queries and improve teaching methodologies.

Student Feedback and Improvement

- **Feedback Analysis:** Positive responses regarding the relevance of course content, hands-on learning experiences, and industry insights.
- **Areas for Improvement:** Suggestions for additional practical sessions and deeper exploration of regulatory aspects and commercialization strategies.

6. Outcomes and Achievements

Knowledge Enhancement

- **Deepened Understanding:** Enhanced knowledge of bio-control principles, microbial diversity, and formulation techniques.
- **Theoretical Foundation:** Comprehensive understanding of the scientific basis and practical application of bio-control agents in agriculture.

Skill Development

- **Practical Skills:** Proficiency in laboratory techniques for isolation, identification, cultivation, and formulation of bio-control agents.
- **Critical Thinking:** Ability to analyze complex biological systems and propose innovative solutions in bioformulation.

Industry Readiness and Employability

- **Career Preparedness:** Readiness for careers in agricultural biotechnology, bioformulation research, and regulatory affairs.
- **Employability Skills:** Acquired skills aligned with industry demands, enhancing job prospects in agricultural research institutes, biotech companies, and agribusinesses.

7. Conclusion

Summary of Course Success

The 30-day value-added course on Bioformulation of Fungal and Bacterial Bio-control Agents at AKS University, Satna, successfully achieved its objectives of enhancing knowledge, developing practical skills, and preparing students for careers in agricultural biotechnology. The structured modules, hands-on workshops, and industry insights provided a comprehensive learning experience that received positive feedback from students and faculty alike.

Future Recommendations

- **Expansion of Practical Sessions:** Incorporate more advanced techniques in bioformulation, such as nanoencapsulation and genetic engineering of bio-control agents.
- **Collaborative Research Initiatives:** Foster partnerships with agricultural research organizations and industry stakeholders to enhance research opportunities and technology transfer.
- **Continued Professional Development:** Offer follow-up workshops and seminars on emerging trends in bio-control and sustainable agriculture.

In conclusion, the course not only enriched the academic experience of B.Sc. (Hons.) and B.Tech Biotech students but also contributed significantly to their professional development and preparedness for the dynamic field of agricultural biotechnology. The feedback received will guide future iterations of the course to meet the evolving needs of the industry and academia in bio-control and bioformulation.

Value Added Course
On
Mushroom Cultivation

Table of Contents

1. Introduction

Importance of Mushroom Cultivation

Mushrooms are not only valued for their nutritional benefits but also for their medicinal properties and economic potential. Mushroom cultivation represents a sustainable agricultural practice that can provide high-quality protein, vitamins, and minerals to the diet, while also offering opportunities for entrepreneurship and biotechnological applications. This course aims to equip B.Sc. (Hons.) and B.Tech Biotech students with the knowledge and skills necessary to understand and engage in mushroom cultivation practices effectively.

Objectives of the Course

The 30-day value-added course on Mushroom Cultivation at AKS University, Satna, is designed to achieve the following objectives:

- **Knowledge Enhancement:** Provide comprehensive understanding of mushroom biology, cultivation techniques, and post-harvest management.
- **Skill Development:** Develop practical skills in substrate preparation, spawn production, mushroom cultivation, and value-added product development.
- **Industry Relevance:** Align course content with current agricultural practices and industry demands in mushroom cultivation and biotechnology.
- **Entrepreneurship Opportunities:** Explore entrepreneurial ventures and research avenues in mushroom cultivation and biotechnological applications.

2. Planning Phase

Course Development Team

The course was developed by a team of experienced faculty members specializing in biotechnology, agriculture, and mycology. External consultants, including mushroom cultivation experts and industry professionals, were also consulted to ensure the curriculum's alignment with industry standards and emerging trends.

Identification of Learning Objectives

The learning objectives were carefully identified to cater to the specific needs of B.Sc. (Hons.) and B.Tech Biotech students:

- Understand the lifecycle, morphology, and classification of mushrooms.
- Acquire practical skills in substrate preparation, spawn production techniques, and mushroom cultivation methods.
- Learn about the nutritional and medicinal properties of mushrooms, as well as value-added product development.
- Explore opportunities for entrepreneurship and research in mushroom cultivation and biotechnological applications.

Curriculum Design and Module Structure

The course was structured into six modules, each focusing on different aspects of mushroom cultivation and value addition:

3. Module Structure

Module 1: Introduction to Mushrooms

- **Topics Covered:**
  - Overview of fungi and mushroom biology.
  - Classification of mushrooms and their ecological roles.
  - Importance of mushrooms in nutrition, medicine, and industry.

Module 2: Fundamentals of Mushroom Cultivation

- **Topics Covered:**
  - Lifecycle of mushrooms: from spore to fruiting body.
  - Environmental requirements for mushroom growth.
  - Types of cultivation methods: indoor vs. outdoor, substrate selection.

Module 3: Substrate Preparation and Sterilization Techniques

- **Topics Covered:**
    - Selection and preparation of substrates for different mushroom species.
    - Sterilization techniques: heat treatment, chemical sterilization.
    - Methods for substrate inoculation and spawn preparation.

Module 4: Mushroom Spawn Production

- **Topics Covered:**
    - Laboratory setup for spawn production.
    - Different methods of spawn production: grain spawn, sawdust spawn.
    - Quality control and troubleshooting in spawn production.

Module 5: Mushroom Cultivation Techniques

- **Topics Covered:**
    - Growing conditions and environmental factors for popular mushroom species (e.g., button, oyster, shiitake).
    - Disease management and pest control strategies.
    - Harvesting, post-harvest handling, and storage techniques.

Module 6: Value Addition and Entrepreneurship in Mushroom Cultivation

- **Topics Covered:**
    - Techniques for mushroom drying, preservation, and processing.
    - Value-added products: extracts, powders, and formulations.
    - Market analysis, business planning, and opportunities for entrepreneurship.

4. Execution Phase

Resource Allocation

- **Facilities:** Dedicated laboratory space equipped with sterilization equipment, incubators, and mushroom cultivation kits.
- **Faculty:** Experienced instructors with expertise in mushroom cultivation, biotechnology, and agricultural sciences.
- **Materials:** Supplies for substrate preparation, spawn production, and mushroom cultivation experiments.

Daily Schedule and Activities

The course followed a structured daily schedule to optimize learning outcomes:

- **Morning Sessions:** Theoretical lectures on mushroom biology, cultivation techniques, and value-added product development.
- **Afternoon Sessions:** Practical demonstrations and hands-on workshops in the laboratory.
- **Evening Sessions:** Guest lectures by industry experts, case studies, and group discussions on entrepreneurship and career opportunities in mushroom cultivation.

Practical Workshops and Hands-On Sessions

- **Activities Conducted:**
    - Step-by-step demonstrations of substrate preparation, spawn production, and mushroom cultivation techniques.
    - Group exercises in mushroom harvesting, post-harvest processing, and value-added product formulation.
    - Field visits to mushroom farms, processing units, and research institutions.

5. Assessment and Evaluation

Methods Used for Evaluation

- **Continuous Assessment:** Quizzes, laboratory reports, and assignments to assess theoretical knowledge and practical skills.
- **Final Project:** Individual or group projects on mushroom cultivation, value-added product development, or market analysis.

- **Feedback Mechanism:** Regular feedback sessions to address student queries and improve teaching methodologies.

Student Feedback and Improvement

- **Feedback Analysis:** Positive responses regarding the relevance of course content, hands-on learning experiences, and industry insights.
- **Areas for Improvement:** Suggestions for additional practical sessions and deeper exploration of specific mushroom species and value-added product development.

6. Outcomes and Achievements

Knowledge Enhancement

- **Deepened Understanding:** Enhanced knowledge of mushroom biology, cultivation techniques, and value-added product development.
- **Theoretical Foundation:** Comprehensive understanding of scientific principles and practical application in mushroom cultivation.

Skill Development

- **Practical Skills:** Proficiency in substrate preparation, spawn production, mushroom cultivation methods, and value-added product formulation.
- **Critical Thinking:** Ability to analyze challenges in mushroom cultivation and propose innovative solutions.

Industry Readiness and Employability

- **Career Preparedness:** Readiness for careers in mushroom cultivation, biotechnology research, and agribusiness.
- **Employability Skills:** Acquired skills aligned with industry demands, enhancing job prospects in research institutes, biotech companies, and agricultural enterprises.

7. Conclusion

Summary of Course Success

The 30-day value-added course on Mushroom Cultivation at AKS University, Satna, successfully achieved its objectives of enhancing knowledge, developing practical skills, and preparing students for careers in mushroom cultivation and biotechnology. The structured modules, hands-on workshops, and industry insights provided a comprehensive learning experience that received positive feedback from students and faculty alike.

Future Recommendations

- **Expansion of Practical Sessions:** Incorporate advanced techniques in mushroom cultivation, such as controlled environment agriculture and mycorrhizal symbiosis.
- **Research Initiatives:** Foster collaborations with agricultural research organizations and industry stakeholders to enhance research opportunities and technology transfer.
- **Continued Professional Development:** Offer follow-up workshops and seminars on emerging trends in mushroom cultivation and value-added product development.

In conclusion, the course not only enriched the academic experience of B.Sc. (Hons.) and B.Tech Biotech students but also contributed significantly to their professional development and preparedness for the dynamic field of mushroom cultivation and biotechnology. The feedback received will guide future iterations of the course to meet the evolving needs of the industry and academia in mushroom cultivation and biotechnological applications.

2. Genome Editing Workshop

Course details

Lecture 1: Introduction to Genome editing

- Genome editing-concept and history
- Types of genome editing- Insertion, deletion, inversion
- Cellular DNA repair mechanisms
    - Non-Homologues End Joining (NHEJ)
    - Homologues End Joining (HEJ)

Lecture 2: Genome editing tools

- Chemical or radiation mediated genome editing
- Engineered Nucleases
    - ZFNs
    - TALENs
- CRISPR/Cas9

Lecture 3: CRISPR/Cas9 based genome editing

- CRISPR- origin of concept
- History
- Mechanism
- Gene editing innovation

Lecture 4: Guide RNA designing

- Guide RNA- Concept, function, & importance
- Guide RNA designing tools
- Guide RNA designing guidelines

Lecture 5: CRISPR-based genome editing-experimental set up

- Vectors for CRISPR components
- Transfection into mammalian cells
- Reaction setup and workflow
- Confirmation of gene knockout
- Controls and troubleshooting

Lecture 6: Introduction to RNA Interference

- RNAi- history, concept and applications
- Knockout verses knockdown
- RNAi types
    - siRNA- concept and mechanism
    - miRNA- concept and mechanism

Lecture 7: siRNA mediated gene silencing

- siRNA designing rules
- siRNA designing and prediction tools
- siRNA reaction setup and experimental workflow
- Confirmation of gene silencing /knockdown
    - RTPCR
    - Western blotting
- Controls and troubleshooting

Lecture 8: miRNA mediated gene regulation

- Designing of miRNA
- miRNA repository (miRBase)
- miRNA target site prediction methods and tools
- miRNA reaction setup and experimental workflow
- Confirmation of gene knockdown
    - RTPCR
    - Western blotting
    - Northern blotting
- Controls and troubleshooting

1. **Cancer Tools & Techniques workshop**

Course details

Lecture 1: Cancer biomarkers

- Cancer- Epidemiology, diagnosis, treatment
- Biomarker- overview
- Early detection-importance
- Various diagnostics tools for cancer detection

Lecture 2: Tools and techniques for identification of biomarkers

- High throughput assays for biomarker identification
    - Next generation sequencing (NGS)
    - Mass spectrometry
    - 2D gel electrophoresis
    - Microarray

Lecture 3: Nucleic acid-based biomarker

- Nucleic acid biomarker- overview
- Nucleic acid biomarker-Types
- Importance and advantages
- Case studies (potential examples)

Lecture 4: Nucleic acid sequencing methods

- Introduction, and history
- Traditional methods and their concepts
- Advanced techniques
- NGS platforms and their comparisons

Lecture 5: RTPCR based gene expression analysis

- Introduction and importance
- RNA extraction and quantitation
- DNase treatment,
- Function and protocol
- CDNA synthesis concept and protocol
- CDNA reaction setup
- RTPCR introduction and advantages
- Concept and protocol

Lecture 6: Protein based biomarker

- Protein biomarker- overview
- Protein biomarker types
- Importance and advantages
- Case studies (potential examples)

Lecture 7: Immunoblotting based gene expression

- Blotting types
- Western blotting-overview, history and concept
- Detailed methodology with demonstration by video
    - Sample preparation
    - SDS-PAGE

    - Transfer and blocking
    - Blot development
    - Detection analysis
- Application and troubleshooting
- Modern method-Immunoblotting with SNAP i.d.

Lecture 8: Multiplexing platform for biomarker discovery

- Multiplexing- concept, importance and application
- Limitations of traditional ELISA
- Multiplexing systems
    - Luminex® 100/200™ System
    - MAGPIX® System
- SMCxPRO™- detect the undetectable

6. Immunobiology techniques Workshop

Course Details

Lecture 1: Introduction to antigen, antibody and epitope

- Concept of antigen and epitope
- Antibody structure
- Monoclonal verses polyclonal antibody
- Primary verses secondary antibody

Lecture 2: Introduction to Immunoassays

- Antigen antibody reaction
- Immunoassay- concept and overview
- Immunoassay-types and mechanism

Lecture 3: Immunoelectrophoresis

- Immune complex formation
- Precipitation reaction
- Precipitation curve
- Application of precipitation reaction
- Immunodiffusion
    - Radial immunodiffusion
    - Double immunodiffusion
- Immunoelectrophoresis
        - Rocket immunoelectrophoresis
        - Counter immunoelectrophoresis

Lecture 4: Immunoblotting traditional method

- Immunoblotting- Concept, history and overview
- Detailed methodology with demonstration by video
    - Sample preparation
    - SDS-PAGE
    - Transfer and blocking
    - Blot development
    - Detection analysis
- Application and troubleshooting

Lecture 5: Immunoblotting with SNAP i.d

- Limitations of traditional immunoblotting method
- Advantage of SNAP i.d.
- Mechanism
- Components of SNAP i.d.
- Experimental setup with demonstration by video
- Control and troubleshooting

Lecture 6: Radioimmunoassay (RIA)

- Principle of RIA
- Discovery and applications
- Ria-Types
- Experimental setup and workflow

- Limitations and advantages

Lecture 7: Enzyme-linked immunosorbent assay (ELISA)

- Antibody and Antigen
- Immunoassay
- Enzyme linked immunosorbent assay (ELISA)
- Types of ELISA
- Applications of ELISA
- Experimental setup and workflow
- Advanced Immunoassay

Lecture 8: Immunohistochemistry (IHC)

- Principle of IHC
- Immunoblotting verses IHC
- Experimental workflow with demonstration by video
    - Sample preparation
    - Antigen retrieval
    - Blocking
    - Stanning
    - Visualization
- Applications

7. Recombinant DNA technology workshop

Course details

Lecture 1: Introduction to Recombinant DNA technology

- Introduction to gene cloning
- Importance and application of gene cloning
- Case study-recombinant Insulin production

Lecture 2: Types of vectors

- Importance of vectors
- Essential components of vectors
- Types of vectors
    - Cloning vector-characteristics
    - Expression vector-characteristics
    - Shuttle vectors
- Selection of appropriate vector

Lecture 3: DNA manipulating enzymes

- DNA manipulation- overview
- Restriction endonucleases
    - Discovery
    - Characteristics
    - Mechanism
    - Types
    - Applications
    - RM system and its importance
- DNA Ligases
    - Discovery
    - Characteristics
    - Mechanism
    - Types
    - Applications

Lecture 4: Preparation of vector DNA

- Plasmid DNA isolation (manual and kit method)
- Quantitation and visualization
- Restriction digestion of vector DNA
- Purification of digested vector DNA (kit method)

Lecture 5: Preparation of Insert DNA

- Genomic DNA isolation (manual and kit method)
- Quantitation and visualization
- Primer designing for cloning
- PCR amplification of gene of interest (GOI)
- Restriction digestion of GOI
- Purification of GOI (kit methods)

Lecture 6: Ligation

- Ligation reaction-mechanism

- Ligation reaction components and reaction set up
- Vector to insert ratio calculation
- Controls and troubleshooting

Lecture 7: Transformation

- Transformation- introduction and types
- Chemical transformation
    - Mechanism
    - Reaction set up and workflow
    - Controls and troubleshooting
- Electroporation
    - Mechanism
    - Reaction set up and workflow
    - Controls and troubleshooting
- Detailed protocol
    - Competent cell preparation
    - Transformation- Chemical/electroporation
    - Recovery
    - Selection

Lecture 8: Selection of right clones

- Selection-why?
- Various selection methods
    - Blue white selection- concept and methodology
    - Restriction digestion-- concept and methodology
    - Colony PCR-- concept and methodology
    - Sequencing-- concept and methodology

Lecture 9: Overexpression and Production of recombinant proteins

- Different expression systems and their characteristics
    - Bacterial expression system
    - Yeast expression system
    - Mammalian expression system
    - Insect expression system
- Mechanism of overexpression
- pET system -overview, concept and mechanism
- Experimental workflow for production of recombinant proteins
- Controls and troubleshooting

Course Details

Lecture 1: Introduction to antigen, antibody and epitope

- Concept of antigen and epitope
- Antibody structure
- Monoclonal verses polyclonal antibody
- Primary verses secondary antibody

Lecture 2: Introduction to Immunoassays

- Antigen antibody reaction

- Immunoassay- concept and overview
- Immunoassay-types and mechanism

Lecture 3: Immunoelectrophoresis

- Immune complex formation
- Precipitation reaction
- Precipitation curve
- Application of precipitation reaction
- Immunodiffusion
    - Radial immunodiffusion
    - Double immunodiffusion
- Immunoelectrophoresis
        - Rocket immunoelectrophoresis
        - Counter immunoelectrophoresis

Lecture 4: Immunoblotting traditional method

- Immunoblotting- Concept, history and overview
- Detailed methodology with demonstration by video
    - Sample preparation
    - SDS-PAGE
    - Transfer and blocking
    - Blot development
    - Detection analysis
- Application and troubleshooting

Lecture 5: Immunoblotting with SNAP i.d

- Limitations of traditional immunoblotting method
- Advantage of SNAP i.d.
- Mechanism
- Components of SNAP i.d.
- Experimental setup with demonstration by video
- Control and troubleshooting

Lecture 6: Radioimmunoassay (RIA)

- Principle of RIA
- Discovery and applications
- Ria-Types
- Experimental setup and workflow
- Limitations and advantages

Lecture 7: Enzyme-linked immunosorbent assay (ELISA)

- Antibody and Antigen
- Immunoassay
- Enzyme linked immunosorbent assay (ELISA)
- Types of ELISA
- Applications of ELISA
- Experimental setup and workflow

- Advanced Immunoassay

Lecture 8: Immunohistochemistry (IHC)

- Principle of IHC
- Immunoblotting verses IHC
- Experimental workflow with demonstration by video
    - Sample preparation
    - Antigen retrieval
    - Blocking
    - Stanning
    - Visualization
- Applications

5. Plant Genetic Engineering workshop

Course Details

Lecture 1: Plant hormones: Biosynthesis and Function

- Functions of plant hormones
- Auxin: The growth hormone
- Cytokinin: Regulators of Cell division and its role in plant development
- Gibberelins: Regulators of plant height
- Ethylne: The Gaseous hormone and its uses

Lecture 2: Plant tissue culture-overview, requirements and detailed workflow

- Plant tissue culture-overview
- Basic structure and growth of plant
- Conventional plant breeding and plant tissue culture
- Plant tissue culture requirements
    - Media
    - Physical conditions
- Types of plant tissue culture
    - Callus culture
    - Cell culture
- Applications of plant tissue culture

Lecture 3: Transgenic plants-overview and importance

- Introduction to Transgenic plants
- Gene constructs
- Vectors for the production of transgenic plants
- Transformation techniques
- Integration and Inheritance of transgenes
- Screening and selection of transformants
- Transgene stability
- Generation and maintenance of transgenic plants
- Future of transgenic plants

Lecture 4: Trait Improvement of plants

- Transgenics to drought tolerance, salt tolerance and freeze tolerance
- Insect resistance with cry proteins and non Bt proteins
- Improving the nutritional quality and functional properties of seed proteins carotenoids and flavonoids
- Improvement of shelf life of fruits and flowers
- Herbicide resistance in plants
- Improving plant photosynthesis and growth
- Nitrogen fixing genes and nod genes- structure, function and role in nodulation
- Hydrogen metabolism and genetic engineering of hydrogenase genes
- Development of transgenics for phytoremediation

Lecture 5: Plant Genome Analysis:

Importance of mapping-genetical and physical maps

- Breeding requirements for maps
- Molecular markers
    - Isozymes
    - RFLP
    - RAPD
    - SSR
    - ISSR
    - AFLP
    - SNP
- Marker assisted breeding for crop improvement
- T-DNA and transposon tagging
- TILLING in Plants

Lecture 6: Sensory photobiology and advances

- Structure, function and mechanisms of action of
    - Phytochromes
    - Cryptochromes
    - Phototropins
- Stomatal movement
- Photoperiodism
- Biological clocks

Lecture 7: Plant Genes and Gene silencing

- Plant nuclear genes
- Plastid genes and mitochondrial genes
- preparation of plant cDNA and genomic libraries in vector systems
- RNA silencing
- miRNA-concept and overview
- siRNA-concept and overview
- RNA silencing for plant functional genomics
- *In silico* analysis and assignment of gene function

Chapter 8: Plant metabolic engineering- overview and importance

- Introduction on plant metabolic engineering
- Biosynthesis metabolic pathway
- Mechanisms of gene expression regulation
- Tissue culture for Metabolic engineering
- Bioconversion

- hairy root culture
- cell suspension culture
- Changing the nutritional profile of plants
- Molecular (Protein) farming
- Biopolymer
- Bioenergy from plant

3. **Mammalian Cell Culture workshop**

Course Details

Lecture 1: Introduction to animal cell culture

- Mammalian cell culture- overview and importance
- Cell culture environment & Aseptic conditions
- Cell culture growth medium and components
- Cell culture laboratory and equipment

Lecture 2: Animal cell culture: cell revival

- Cell culture revival methods
- Best practises for reviving cell
- Important considerations
- Detailed methodology with demonstration by video

Lecture 3: Animal cell culture: cell propagation

- Animal cell growth and growth curve
- Trypsinization and cell passaging- overview and concept
- Detailed protocol with demonstration by video

Lecture 4: Animal cell culture: cell freezing

- Animal cell storage requirements
- Cell freezing- overview and concept
- Cell freezing medium and components
- Cell freezing protocol with demonstration by video

Lecture 5: Cell counting

- Cell counting-concept and importance
- Cell counting methods
- Haemocytometer- manual method
    - Principle
    - Methodology with demonstration by video
    - Advantages & disadvantages
- Cell Sceptre- automated cell counter
    - Principle
    - Methodology with demonstration by video
    - Advantages & disadvantages

Lecture 6: Transfection

- Transfection-Concept and overview
- Nucleic acid transfection methods
- Nonrival methods
    - Types
    - Principle
    - Advantages & disadvantages
- Viral methods
    - Types
    - Principle
    - Advantages & disadvantages

Lecture 7: Contaminations in cell culture

- Challenges in animal culture
- Type of contaminations
- Contamination detection methods
- How to avoid contaminations

Lecture 8: 3D cell culture

- 3D cell culture: Overview, and importance
- Types of 3D culture
    - Organoid 3D culture
    - Spheroid 3D culture
- Methodology with demonstration by video
- Advantages and applications

AKS University
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Department of Environmental Science

Value Added Course

Environmental Quality and Management

Value added course

Course details

Course name: Environmental Quality and Management

Contact Hours: 30

Duration:

Students Strength: 20

Importance of course:

- Comprehensive Understanding of Environmental Issues
- Skill Development for Environmental Monitoring and Assessment
- Knowledge of Legal and Regulatory Frameworks
- Development of Management Strategies
- Preparation for Professional Careers

Course Objective:

1. Understand the fundamental concepts of environmental quality and management.
2. Analyze the impact of human activities on environmental quality.
3. Assess and monitor environmental quality using various tools and techniques.
4. Understand the legal and regulatory frameworks governing environmental quality.
5. Develop and implement strategies for managing and improving environmental quality.

Course description: This course explores the principles and practices of environmental quality management. It covers the assessment, monitoring, and improvement of environmental quality in various contexts, including air, water, soil, and ecosystems. The course also addresses the regulatory framework and management strategies used to protect and enhance environmental quality.

Scope of this course: The Environmental Quality and Management course is a comprehensive academic program designed to provide students with a deep understanding of the principles and practices involved in assessing, managing, and improving environmental quality. This course is typically part of a curriculum for students pursuing degrees in environmental science, environmental engineering, public health, or related fields.

Course outcomes: By the end of the course, students should be able to:

- Assess and monitor environmental quality using various tools and techniques.
- Understand and apply environmental regulations and standards.
- Develop and implement effective environmental management strategies.
- Conduct environmental impact assessments.

- Promote sustainable practices in various sectors.

Employability: The employability of Environmental Quality and Management course is generally high, given the growing importance of environmental issues globally. This course equips students with diverse skills and knowledge that are applicable across various industries and sectors.

Entrepreneurship: Entrepreneurship opportunities for the students of an Environmental Quality and Management course are diverse and growing, driven by the increasing global focus on sustainability and environmental protection.

Course contents:

Unit – 1 Definition and importance of environmental quality Components of environmental quality: air, water, soil, and ecosystems. Historical perspectives on environmental quality and management

Unit – 2 Air pollutants and their sources, Monitoring and measuring air quality, Health and environmental impacts of air pollution, Air quality standards and regulations, Strategies for air pollution control and management.

Unit – 3 Water pollutants and their sources, Monitoring and measuring water quality, Health and environmental impacts of water pollution, Water quality standards and regulations Strategies for water pollution control and management.

Unit - 4 Types of waste: municipal, industrial, hazardous, Waste generation and characterization, Waste management practices: reduction, recycling, treatment, disposal. Regulatory framework for waste management, Sustainable waste management strategies.

Unit – 5 Introduction to EMS (e.g., ISO 14001), Developing and implementing an EMS, Auditing and continuous improvement, Case studies of EMS in various industries.

Case Studies and Project Presentations

- Review and analysis of real-world environmental management case studies.
- Student project presentations on selected environmental quality management topics.

Award of certificate:

The students will be evaluated through attendance, assignments, quizzes and a final test. The student must secure a minimum of 60% of the total marks to get the course completion certificate.

Course coordinator:

Mentors:

AKS University
SATNA

Sherganj Panna Road, Satna (M.P.)
www.aksuniversity.com

Department of Environmental Science

Value Added Course

Environmental Auditing

Value added course

Course details

Course name: Environmental Auditing

Contact Hours: 20 hours

Duration:

Students Strength:

Course Objective:

1. To provide students with a comprehensive understanding of environmental auditing principles and practices.
2. To develop skills for conducting environmental audits in various organizational settings.
3. To understand the regulatory framework and standards related to environmental auditing.
4. To enhance awareness of environmental management systems and sustainability practices.

Course description: The Environmental Auditing course offers a comprehensive exploration of the principles, methodologies, and applications of environmental auditing in various organizational settings. This course is designed to equip students with the necessary knowledge and skills to effectively conduct environmental audits, ensuring compliance with environmental regulations and promoting sustainable practices.

Scope of this course: The scope of an Environmental Auditing course encompasses several key areas to ensure comprehensive knowledge and practical skills for students and professionals interested in environmental management and sustainability.

Course outcomes: Upon successful completion of the Environmental Auditing course, students will be able to:

1. Understand Environmental Auditing Principles
2. Navigate Legal and Regulatory Frameworks
3. Implement Environmental Management Systems (EMS)
4. Plan and Prepare for Environmental Audits
5. Conduct Effective Environmental Audits
6. Analyze Data and Report Findings

Employability:

Entrepreneurship:

Main objectives for students:

Course contents:

Unit - 1 Definition and Scope of Environmental Auditing, Importance and Benefits of Environmental Auditing, Historical Development and Evolution, Types of Environmental Audits: Compliance, Functional, and Management Audits.

Unit - 2 Overview of Environmental Laws and Regulations, International Environmental Standards (ISO 14001, EMAS), National and Local Environmental Legislation, Role of Regulatory Agencies.

Unit - 3 Introduction to Environmental Management Systems, Structure and Components of EMS, Implementation and Certification of EMS, Continuous Improvement in EMS.

Unit - 4 Planning the Audit: Objectives, Scope, and Criteria, Developing Audit Protocols and Checklists, Pre-Audit Documentation Review, Roles and Responsibilities of the Audit Team

Unit - 5 Site Visit and Inspection Techniques, Data Collection and Analysis, Interviews and Communication Skills, Identifying Non-Conformances and Environmental Impacts.

Award of certificate:

The students will be evaluated through attendance, assignments, quizzes and a final test. The student must secure a minimum of 60% of the total marks to get the course completion certificate.

Course coordinator:

Mentors:

AKS University
SATNA

Sherganj Panna Road, Satna (M.P.)
www.aksuniversity.com

Department of Agriculture Extension

Value Added Course

Agriculture Journalism

Agricultural Journalism

Course Name : Agriculture Journalism

Course Code :

Contact Hours : 6 weeks 30 Hours (30 Hours Teaching + Practical)

Duration : 12th October, 2023 to 21st November, 2023

Students Strength : 150

IMPORTANCE OF THE COURSE

Journalism is that part of social activity, which is concerned, with the dissemination of news and views about the society. Modern journalism feeds five departments of mass communication. (1) Newspaper and periodicals, (2) Radio, (3) Television, (4) Films and (5) Advertising.

Journalism is the systematic and reliable dissemination of public information, public opinion and public entertainment by modern mass media of communication.

In modern societies, journalism has become the media of mass education providing supplementary education to students at all stages and to the general masses - educated and uneducated.

All activities concerned with the communication of mass media is not journalism but the part of that activity involving writing, preparation and production of the communication messages is journalism. Thus, essentially journalists are writers, authAgricultural journalism serves as a platform to inform and educate farmers, policymakers, and the general public about the latest developments in the agricultural sector. It helps in creating awareness among the people about the latest farming techniques, crop patterns, soil health, and the impact of climate change on agriculture.

OBJECTIVES OF THE COURSE

1. Journalism is that part of social activity, which is concerned, with the dissemination of news and views about the society.
2. Journalism is the systematic and reliable dissemination of public information, public opinion and public entertainment by modern mass media of communication. Students will able to understand agricultural journalism.

3. Students will understand newspapers and magazines as communication media. Students will able to understand writing the story: organizing the material, treatment of the story.

SCOPE OF THE COURSE

The farmers are information hungry and present public extension system is not able to meet the demand of the farmers for information. The farmer and extension worker ratio is widening. On the other side, communication tools development is enormous. Private extension is also coming into picture. Today, journalism in India has got lot of scope with media barons opening new channels or newspapers or publishing houses on a regular basis. The competition is so rife that each channel or newspaper tires to produce something exclusive, which in turn has given the audience a great deal of variety.

COURSE OUTCOMES

At the end of the course, the candidates will be able to

1. Journalism is that part of social activity, which is concerned, with the dissemination of news and views about the society.
2. Journalism is the systematic and reliable dissemination of public information, public opinion and public entertainment by modern mass media of communication. Students will able to understand agricultural journalism.
3. Students will understand newspapers and magazines as communication media. Students will able to understand writing the story: organizing the material, treatment of the story.

Skills to be provided

1. Initiativeness- refers to ability to turn ideas into action. It includes creativity, innovation and risk-taking as well as ability to plan and manage action in order to achieve objectives.

2. Activism- is policy or action of using vigorous campaigning to bring about political or social change. It is character to collect the information on current events

3. Persistence- is firmness or determined character shown by person in a course of action in spite of difficulty or opposition. This is the quality, which enables the person to develop determination to have a thorough job done at any cost in terms of personal sacrifice

4. Work excellence- is concern for high quality work. It is the quality of being outstanding or extremely good on work. It is degree to act to do things that meet or beat existing standards for quality.

5. Commitment to work contract- The commitment to work contract is the state or quality of being dedicated to a cause, activity shown by an individual. The person does every sacrifice to get the task completed and also makes personal sacrifice or expands extraordinary efforts to complete a job.

6. Efficiency orientation- The determination to maintain the state or quality of being efficient is known as efficiency orientation. It makes person firm effort maker to get the task done within minimum costs and time.

7. Tackleness- It is ability to find out ways and means to tide over the difficult times. Realizing the need and to understand role of problem solving in developing journalism skill, information was collected and presented.

8. Persuasion- It is the ability to successfully convince others to do what he or she actually wants from his subordinates. Realizing the need and to understand role of persuasion in developing agricultural journalism skill.

9. Self-confidence- It is a feeling of trust on own abilities, qualities and judgment. It is a strong faith or self-belief in oneself and the ability to complete a difficult task with challenge.

10. Collaboration skill- It is a feeling of trust on own abilities, qualities and judgment. It is a strong faith or self-belief in oneself and the ability to complete a difficult task with challenge.

11. Interpersonal skills- It is the ability to interact with people through effective listening, speaking, behaving and following through productive communication ability. It is important for students and journalists because it helps them connect with people and develops the other people friendly personality development.

12. Time management behaviour- It is the ability to use one's time effectively or productively, especially at work. Proper time management is the key to success for students. Those who stick to daily schedule can achieve goals in stipulated or short time.

EMPLOYMENT OPPORTUNITIES

The candidates will become self-reliable and employable and also being equipped with additional skills to meet the challenges in future.

Mushroom Cultivation Techniques

Unit-1 Agricultural Journalism: The nature and scope of agricultural journalism characteristics and training of the agricultural journalist, how agricultural journalism is similar to and different from other types of journalism.

Unit-2 Newspapers and magazines as communication media: Characteristics; kinds and Functions of newspapers and magazines, characteristics of newspaper and magazine readers. Form and content of newspapers and magazines.

Course Plan

Sr. No.	Topic	Hours
1.	The nature and scope of agricultural journalism characteristics	4
2.	Training of the agricultural journalist	4
3.	How agricultural journalism is similar to and different from other types of journalism	4
4.	Characteristics of Newspapers and magazines as communication media	2
5.	Kinds of Newspapers and magazines as communication media	4
6.	Functions of newspapers and magazines	4
7.	Characteristics of newspaper and magazine readers	4
8.	Form and content of newspapers and magazines	4

Course Coordinator: Mr. Anoop Shukla

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Department of Soil Science

Value Added Course

Agriculture Waste Managment

Agricultural Waste Management

Course Details

Course Name: Agricultural Waste Management
Course Code:
Contact Hours : 6 weeks 30 Hours (30 Hours Teaching + Practial)
Duration : 12th october, 2020 to 21st november, 2020
Students Strength: 150

Importance of Course

Improper disposal of waste can cause an environmental impact as well as affect humans and animals alike. There is a need to manage waste disposal as seemingly harmless things can get harmful if not disposed of responsibly. For instance, it can give rise to the problem of landfills and the emission of toxic gases from that area. Moreover, if pesticides and insecticides end up in rivers instead of fields then they can kill aquatic life. Though, they can also pollute drinking water, and kill animals who will drink from it. So animal agriculture, crop production, animal production and the use of pesticides all result in environmental damage if you do not manage the waste. The world is shifting towards reducing the emissions of greenhouse gas. Animal production releases about 65 percent of nitrous oxide and 37 percent of methane. These are harmful greenhouse gases. It is a cycle. The burning of agricultural solid waste produces in a waste incinerator harmful emissions that result in climate change. Climate change decreases food production. Therefore, there are implications regarding food production, health and environmental concerns. All of which are relevant to life on planet Earth. Health and Environmental Concerns The agricultural wastage ends up being dumped in landfills. Eventually, it burns and emits a high amount of gases that pollute the environment and contribute to climate change. Moreover, these emissions also harm human health. What's surprising is that this waste can be easily recycled and it is also beneficial for soil fertility because of its high nutrient content. Therefore, recycling can contribute towards sustainable agricultural production. There is another important environmental concern due to the accumulation of wastage. Floods! Solid wastes from agriculture, livestock and farming block waterwaysnFarmers may carelessly dump solid wastes in waterways but blockage gives rise to floods. Municipal solid waste and

sewage sludge is hazardous waste that harms public health but also puts everyone in danger. Consequently, there is huge damage to lives and properties.

Course Objective:

The Agricultural Waste Management course at Cavite State University provides students with a comprehensive understanding of the management and disposal of agricultural waste. Students will learn about the environmental impact of agricultural waste and the various techniques and technologies used to manage it effectively.

Course Description:

The Student learn about the various type of organic manure present and can be prepared by the farmers under organic farming. Available forms of plant essential nutrients present in the manure/ compost there by absorbed by the crop and increase the productivity. Importance, principle and role organic farming for maintaining fertility and sustainability in soil.

Scope of this Course:

A. Waste Reduction and Reuse: Promoting efficient agricultural practices like precision farming and integrated pest management can reduce waste generation. Reusing waste materials as inputs for energy production, composting, or livestock feed can create circular economies.

B. Biogas and Bioenergy Production: Anaerobic digestion of agricultural waste, especially livestock waste and crop residues, can produce biogas, a renewable energy source. Biogas can replace fossil fuels, reduce greenhouse gas emissions, and provide decentralized energy solutions.

C. Composting and Organic Fertilizers: Transforming agricultural waste into compost enriches soil fertility and structure, reducing the need for synthetic fertilizers. Organic fertilizers also improve water-holding capacity, promote biodiversity, and mitigate climate change.

D. Recycling and Waste Treatment: Implementing proper recycling and treatment methods for agrochemical waste, such as container recycling programs and hazardous waste disposal, ensures minimal environmental impact.

E. Public Awareness and Education: Raising awareness among farmers, policymakers, and the general public about the impacts of agricultural waste and the benefits of sustainable management is crucial for long-term change. Educational programs can promote best practices, technological advancements, and policy initiatives.

Course Outcomes:

After the completion of this course the student will be able to understand the following points:

- This subject will give general introduction on Organic farming and practices involved in making organic field through organic fertilizers, its classification, use and importance.
- To know about the role and importance of INM, FCO, fertilizer storage orders in packaging and marketing of organic manures.
- To learn the basic techniques used in dealing with farmers and motivate them to convert their land to organic farming.

Main Objectives for Students:

The student learns about the various type of organic manure present and can be prepared by the farmers under organic farming. Available forms of plant essential nutrients present in the manure/ compost there by absorbed by the crop and increase the productivity. Importance, principle and role organic farming for maintaining fertility and sustainability in soil.

Course Contents:

Unit1. Recent techniques involved /evolved in preparing the different types of compost from agricultural waste.

Unit 2. Techniques used in managing the Farm waste through NADEP method of compost , its importance, properties and precautions measured .

Unit 3. Strategies involved in preparing Bangalore method of Compost from Agricultural waste

Unit 4. Strategies involved in managing agricultural waste, green manuring functions

Unit 5. Process involved in preparation the vermicompost with its importance, dose of application in different crops and precaution measure

Unit 6. Preparation of Indore method of compost , its importance , advantages and precaution measures

Unit 7. Utilization of farm waste (straw and husk) from rice and wheat production.

Unit 8. Preparation of biogas plant and its importance use and nutrient content in it

Unit 9. Preparation of compost through Horticultural waste and its importance, nutrient content and application dose in various crop

Unit 10. Analysis of domestic (biodegradable) waste by using of waste decomposer

Course Plan

Sr. No.	Topic	Hours
1.	Recent techniques involved /evolved in preparing the different types of compost from agricultural waste.	3
2.	Techniques used in managing the Farm waste through NADEP method of compost, its importance, properties and precautions measured	4
3.	Strategies involved in preparing Bangalore method of Compost from Agricultural waste	2
4.	Strategies involved in managing agricultural waste, green manuring functions	2
5.	Process involved in preparation the vermicompost with its importance, dose of application in different crops and precaution measure	4
6.	Preparation of Indore method of compost, its importance , advantages and precaution measures	4
7.	Utilization of farm waste (straw and husk) from rice and wheat production.	3

8.	Preparation of biogas plant and its importance use and nutrient content in it	3
9.	Preparation of compost through Horticultural waste and its importance, nutrient content and application dose in various crop	3
10.	Analysis of domestic (biodegradable) waste by using of waste decomposer	2

Award of Certificate

The student will be evaluated through attendance, assignments, quizzes and a final test. The student must secure a minimum of 60% of the total marks to get the course completion certificate**.**

Course Coordinator: Dr Sugyata Shivhare

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Department of Plant Pathology

Value Added Course

Post Harvest Technology of Mushroom & Mushroom Farm Management

Post harvest technology of Mushroom and Mushroom farm management

Course Name : Post harvest technology of Mushroom and Mushroom farm management

Course Code :

Contact Hours : 6 weeks 30 Hours (30 Hours Teaching + Practical)

Duration : 12th August, 2022 to 21st September, 2022

Students Strength : 150

IMPORTANCE OF THE COURSE

The fundamental idea behind the course is to embark on the importance of self-employment and to develop confidence and personal skills so that candidates can uptake small business by setting up a mushroom farm. Mushrooms are found in nature in many places on dry leaves, logs, straw etc. There are about 30000 varieties of mushrooms in nature. Among them about 2000 are edible. Scientists have identified methods of cultivation for 10 varieties. Because of its nutritional aspects and export potential, mushroom cultivation is becoming popular. Moreover, in the present scenario where seasonal unemployment is hampering the growth of population mushroom cultivation provides opportunity for a year long business with very less capital investment. Mushroom cultivation has been recognized under Modular Employable Skills (MES), Ministry of Skill Development and Entrepreneurship, Government of India.

OBJECTIVES OF THE COURSE

The course would play a significant role in generating self employment opportunities and help to reduce vulnerability to poverty and strengthen livelihoods. The course would provide a reliable source of income as it requires very less capital investment and does not require access to large agriculture land. It is an eco-friendly agricultural practice helping in the efficient utilization of agricultural and industrial waste.

COURSE OUTCOMES

At the end of the course, the candidates will be able to

1. Learn details about important types of Mushroom and their cultivation

2. Learn low cost production and marketing of mushrooms.

3. Take up Mushroom Cultivation and run it profitably

4. Maintain Mushroom farm in a hygienic and scientific way

5. Work out the economics of Mushroom Cultivation

6. Provide means of self employment and income generation

7. Take up value added products of Mushroom i.e. preparation of Mushroom Pickle, Powder, Papad and different items of Food

Skills to be provided

1. To prepare the pure culture stains.

2. To prepare the mother spawn.

3. Skill in handling equipment

4. Skills on maintaining different types of mushroom crops.

5. Skills in mushroom processing.

6. Skill in setting up a mushroom cultivation lab

EMPLOYMENT OPPORTUNITIES

The candidates will become self-reliable and employable and also being equipped with additional skills to meet the challenges in future.

Harvest and post-harvest technology and Mushroom farm management

UNIT I

Harvesting and Post harvesting technology: harvesting techniques, storing methods, Preservation of mushrooms - freezing, dry freezing, drying, canning, quality assurance and entrepreneurship. Value added products of mushrooms.

UNIT II

Acquaintance with infrastructure, Structure and construction mushroom farm, equipments and machineries required in the mushroom cultivation process

UNIT III

Maintenance of Mushroom lab: Housing requirements: Growing room, maintenance of optical environmental conditions, Sterilization, Sanitation & food safety in mushroom farm, construction of proper housing, economic consideration and cost.

UNIT IV

Marketing: Marketing definition and concept, Marketing planning / strategy, Product implementation, Marketing segmentation major variables, Marketing research (SWOT), Marketing mix, Product life cycle.

UNIT V

Centers of mushroom cultivation in India, Integration of solar energy in mushroom cultivation system, poisonous mushrooms, Mushroom cultivation for differentially able people

Course Plan

Sr. No.	Topic	Hours
1.	harvesting techniques, storing methods,	3
2.	Preservation of mushrooms - freezing, dry freezing, drying, canning, quality assurance and entrepreneurship.	3
3.	Value added products of mushrooms.	1
4.	Acquaintance with infrastructure, Structure and construction mushroom farm.	2
5.	Equipments and machineries required in the mushroom cultivation process	2
6.	Maintenance of Mushroom lab: Housing requirements: Growing room, maintenance of optical environmental conditions	3
7.	Sterilization, Sanitation & food safety in mushroom farm.	3
8.	construction of proper housing, economic consideration and cost.	3
9.	Marketing definition and concept, Marketing planning / strategy, Product implementation	3

10.	Marketing segmentation major variables, Marketing research (SWOT), Marketing mix, Product life cycle.	3
11.	Centers of mushroom cultivation in India.	1
12.	Integration of solar energy in mushroom cultivation system	1
13.	Poisonous mushrooms, Mushroom cultivation for differentially able people.	2

Award of Certificate

The student will be evaluated through attendance, assignments, quizzes and a final test. The student must secure a minimum of 60% of the total marks to get the course completion certificate**.**

Course Co-ordinator- Dr. Doomer Singh

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Department of Plant Pathology

Value Added Course

Mushroom Cultivation Technology

Mushroom Cultivation Techniques

Course Name : Mushroom Cultivation Techniques

Course Code :

Contact Hours : 6 weeks 30 Hours (30 Hours Teaching + Practical)

Duration : 12th August, 2023 to 21st September, 2023

Students Strength : 150

IMPORTANCE OF THE COURSE

The fundamental idea behind the course is to embark on the importance of self-employment and to develop confidence and personal skills so that candidates can uptake small business by setting up a mushroom farm. Mushrooms are found in nature in many places on dry leaves, logs, straw etc. There are about 30000 varieties of mushrooms in nature. Among them about 2000 are edible. Scientists have identified methods of cultivation for 10 varieties. Because of its nutritional aspects and export potential, mushroom cultivation is becoming popular. Moreover, in the present scenario where seasonal unemployment is hampering the growth of population mushroom cultivation provides opportunity for a year long business with very less capital investment. Mushroom cultivation has been recognized under Modular Employable Skills (MES), Ministry of Skill Development and Entrepreneurship, Government of India.

OBJECTIVES OF THE COURSE

The course would play a significant role in generating self employment opportunities and help to reduce vulnerability to poverty and strengthen livelihoods. The course would provide a reliable source of income as it requires very less capital investment and does not require access to large agriculture land. It is an eco-friendly agricultural practice helping in the efficient utilization of agricultural and industrial waste.

COURSE OUTCOMES

At the end of the course, the candidates will be able to

1. Learn details about important types of Mushroom and their cultivation

2. Learn low cost production and marketing of mushrooms.

3. Take up Mushroom Cultivation and run it profitably

4. Maintain Mushroom farm in a hygienic and scientific way

5. Work out the economics of Mushroom Cultivation

6. Provide means of self employment and income generation

7. Take up value added products of Mushroom i.e. preparation of Mushroom Pickle, Powder, Papad and different items of Food

Skills to be provided

1. To prepare the pure culture stains.

2. To prepare the mother spawn.

3. Skill in handling equipment

4. Skills on maintaining different types of mushroom crops.

5. Skills in mushroom processing.

6. Skill in setting up a mushroom cultivation lab

EMPLOYMENT OPPORTUNITIES

The candidates will become self-reliable and employable and also being equipped with additional skills to meet the challenges in future.

Mushroom Cultivation Techniques

UNIT I

Introduction to mushrooms and mushroom cultivation. History and Scope of mushroom cultivation. Mushroom biology including Taxonomical rank, life cycle Vegetative characters; Edible and Poisonous mushrooms

UNIT II

Planting material: Spawn culturing: techniques, media preparation, sterilization, equipments used, Laminar flow chamber, autoclave etc. Preparation of spawn, Pure culture, Mother spawn, Spawn production

UNIT III

Cultivation technique of Common edible mushrooms :Button mushroom (Agaricus bisporus), Milky mushroom (Calocybe indica), Oyster mushroom (Pleurotus sajorcaju) and paddy straw mushroom (Volvariella volvcea).

UNIT IV

Problems in mushroom cultivation - diseases, pests and nematodes, weed moulds and their management strategies.

UNIT V

Importance of mushrooms: Nutritional value of mushrooms and the mushroom recipes, Medicinal mushrooms and their use in industries Therapeutic aspects- antitumor effect

Course Plan

Sr. No.	Topic	Hours
1.	Introduction to mushrooms and mushroom cultivation. History and Scope of mushroom cultivation.	3
2.	Mushroom biology including Taxonomical rank, life cycle Vegetative characters	3
3.	Edible and Poisonous mushrooms	1
4.	Spawn culturing: techniques, media preparation, sterilization, equipments used, Laminar flow chamber, autoclave etc	4
5.	Preparation of spawn, Pure culture, Mother spawn, Spawn production	2

6.	Cultivation technique of Common edible mushrooms: Button mushroom (Agaricus bisporus), Milky mushroom (Calocybe indica), Oyster mushroom (Pleurotus sajorcaju) and paddy straw mushroom (Volvariella volvcea).	4
7.	Cultivation technique of Common edible mushrooms: Oyster mushroom (Pleurotus sajorcaju) and paddy straw mushroom (Volvariella volvcea).	4
8.	Problems in mushroom cultivation - diseases, pests and nematodes, weed moulds and their management strategies.	4
9.	Importance of mushrooms: Nutritional value of mushrooms and the mushroom recipes.	2
10.	Medicinal mushrooms and their use in industries.	2
11.	Therapeutic aspects- antitumor effect	1

Award of Certificate

The student will be evaluated through attendance, assignments, quizzes and a final test. The student must secure a minimum of 60% of the total marks to get the course completion certificate**.**

Course Co-ordinator- Dr. Doomer Singh

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Department of Horticulture

Value Added Course

Post Harvest Management & Value Addition of Fruits & Vegetables

Course Details

Course Name: Post Harvest Management and Value Addition of Fruit and Vegetable
Course Code:
Contact Hours: 6 weeks 30 Hours (30 Hours Teaching + Practical)
Duration: 12th October, 2019 to 21st November, 2019
Students Strength: 150

Course Objective:

1.To study about the role and importance of post-harvest technology in Indian industry.

2. To study about the various management technologies on pre- harvest and post-harvest of fruits and vegetables.

3. To study about the conventional and modern packaging and storage methods.

4. To study about processed and fermented products of fruit and vegetables

Course Description:

This course examines of post-harvest management of fruit and vegetable. Aware to new management technology of PHM and process of Fruit and vegetable and increase farmers income

Scope of this Course:

post-harvest management is that it has the capability to meet food requirements of a growing population by eliminating losses, making more nutritive food items from raw commodities, i.e., fruits and vegetables, and by proper processing and fortification**.**

Course Outcomes:

After the completion of this course the student will be able to understand the following points:

1. To make the students aware of the new innovative technologies of processing, harvesting, drying and canning.

2. Prolong the post-harvest storage life of horticultural commodities and increase income through value addition of the products and to reduce post-harvest losses.

3. To understand the various packaging and storage methods for preservation of fruits and vegetables after post-harvest.

4. To learn the making various processed and fermented products Skills:

Employability:

Students can use this course as including it in their profile to apply for various job opportunities as Research Assistant, PhD Scholar, and Assistant Professor**.**

Entrepreneurship:

With the knowledge the student has gained from this subject, he can open his own fruit and vegetable processing company or work in a processing company.

Main Objectives for Students:

1. To make the students aware of the new innovative technologies of processing, harvesting, drying and canning.

2. Prolong the post-harvest storage life of horticultural commodities and increase income through value addition of the products and to reduce post-harvest losses

Course Contents:

Unit-1 Importance of post-harvest processing of fruits and vegetables, extent and possible causes of post-harvest losses.

Unit-2 Pre-harvest factors affecting postharvest quality, maturity, ripening and changes occurring during ripening; Respiration and factors affecting respiration rate.

Unit-3 Harvesting and field handling; Storage (ZECC, cold storage, CA, MA, and hypobaric); Value addition concept.

Unit-4 Principles and methods of preservation; Intermediate moisture food- Jam, jelly, marmalade,

preserve, candy – Concepts and Standards; Fermented and non-fermented beverages.

Unit-5 Tomato products- Concepts and Standards; Drying/ Dehydration of fruits and vegetables – Concept and methods, osmotic drying. Canning -– Concepts and Standards, packaging of products.

Course Plan

Sr. No.	Topic	Hours
1.	Importance of post-harvest processing of fruits and vegetables	2
2.	extent and possible causes of post-harvest losses.	2
3.	Pre-harvest factors affecting postharvest quality, maturity, ripening	4
4.	changes occurring during ripening; Respiration and factors affecting respiration rate.	4
5.	Harvesting and field handling; Storage (ZECC, cold storage, CA, MA, and hypobaric); Value addition concept.	4
6.	Principles and methods of preservation; Intermediate moisture food- Jam, jelly, marmalade, preserve, candy – Concepts and Standards; Fermented and non-fermented beverages.	4
7.	Tomato products- Concepts and Standards	2
8.	Drying/ Dehydration of fruits and vegetables – Concept and methods, osmotic drying	4
9.	Canning -– Concepts and Standards.	2
10.	Packaging of products.	2

Award of Certificate

The student will be evaluated through attendance, assignments, quizzes and a final test. The student must secure a minimum of 60% of the total marks to get the course completion certificate**.**

Course Coordinator: Rafiya Ameen

AKS University

Department of Commerce

Short Term Certificate Courses

Syllabus

Value added Course Mutual Fund Investments

Course Objective: To equip participants with comprehensive knowledge and practical skills in mutual fund investing, enabling them to make informed investment decisions, effectively manage risks, and optimize portfolio performance for long-term financial growth.

8-Day Workshop cum Training and Certificate Course on Mutual Fund Investing

Day 1: Introduction to Investing

1. **Why Investment is Important**
   - Importance of investment for financial growth and security
   - Compounding and its benefits
2. **Investment vs. Speculation**
   - Definition and differentiation
   - Risk profiles and time horizons
3. **Different Types of Investments**
   - Stocks, bonds, real estate, commodities, etc.
   - Comparative analysis of risk and return
4. **Introduction to Mutual Funds**
   - Definition and overview
   - Structure of mutual funds
   - How mutual funds work

Day 2: In-Depth Look at Mutual Funds

1. **Benefits of Investing in Mutual Funds**
   - Diversification, professional management, liquidity, etc.
2. **Risks of Investing in Mutual Funds**
   - Market risk, credit risk, interest rate risk, etc.
3. **Different Types of Mutual Funds**
   - Equity funds, debt funds, hybrid funds, index funds, etc.

Day 3: Mutual Fund Plans and Schemes

1. **Mutual Fund Terms**
   - NAV, AUM, Expense Ratio, etc.
2. **Direct Plan vs. Regular Plan**
   - Differences in cost, returns, and accessibility

3. **Investment Plans**
    - Systematic Investment Plan (SIP)
    - Systematic Transfer Plan (STP)
    - Systematic Withdrawal Plan (SWP)
4. **How to Filter a Mutual Fund Scheme**
    - Criteria and tools for selection
    - Performance metrics and benchmarks

Day 4: Investing Strategies

1. **Creating a Diversified Mutual Fund Portfolio**
    - Importance and benefits of diversification
    - Types of funds to include in a diversified portfolio
2. **Asset Allocation Across Different Fund Categories**
    - Principles of asset allocation
    - Examples and case studies
3. **Concept of SIP**
    - Benefits and strategies for SIP investments
4. **Rebalancing and Monitoring the Mutual Fund Portfolio**
    - Importance of regular review and rebalancing
    - Tools and techniques for monitoring

Day 5: Understanding Investment Risks

1. **Market Volatility**
    - Understanding market fluctuations
    - Strategies to cope with volatility
2. **Inflation Rate Risk**
    - Impact of inflation on investments
    - Mitigation strategies
3. **Currency Risk**
    - Risks associated with foreign investments
    - Hedging techniques
4. **Interest Rate Risk**
    - Impact on bonds and other fixed-income securities
    - Strategies to manage interest rate risk

Day 6: Getting Started with Mutual Funds

1. **How to Start Investing in Mutual Funds**
    - Steps to start investing
    - Platforms and resources for mutual fund investments
2. **Measuring Returns**
    - Simple returns
    - Annualized returns
    - Trailing returns
    - Rolling returns
    - SIP returns

Day 7: Advanced Investing Techniques

1. **Advanced Portfolio Management**
    - Strategies for advanced investors
    - Techniques for enhancing portfolio performance
2. **Tax Implications of Mutual Fund Investments**
    - Taxation on different types of funds
    - Tax-saving strategies
3. **Evaluating Fund Managers**

- Criteria for evaluating the performance of fund managers
- Importance of fund manager track record

Day 8: Practical Sessions and Certification

1. **Case Studies and Real-World Scenarios**
   - Analysis of historical data and fund performance
   - Discussion of successful investment strategies
2. **Interactive Q&A Session**
   - Addressing participant queries
   - Practical advice from experts
3. **Assessment and Certification**
   - Final assessment test
   - Issuance of certificates to successful participants

Workshop Schedule

Each day will include:

- **Lectures and Presentations:** 3 hours
- **Interactive Discussions and Q&A:** 1 hour

This extended 8-day syllabus is designed to provide comprehensive knowledge and practical skills in mutual fund investing, from foundational concepts to advanced strategies and risk management.

AKS University

Department of Commerce

Short Term Certificate Courses

Syllabus

Value added Course in Tally

Course Objective: To make graduates employable through development of technical skill in accounting.

Duration: 3-4 months (Total 45-60 hours of Class and Lab Practice)

Unit: I

Basics of Accounting:

Type of Accounts, Golden Rule of Accounting, Accounting Principles, Concepts & Principals, Double Entry System of Book Keeping, Mode of Accounting, Financial Statement, Transaction, Recording Transaction.

Fundamentals of Tally ERP 9

- Getting Functional with Tally ERP 9
- Creation/Setting up of Company in Tally ERP 9

Unit II:

Accounting Masters in Tally ERP 9

- Fl 1-Features
- F12 - Configuration
- Setting up Accounts Heads

Inventory in Tally ERP 9

Stock Group, Stock Categories, Do downs/Locations, Unit of Measure Stock Item

Unit III :

Voucher Entry in Tally

- Accounting Voucher Inventory Voucher Invoicing

Advance Accounting in Tally ERP 9

Bill wise Details, Cost Centre & Cost Categories, Multiple Currency, Bank Reconciliation, Interest Calculation, Budget & Controls Seenario Management.

Advance Inventory in Tally ERP 9

Order Processing, Reorder Levels, Tracking Numbers, Batch wise Details, Bill of Materials (Bom), Price levels & price List Stock Vallrtion, zero valued entries, different Actual & Billed Quantities.

Unit IV:

Technological Advantage of Tally ERP 9 :

Tally Vault, Securty Control, Tall Audit, Back up, Restore Split company Data, Export &Inport of Data. Printing of Reports & cheques.

Payroll Accounting & compliance pay Heads,

Employers Group, Employees configuring payroll in Tally ERP 9, Salary details, Unit, Attendances, Processing Payroll in Tally ERP 9, Accountting for Employer PF contribution. Est. Contribution. Payment of Professional Tax., Generating Reports.

Unit V :

Printing configuration

Select Printer Print Preue : Tax for Printof the Report Print

Taxation in Tally.

CST, VAT, TDS, TCS, Service Tax, Basic Concept, Configuring in Tally, Creating Masters, Entering Transition & Report pointing. GST- Concept, Activating Tally in GST, Setting up GST, Understanding SGST,CGST, IGST, Creating GST Master Purchase voucher with GST, Sales Voucher with GST, TDS - Concept, Creating TDS Masters, TDS Payment, Tax Reports & Tax form.

Finalization Entries & Finalization Process, Depractation Entries, Creating General Reserves, Provision for Taxation, Bad debit Reservers, Partnership firm, Tranforing Profit, outstanding Expenses & Account Income, Changing Financial Year.

Books Recommended:

1) Tally 9.0 in Simple Steps by - Kogent solutions
2) Text Book of Financial Accounting by - Daniel M. Kimuda
3) TDS by Chandan Gupta
4) Value added Tax-Alan A. Tail
5) Service Tax -Shubham Shinha
6) Payroll Management - Steven Bragg

Contents

AKS University

Department of Commerce

Short-Term Certificate Courses

Syllabus

Value-added Course GST

Course Objective: To equip participants with comprehensive knowledge and practical skills in Understanding GST Basics Learn about the GST framework, its components, and applicability. Understand GST registration, return filing, and invoicing. Explore how GST eliminates tax-on-tax effects. Discover how GST simplifies tax administration.

8-Day Workshop cum Training and Certificate Course on Mutual Fund Investing

Day 1: Introduction to GST & Constitutional provisions related thereto

1. Need for Constitutional amendment to introduce GST
2. Articles of Constitution of India dealing with levy of GST with
3. specific study of 101st Constitutional amendment
4. Establishment of GST Council and its recommendatory powers
5. Concept of dual tax and the working of CGST in harmony with
6. SGST/UTGST (explain levy of UTGST in case of Union
7. Territories without legislatures)
8. Concept of IGST operating like a bank clearing system for
9. flow of taxes to destination State/Union Territory
10. Structure of CGST Act and its inter-relationship with IGST
11. GST Compensation Cess
12. Important judgements relating to constitutional validity of levy
13. Important legal maxims

Day 2: Supply & Levy of GST

1. Scope and definition of supply [Detailed discussion on associated definitions such as business, consideration, goods, services, distinct person, related person etc.]
2. Purpose of deemed supply in schedule I [All entries with focused discussion on applicability of words 'where credit is availed' in para 1, cross-charge in para 2 and fiction in para 3]
3. Purpose of 'treatment' by fiction in schedule II [All entries with focused discussion on para 1(b) and 5(f), para 2 and 5(a), para 3, para 5(b) and 6(a), and para 5(e)]

Day 3: Classification

1. Need and significance of classification

2. Illustrative discussion on goods and services

3. Tracing tariff rate notification and exemption rate notification to section 9(1) and 11(1) of the CGST Act, 2017 respectively

Day 4: Nature of Supply

1. Inter-State supply as contained in section 7 of the IGST Act, 2017 with associated definitions like location of supplier of services, location of recipient of services, fixed establishment etc.
3. Fiction of inter-State supply in case of SEZ supplies [Section 7(5) of the IGST Act, 2017]
4. Tax implication of supplies made by SEZ units/developer amongst each other as also supplies made outside the SEZ including tax payable by SEZ units/developer under reverse charge
5. Intra-State supply [Section 8 of the IGST Act, 2017]

Day 5: Time of Supply

1. Relevance of time of supply
2. Time of supply of goods [Section 12 of the CGST Act, 2017]
3. Time of supply of services [Section 12 of the CGST Act, 2017]
4. Time of supply in case of change in rate of tax [Section 14 of
5. the CGST Act, 2017]

Day 6: Place of Supply

1. Place of supply of goods in domestic transactions [Section 10
2. of the IGST Act, 2017]
3. Place of supply of services in domestic transactions [Section
4. 11 of the IGST Act, 2017]
5. Place of supply of goods in international transactions [Section
6. 12 of the IGST Act, 2017]

Day 7: Valuation

1. Consideration vs. sole consideration
2. Absence of consideration versus presence of non-monetary
3. consideration
4. Types of discounts and incentives and their treatments under
5. GST
6. Discount vs. Bad-debts
7. Subsidy vs. Consideration by third party
8. Relationship between cost of goods sold and transaction value

Day 8: Reverse Charge Mechanism

1. Reverse charge provisions under sections 9(3) and 9(4) of the
2. CGST Act, 2017 /sections 5(3) and 5(4) of the IGST Act, 2017
3. Good & services notified under revere charge notifications

Day 9: Import and Export under GST

1. Supply in high seas, in-bond sales, third party shipments with
2. reference to section 7(2) of the IGST Act, 2017
3. Import of goods and inter-relationship of IGST Act, Customs
4. Act and Customs Tariff Act in relation thereto
5. Valuation of imported goods for the purpose of levy of IGST
6. and GST Compensation Cess
7. Import of goods by 100% EOU's and SEZs

8. Import of service
9. OIDAR services

Day 10: Foreign Trade Policy

1. Salient features of Foreign Trade Policy
2. Schemes & incentives under Foreign Trade Policy

Day 11: Input Tax Credit

1. input tax credit is a 'benefit' or a 'right'
2. Conditions for taking input tax credit [Section 16 of the CGST
3. Act, 2017]
4. Apportionment of credit and blocked credits [Section 17 of the
5. CGST Act, 2017]
6. Issues in availability of credit e.g., credit on CSR expenditure,
7. immovable property used in course or furtherance of business etc.

Day 12: Registration

1. Persons liable for registration
2. Taxable person versus registered person
3. Person exempt from registration
4. Person vs. taxable person vs registered person
5. Compulsory registration including registration for tax
6. deductor, tax collector, input service distributor, casual taxable
7. person and non-resident taxable person

Day 13: Exemptions under GST

1. Exempted supply vs. zero rated supply
2. Services exempted vide Notification No. 12/2017 CT (R) & Notification No. 9/2017 IT (R)
3. Goods exempted vide Notification No. 02/2017 CT (R) &
4. Notification No. 2/2017 IT (R)
5. Interpretation of scope of exemption notification

Day 14: E-way bill & e invoicing

1. Inspection of goods in movement
2. Seizure/ detention of vehicle/ goods
3. Penal consequences during/ after completion of movement
4. Difference between detention, seizure and confiscation of
5. goods
6. Confiscation proceedings and imposition of redemption fine
7. Practical difficulties of jurisdiction, no recourse to appeal

Day 15: Refunds

1. Type of refunds - refund on account of zero rated supply,
2. refund on account of inverted duty structure and other refunds
3. Procedure for claiming refund – Relevant forms, period for making refund claim, relevant date or time period for claiming refund, provisional refund, other terms & conditions as prescribed in relevant rules
4. Deficiency memo vs. SCN in RFD-08
5. Unjust enrichment
6. Limitation – legality and vested right to refund

Day 16: Returns & Payment of Tax

1. Types of returns [with special focus on Form GSTR-3B] and the applicability thereof
2. Rectification of returns
3. Types of electronic ledgers
4. Due date of payment, interest on delayed payment of tax
5. Manner of set off of input tax credit for payment of output tax liability

Day 17: Maintenance of books of account and records

1. Tax invoice, credit & debit notes
2. Implication of not mentioning tax charged in the invoice
3. Inter-state credit note in B2C and B2B supplies
4. Ensuring reversal of credit by recipient in case of credit note
5. Debit note and supplementary invoice reference
6. Account maintenance location wise and person-wise, trial balance GST wise
7. Period of retention of accounts

Day 18: Assessment

1. Type of assessments – self assessment, best judgement assessment, assessment of non-filers of returns, assessment of unregistered persons, summary assessment

Day 19 :Audit by tax authorities

1. Audit of returns, published financials or entire books of taxable person
2. Authorization to audit – open for inspection or fait accompli
3. Audit procedure – permit to call for new reports to be generated and submitted, duration of audit, off-site or on-site
4. Audit findings – confidentiality or otherwise, opportunity to respond to audit findings,

Day 20: Finalization of accounts from GST perspective

1. Disclosure in Audited Financial Statements on GST
2. Review of Audited Financial Statements from the point of view of GST:
    - Directors' Report
    - Audit Report
    - Notes to Accounts
    - Internal Audit Report, if any
    - Reporting under CARO for GST
3. Year-end adjustment entries and impact on GST

Workshop Schedule

Each day will include:

- **Lectures and Presentations:** 1.5 hours
- **Interactive Discussions and Q&A:** 30 min

This extended 20-day syllabus is designed to provide comprehensive knowledge and practical skills in GST compliances & filling.

AKS University
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Sherganj Panna Road, Satna (M.P.)
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Department of Physics

Value Added Course

Physics of Semiconducting Material and Device

Module: Physics of Semiconducting Material and Device

Here is a detailed outline for a 30-hour value-added module titled "Physics of Semiconducting Material and Device" for M.Sc. (Physics) students. This module aims to provide a comprehensive understanding of the fundamental physics, properties, and applications of semiconducting materials and devices.

Course Objectives:

- To understand the basic physics and properties of semiconducting materials.
- To explore the principles and operation of semiconductor devices.
- To learn about the fabrication techniques of semiconductor devices.
- To examine the applications of semiconductor devices in various fields.

Module Outline:

Week 1: Fundamentals of Semiconductors (6 hours)

1. Lecture 1: Introduction to Semiconductors (2 hours)

- Definition and types of semiconductors
- Intrinsic and extrinsic semiconductors
- Band theory of solids

2. Lecture 2: Carrier Concentration and Transport (2 hours)

- Electron and hole concentration
- Fermi level and Fermi-Dirac distribution
- Carrier mobility and conductivity

3. Lecture 3: Generation and Recombination (2 hours)

- Carrier generation and recombination mechanisms
- Lifetime and diffusion length
- Continuity equation

Week 2: Semiconductor Devices: Diodes (6 hours)

4. Lecture 4: PN Junction Diodes (2 hours)

- Formation and properties of PN junctions
- IV characteristics of diodes

- Diode equation

5. Lecture 5: Special Diodes (2 hours)

- Zener diodes
- Light-emitting diodes (LEDs)
- Photodiodes and solar cells

6. Practical 1: Diode Characteristics (2 hours)

- Lab session on IV characteristics of PN junction and Zener diodes
- Analysis of diode parameters

Week 3: Semiconductor Devices: Transistors (6 hours)

7. Lecture 6: Bipolar Junction Transistors (BJTs) (2 hours)

- Structure and operation of BJTs
- Current gain and IV characteristics
- BJT as an amplifier and switch

8. Lecture 7: Field-Effect Transistors (FETs) (2 hours)

- Junction FET (JFET)
- Metal-Oxide-Semiconductor FET (MOSFET)
- IV characteristics and operation

9. Practical 2: Transistor Characteristics (2 hours)

- Lab session on IV characteristics of BJTs and MOSFETs
- Analysis of transistor parameters

Week 4: Advanced Semiconductor Devices (6 hours)

10. Lecture 8: Power Devices (2 hours)

- Power diodes
- Insulated-gate bipolar transistors (IGBTs)
- Thyristors

11. Lecture 9: Optoelectronic Devices (2 hours)

- Laser diodes

- Photodetectors and sensors
- Optical communication devices

12. Lecture 10: Emerging Semiconductor Devices (2 hours)

- High-electron-mobility transistors (HEMTs)
- Quantum dot devices
- Organic semiconductors

Week 5: Fabrication and Characterization Techniques (6 hours)

13. Lecture 11: Semiconductor Fabrication Techniques (2 hours)

- Crystal growth and wafer preparation
- Lithography, doping, and etching
- Thin film deposition

14. Lecture 12: Semiconductor Characterization Techniques (2 hours)

- Electrical characterization: IV and CV measurements
- Optical characterization: Photoluminescence and Raman spectroscopy
- Structural characterization: X-ray diffraction (XRD) and electron microscopy

15. Practical 3: Fabrication and Characterization (2 hours)

- Lab session on basic fabrication steps
- Hands-on experience with characterization tools

Week 6: Applications and Future Directions (6 hours)

16. Lecture 13: Semiconductor Devices in Electronics (2 hours)

- Integrated circuits (ICs)
- Microprocessors and memory devices
- Power electronics

17. Lecture 14: Semiconductor Devices in Renewable Energy (2 hours)

- Photovoltaic cells
- Power conversion systems
- Energy storage devices

18. Guest Lecture/Panel Discussion: Future Trends in Semiconductor Technology (2 hours)

- Industry expert talks
- Current research trends
- Future prospects and challenges

Week 7: Project Work and Presentations (6 hours)

19. Project Work: Semiconductor Device Research Project (4 hours)

- Students work in groups on a research project related to semiconductor materials and devices
- Literature review, experimentation, and data analysis

20. Presentations and Discussions (2 hours)

- Group presentations on their research projects
- Peer review and feedback
- Summary and course wrap-up

Evaluation:

- Participation and Attendance: 10%
- Lab Practicals: 20%
- Mid-Term Test: 20%
- Project Work: 30%
- Final Presentation: 20%

Recommended Reading:

1. "Semiconductor Physics and Devices" by Donald A. Neamen
2. "Solid State Electronic Devices" by Ben G. Streetman and Sanjay Banerjee
3. "Physics of Semiconductor Devices" by Simon M. Sze and Kwok K. Ng
4. Relevant research papers and review articles provided during the course

This module provides a blend of theoretical knowledge and practical skills, ensuring that students gain a well-rounded understanding of the physics of semiconducting materials and devices.

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Department of Physics

Value Added Course

Introduction to Nano Science

Module: Introduction to Nano Science

Below is a detailed outline for a 30-hour value-added module titled "Introduction to Nano Science" for M.Sc. (Physics) students. This module is designed to provide a comprehensive understanding of the fundamentals, techniques, and applications of nanoscience.

Course Objectives:

- To understand the basic concepts and principles of nanoscience and nanotechnology.

- To familiarize students with various synthesis and characterization techniques for nanomaterials.

- To explore the applications of nanomaterials in different fields.

- To discuss the ethical, environmental, and health implications of nanotechnology.

Module Outline:

Week 1: Introduction to Nanoscience (6 hours)

1. Lecture 1: Introduction to Nanoscience and Nanotechnology (2 hours)

- Definition and history of nanoscience

- Importance and scope of nanotechnology

- Distinction between nanoscience and nanotechnology

2. Lecture 2: Fundamental Concepts of Nanoscale (2 hours)

- Size-dependent properties

- Surface area to volume ratio

- Quantum confinement

3. Lecture 3: Types of Nanomaterials (2 hours)

- Zero-dimensional, one-dimensional, and two-dimensional nanomaterials

- Examples: nanoparticles, nanowires, nanotubes, and nanofilms

Week 2: Synthesis of Nanomaterials (6 hours)

4. Lecture 4: Top-down and Bottom-up Approaches (2 hours)

- Overview of synthesis methods

- Mechanical milling, lithography (top-down)

- Sol-gel process, chemical vapor deposition (bottom-up)

5. Lecture 5: Chemical Synthesis Methods (2 hours)

- Wet chemical synthesis
- Sol-gel synthesis
- Hydrothermal synthesis

6. Practical 1: Synthesis of Nanoparticles (2 hours)

- Hands-on lab session on synthesizing gold or silver nanoparticles
- Analysis of size and distribution using UV-Vis spectroscopy

Week 3: Characterization Techniques (6 hours)

7. Lecture 6: Microscopy Techniques (2 hours)

- Scanning electron microscopy (SEM)
- Transmission electron microscopy (TEM)
- Atomic force microscopy (AFM)

8. Lecture 7: Spectroscopy Techniques (2 hours)

- X-ray diffraction (XRD)
- Raman spectroscopy
- Fourier-transform infrared spectroscopy (FTIR)

9. Practical 2: Characterization of Nanoparticles (2 hours)

- Hands-on lab session using SEM or TEM
- Analysis of nanoparticle morphology and structure

Week 4: Applications of Nanoscience (6 hours)

10. Lecture 8: Nanotechnology in Electronics (2 hours)

- Nanoelectronics
- Quantum dots and transistors
- Applications in computing and data storage

11. Lecture 9: Nanotechnology in Medicine (2 hours)

- Drug delivery systems
- Nanoparticles in imaging and diagnostics

- Tissue engineering

12. Lecture 10: Nanotechnology in Energy (2 hours)

- Solar cells and photovoltaics
- Batteries and supercapacitors
- Hydrogen storage and fuel cells

Week 5: Advanced Topics and Implications (6 hours)

13. Lecture 11: Nanomaterials for Environmental Applications (2 hours)

- Water purification
- Air filtration
- Pollution control

14. Lecture 12: Ethical, Environmental, and Health Implications (2 hours)

- Ethical considerations
- Environmental impact
- Health and safety risks

15. Guest Lecture/Panel Discussion: Future of Nanoscience (2 hours)

- Industry expert talks
- Current research trends
- Future prospects and challenges

Week 6: Project Work and Presentations (6 hours)

16. Project Work: Nanoscience Research Project (4 hours)

- Students work in groups on a research project related to nanoscience
- Literature review, experimentation, and data analysis

17. Presentations and Discussions (2 hours)

- Group presentations on their research projects
- Peer review and feedback
- Summary and course wrap-up

Evaluation:

- Participation and Attendance: 10%

- Lab Practicals: 20%

- Mid-Term Test: 20%

- Project Work: 30%

- Final Presentation: 20%

Recommended Reading:

1. "Introduction to Nanoscience" by Stuart Lindsay

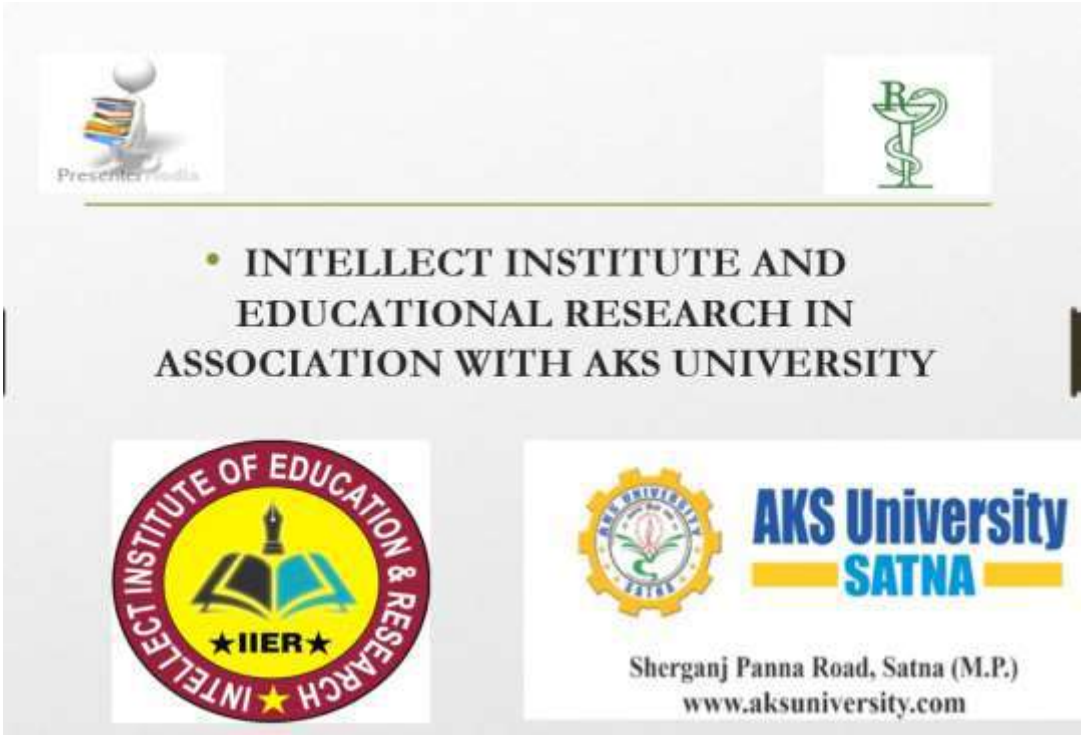
2. "Nanotechnology: Principles and Practices" by Sulabha K. Kulkarni

3. "Nanostructures and Nanomaterials: Synthesis, Properties, and Applications" by Guozhong Cao and Ying Wang

4. Relevant research papers and review articles provided during the course

This module provides a balance between theoretical knowledge and practical skills, ensuring that students gain a well-rounded understanding of nanoscience and its applications.

Intellect Institute and Educational Research (IIER)



Intellect Institute and Educational Research (IIER)

WHY IIER

- Intellect Institute of Education & Research (IIER) promised to deliver quality education to pharma students as per current scenario in world going on.
- We have qualified team of experts from different field that makes us unique and different than others
- 100% Job assistance to students
- For certain courses immediate internship available after completion of course
- Guest lectures and seminars by highly qualified speakers from various sectors of Industry.
- IIER has collaboration with foreign agencies for certain courses development.
- IIER gives guidance to student after completion of course also as per students need.
- IIER has collaboration with Pharma companies.
- IIER actively handles projects and works for top pharmaceutical companies

CLINICAL RESEARCH and PHARMACOVIGILLANCE

WHY IIER in Association with Mprex Healthcare?

Why IIER in Association with MPREX Healthcare?

About MPREX Healthcare Pvt. Ltd.

MPREX Healthcare Pvt. Ltd. is a prominent Asian Clinical Research Organization (CRO) known for its comprehensive and integrated solutions in clinical research.

- **One-Stop Solutions:** MPREX Healthcare offers end-to-end solutions in clinical research, catering to the pharmaceutical, biotechnology, and medical device industries.
- **Certifications and Memberships:** MPREX Healthcare is certified by prominent clinical research associations in India, Australia, and Canada, showcasing its commitment to international standards. With over 20 certifications, including

certifications from reputed bodies, MPREX Healthcare ensures adherence to rigorous quality and ethical standards.

- **Global Presence:** Operating across 6 countries and in over 20 states in India, MPREX Healthcare provides extensive geographic coverage and expertise in diverse regulatory environments.

Benefits of Partnership with MPREX Healthcare:

- **Direct Education by a CRO:** Partnering with MPREX Healthcare allows IIER (assuming this refers to an educational institution or training provider) to offer education directly from a leading CRO. Students and professionals benefit from firsthand insights into real-world clinical research practices and industry standards.
- **Industry-Recognized Expertise:** Students gain access to industry-recognized expertise and practical knowledge that aligns with current trends and regulations in clinical research.
- **Networking Opportunities:** Access to MPREX Healthcare's network provides valuable networking opportunities with industry professionals, enhancing career prospects in clinical research.

Collaborative Opportunities:

- **Training Programs:** Collaborative training programs between IIER and MPREX Healthcare can be tailored to meet specific educational needs, ensuring relevance and applicability in the clinical research sector.
- **Internship and Placement Support:** MPREX Healthcare's involvement can facilitate internship and placement opportunities for students, bridging the gap between academic learning and industry practice.

Why Choose IIER in Association with MPREX Healthcare?

- **Comprehensive Learning Experience:** Benefit from a comprehensive learning experience that integrates theoretical knowledge with practical insights from a leading CRO.

- **Industry-Driven Curriculum:** Courses developed in collaboration with MPREX Healthcare ensure that students are equipped with skills and knowledge relevant to the dynamic field of clinical research.
- **Global Perspective:** Gain exposure to global best practices and regulatory frameworks through MPREX Healthcare's international presence and expertise.

DETAILS OF MODULES

Career Opportunities in Clinical Research

Module 1 - Organization Structure in Clinical Research

Learn about the hierarchical structure within clinical research organizations and the roles of various departments.

Module 2 - Role of Contract Research Organization (CRO)

Understand the critical role CROs play in clinical research, from trial design to regulatory approval.

Module 3 - Drug Development and Introduction to Clinical Research

Explore the drug development process and the basics of clinical research.

Module 4 - Good Clinical Practices (GCP)

Study the international ethical and scientific quality standards for designing, conducting, and reporting trials involving human subjects.

Module 5 - Description of Phase I-IV and Role of DCGI

Gain insights into the different phases of clinical trials and the role of the Drugs Controller General of India (DCGI).

Module 6 - Institutional Review Board (IRB) / Ethics Committee

Learn about the function and importance of IRBs and Ethics Committees in protecting the rights and welfare of clinical trial participants.

Module 7 - Informed Consent

Understand the process and significance of obtaining informed consent from trial participants.

Module 8 - Training on Case Report Form (CRF) Writing

Acquire skills in writing and designing CRFs, crucial for data collection in clinical trials.

Module 9 - Clinical Trial Design

Study the principles and methodologies of designing clinical trials.

Module 10 - Protocol as Clinical Tool

Learn about the clinical trial protocol, a critical document that outlines the study plan.

Module 11 - Evaluation of Clinical Research Site

Understand the criteria and procedures for evaluating clinical research sites.

Module 12 - Clinical Research Documentation

Gain knowledge of the essential documents required in clinical research.

Module 13 - Evaluation and Monitoring of Source Documentation

Learn the importance of source documents and the procedures for their evaluation and monitoring.

Module 14 - Trial Monitoring and Responsibilities

Understand the roles and responsibilities of trial monitors in ensuring compliance and data integrity.

Practical Aspects and Audit of Clinical Trial Site

Module 15 - Regulatory Aspects of Clinical Research

Study the regulatory requirements and guidelines governing clinical research.

Module 16 - Quality Assurance and Documentation

Explore the principles of quality assurance and the importance of proper documentation.

Module 17 - Adverse Event and Adverse Drug Reaction

Learn to identify, report, and manage adverse events and adverse drug reactions in clinical trials.

Module 18 - Research Misconduct

Understand the various forms of research misconduct and the importance of ethical conduct in clinical research.

Module 19 - Central Roles of Sponsor and Principal Investigator

Study the responsibilities and roles of sponsors and principal investigators in clinical trials.

Module 20 - Participants Recruitment and Retention

Learn strategies for recruiting and retaining participants in clinical trials.

Module 21 - Medical Writing

Acquire skills in medical writing, including the preparation of clinical trial reports and regulatory documents.

Module 22 - Project Management in Clinical Research

Understand the principles and practices of project management in the context of clinical research.

Module 23 - Practical Training on Statistic Software and Case Study Analysis

Gain hands-on experience with statistical software and case study analysis in clinical research.

Module 24 - Overview of Clinical Data Management

Learn about the processes and systems involved in managing clinical trial data.

Module 25 - Roles and Responsibilities of CRC, CRA, QC, QA

Understand the roles and responsibilities of Clinical Research Coordinators (CRC), Clinical Research Associates (CRA), Quality Control (QC), and Quality Assurance (QA) professionals.

Module 26 - Roles and Responsibilities of Clinical Data Management Personnel

Study the specific roles and responsibilities of personnel involved in clinical data management.

Module 27 - Pharmacovigilance

Learn about the detection, assessment, understanding, and prevention of adverse effects or any other drug-related problems.

Module 28 - Good Documentation Practice Training in Clinical Trials

Understand the principles of Good Documentation Practices (GDP) in clinical trials.

WHY IIER in Association with Mprex Healthcare?

MPREX HEALTHCARE PVT.LTD.

• A leading Asian clinical research organization providing one stop solutions.

• MPREX Healthcare is now a certified member of Indian, Australian and Canadian clinical research associations with more than 20

Certifications.

• Currently operating in 6 countries and 20+ states in India.

Intellect Institute and Educational Research (IIER)

• GET DIRECTLY EDUCATED by Contract Research Organization (CRO)

About Course

- Certification Program in clinical research is planned to provide aspirants with an opportunity to attain and develop the proficiency necessary for effective management of clinical research.
- The program is designed to meet the high demand for trained personnel for human clinical trials.
- The program empowers you to control practical aspects of clinical research and administration including clinical trial phases and design, planning, implementation, data analysis, regulatory and procedural guidelines, and ethical considerations.

DETAILS OF MODULES

1) Career Opportunities in Clinical Research

2) Organization Structure in Clinical Research

3) Role of Contract Research Organization

4) Drug Development and Introduction to Clinical Research

5) Good Clinical Practices

6) Description of Phase I-IV and role of DCGI

7) Institution Review Board/Ethics Committee

8) Informed Consent

9) Training on CRF writing

10) Clinical Trial Design

11) Protocol as Clinical Tool

12) Evaluation of Clinical Research Site

13) Clinical Research Documentation

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15) Trial Monitoring & Responsibilities

16) Practical Aspects and Audit of Clinical Trial Site

17) Regulatory Aspects of Clinical Research

18) Quality Assurance & Documentation

19) Adverse Event & Adverse Drug Reaction

20) Research Misconduct

21) Central Roles of Sponsor and Principal Investigator

22) Participants Recruitment and Retention

23) Medical Writing

24) Project Management in Clinical Research

25) Practical training on Statistic software and case study analysis

26) Overview of Clinical Data Management

27) Roles & Responsibilities CRC, CRA, QCQA etc

28) Roles & Responsibilities of Clinical Data Management Personnel

29) Pharmacovigilance

30) Good Documentation practice training in Clinical trial

DETAILS OF MODULES

CAMPUS INTERVIEW

• Mprex Healthcare Pvt. Ltd. – CRO

• IP Intellectual Services – IPR Firm

• Rejoice Medicrop – Marketing Company

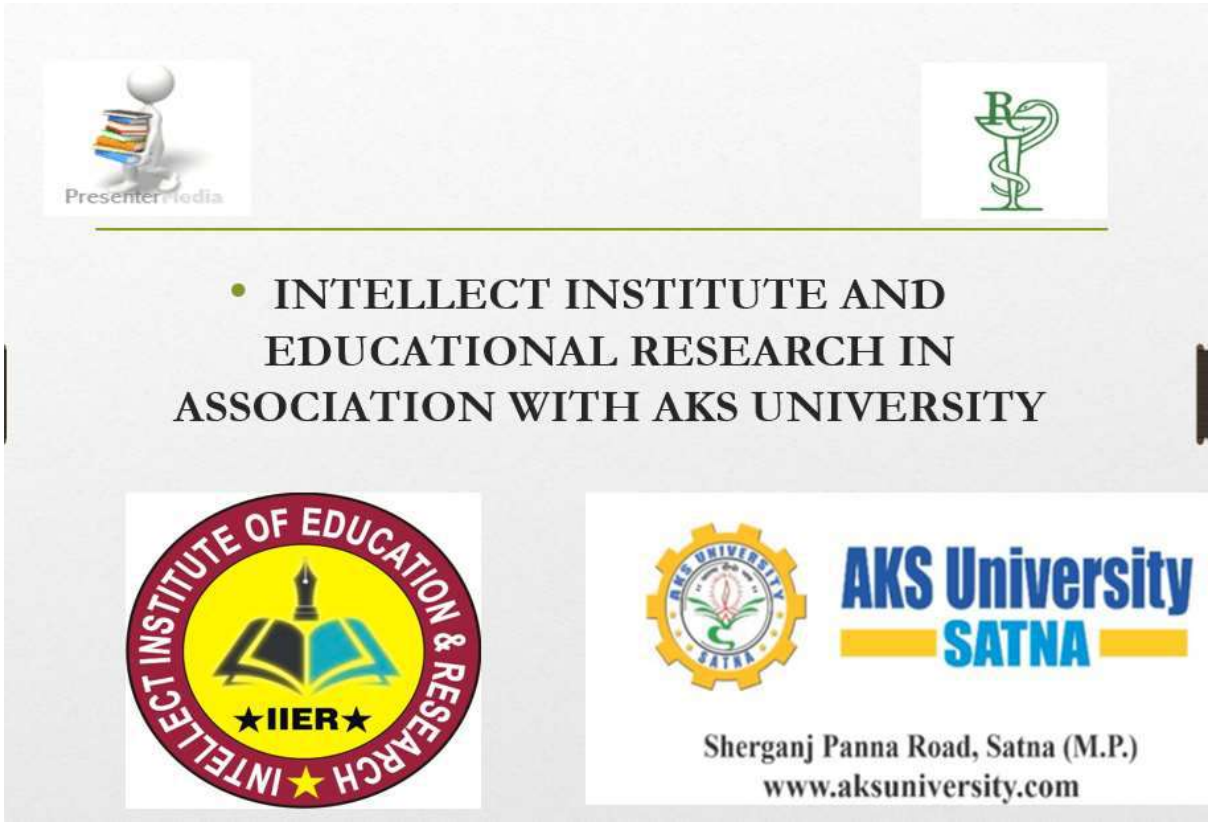
• Intas - Marketing Company

• GP Life Sciences Pvt. Ltd. Gujrat R & D, QA, QC – Direct Interview

• Omkar Herbocare, Hadapsar

• Grinson Phytoherbs Pvt ltd, Satara

Intellect Institute and Educational Research



WHY IIER

- Intellect Institute of Education & Research (IIER) promised to deliver quality education to pharma students as per current scenario in world going on.
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- For certain courses immediate internship available after completion of course
- Guest lectures and seminars by highly qualified speakers from various sectors of Industry.
- IIER has collaboration with foreign agencies for certain courses development.
- IIER gives guidance to student after completion of course also as per students need.
- IIER has collaboration with Pharma companies.
- IIER actively handles projects and works for top pharmaceutical companies

Understanding Intellectual Property Rights (IPR)

Intellectual Property Rights (IPR) encompass a range of legal protections for creations of the mind, including inventions, literary and artistic works, symbols, names, and designs used in commerce. These rights enable creators and inventors to safeguard their innovations and benefit commercially from their creative efforts or reputation.

Types of Intellectual Property Protection:

1. **Patent:** Grants exclusive rights to inventors of novel, non-obvious, and industrially applicable inventions.
2. **Copyright:** Protects original works of authorship, such as literary, dramatic, musical, and artistic creations.
3. **Trademark:** Safeguards words, phrases, symbols, or designs that distinguish goods and services in the marketplace.
4. **Trade Secrets:** Confidential business information providing a competitive advantage.

Importance of IPR in Industries:

Effective IPR management is crucial for identifying, planning, commercializing, and protecting inventions or creative works. Industries, including the pharmaceutical sector, are developing robust IPR strategies to navigate global markets and protect their innovations.

MPREX IPR Company and IP Intellect Services (IPIS):

We offer comprehensive courses through our IP Intellect Services (IPIS), designed to equip professionals with expertise in Intellectual Property Rights. Our courses cover essential topics such as:

- IPR Fundamentals and Strategies
- Drug Regulatory Affairs and IPR
- Certified Course in Clinical Research

Our Services

1. Copyright

- Secure your creative works such as literature, music, art, and software.
- Ensure exclusive rights and protection against unauthorized use.
- Guidance on copyright registration and enforcement.

2. Design

- Protect the unique appearance and aesthetics of your products.
- Assistance with design registration to safeguard your visual innovations.
- Strategies to prevent design infringement and enforce your rights.

3. Patents

- Protect your inventions and technological advancements.
- Comprehensive patent search, filing, and prosecution services.
- Expert advice on patentability and commercialization.

4. Trademarks

- Safeguard your brand identity and reputation.

- Trademark search, registration, and monitoring services.
- Enforcement of trademark rights against unauthorized use.

5. Joint Ventures

- Facilitate strategic partnerships and collaborations.
- Assist in the creation and management of joint venture agreements.
- Ensure intellectual property protection in joint ventures to maximize value and minimize risks.

Our Joint Ventures

IP Intellect Services

Mission: To streamline IP processes for businesses and individuals with tailored solutions for comprehensive IP protection and utilization.

- Offering specialized IP management and consultancy services.
- Streamlining IP processes for businesses and individuals.
- Tailored solutions for comprehensive IP protection and utilization.

Impact: Enabling businesses and individuals to maximize the value of their intellectual property through efficient management and strategic utilization.

Intellectual Property Rights (IPR)

Course Overview:

- Comprehensive coverage of Intellectual Property Rights (IPR) fundamentals.
- In-depth study of patents, trademarks, copyrights, and trade secrets.
- Latest updates on global IPR laws and regulations.

Key Topics:

- Introduction to IPR and its importance.
- Detailed analysis of patents and patent drafting.

- Understanding trademarks and brand protection.
- Copyrights and digital rights management.
- Trade secrets and confidential information.
- IPR litigation and enforcement.

Who Should Attend?

- Legal professionals.
- Entrepreneurs and business owners.
- Researchers and academicians.
- Students in law and business schools.

Course Duration:

- 30 plus module and 30 plus hours with flexible online and offline sessions.

Modules

- ✓ Module 1- Historical Development of Intellectual Property Rights; Introduction to Intellectual Property Rights and its components including Patents, Designs, Trademarks, Copyrights and Trade secrets; Administration of Patents office in India
- ✓ Module 2 – IPR– A Brief Overview
- ✓ PATENTS:
- ✓ Module 3 – Patent Filing procedure in India; Patent Types; Patentability Concepts; Contents of Specification and Claims
- ✓ Module 4 – PCT Filing and Paris Conventions Procedure
- ✓ Module 5 – Patent Oppositions, Revocations and Compulsory License Provisions
- ✓ Module 6 – Infringement of Patents and Analysis
- ✓ Module 7 Indian Patent Act – A Brief Overview;
- ✓ Module 8 - Patent Litigations – Infringers and Defensive Strategy; Case Law Discussion
- ✓ Module 9 – NBA Requirements and Intellectual Property
- TRADEMARKS:
- ✓ Module 10 – Introduction to Trademark and Trademark Filing Process

- ✓ Module 11 - Collective Marks, Certification Marks, Characteristic of Trademarks, Trademark Act 1999, Madrid Agreement Concerning registration of Marks
- ✓ Module 12- Passing Off and relevant Case Law
- ✓ DESIGNS:
- ✓ Module 13 - Introduction, Importance of Industrial Design, how to protect industrial design, duration of protection for Industrial design, requirements for registration of a design, designs that cannot be protected, Steps in filing application for Industrial design, Industrial Design Act 2000 Hague agreement concerning International deposit of Industrial designs, Locarno Agreement
- ✓ Module 14 - Procedure for obtaining Design Protection; Passing Off Revocation, Infringement and Remedies; (Tests to determine Infringement, Onus to prove Infringement, Grounds for filing Show Cause Notices); TRIPS and Industrial; Design Protection; Rights of Design Holders; Fraudulent and obvious imitations
- ✓ Copyright in Design; Comparative Analysis with Registered Designs Act, 1949 (UK)
- COPYRIGHTS:
- ✓ Module 15 - Introduction, Derivative Work, Rights of Reproduction, Rights to public performance and broadcasters, Right of Translation and Adaptation, Copyright Transfer, Berne Convention , Copyrights in India, WIPO copyright Treaty
- ✓ Module 16 - Licensing and assignment of Copyrighted work
- TRADESECRETS AND GEOGRAPHICAL INDICATIONS:
- ✓ Module 17 – INTORIDUCTION AND BASICS
- ✓ IP GENERAL:
- ✓ Module 18 - IP Portfolio Management
- ✓ PRACTICALS:
- ✓ Module 19 – Patent Searches
- ✓ Module 20 – Freedom to Operate Analysis, Patent Landscape; Infringement Analysis
- ✓ Module 21 – Trademark Searches and Classification System
- ✓ Module 22–Patent Drafting Exercise and Filing at Indian Patent Office
- ✓ Module 23 – Calculation of Patent Expiries and checking the patent status depending on number search
- LEGAL AND IP:
- ✓ Module 24 - Non Disclosure Agreement, Tools to Protect Trade secret, Legal Framework for protection of Trade secret in India

- ✓ Module 25 - Patent Aspect of Licensing: Patent Conflict licenses, Technology Transfer process, Licensing, Research collaborations, Contract Research Agreements, Funding agreements, License Contracts
- ✓ Module 26 – IP and Legal Due Diligence
- CARREAR OPPORTUNITIES:
- Module 27 – Role of IPR in Pharmaceutical company
- ✓ Module 28 – IP Roles in various functions in an organization
- ✓ Module 29 – Career Approach towards IP and Legal after graduation.
- ✓ Module 30 – Interview Questionnaire on Intellectual Property

Course Code: **151LW304-B**
Course Category: **Elective – I**
Course Title : **HUMAN RIGHTS LAW & PRACTICES**

Course Objectives:

Human rights are fundamental rights that all people have, regardless of their race, ethnicity, gender, country, place of birth, class, caste, religion, language, or any other status. The course's goal is to educate students on the meaning, concept, and current state of human rights as well as their historical evolution. The provisions in the Indian Constitution and national legislation for the preservation of human rights are also discussed, as well as the function of international statutory authorities in this regard. The goal of the course is to introduce students to the idea of humanitarian law as well as the many national and international organisations that work to preserve human rights.

Rationale: The study of human rights is crucial as it emphasizes the universal protection of human dignity. Human rights are grounded in the belief that every individual possesses inherent worth and is entitled to certain fundamental rights and freedoms. By understanding human rights, individuals and societies can work towards creating a world where the dignity of every person is respected, irrespective of their background, identity, or circumstances.

Course Outcomes:
After completion of this course students will able to-

CO1: Describe and explore the Historical Development and concept of Human Right, Human Right in India ancient, medieval and modern concept of rights, Human Right in Western tradition, Human Right in legal tradition: International Law and National Law, UN and Human Rights, Universal Declaration of Human Rights (1980) and Covenant on political and Civil Rights (1966).

CO2: Know about conventions related to various rights.

CO3: Understand the Impact and Implementation of International Human Rights Norms in India.

CO4: Explain human rights of women, prisoners, child, Dalits, victims, and Minorities.

CO5: Describe and examine the remedies available for violation of human rights.

The Theory Paper Shall be of 70 Marks and of 3 hours duration. The candidates will have to attempt Five Questions out of the Ten Questions asked in the Question Paper. A question may or may not be divided in parts. The question asked subjective only. Thirty Marks have been assigned for internals.

The course shall comprise of the following:

UNIT – I

Concept

1. Historical Development and concept of Human Right

2. Human Right in India ancient, medieval and modern concept of rights

3. Human Right in Western tradition

4. Concept of natural law and natural rights

5. Human Right in legal tradition: International Law and National Law

6. UN and Human Rights

7. Universal Declaration of Human Rights (1980) - individual and group rights

8. Covenant on political and Civil Rights (1966)

UNIT – II

Conventions

1. Convention on economic social and cultural Rights 1966

2. Convention on the elimination of all forms of discrimination against women

3. Convention on the rights of the child

UNIT – III

Impact and Implementation

1. Impact and Implementation of International Human Rights Norms in India

2. Human rights norms reflected in fundamental rights in the constitution

3. Directive principles: legislative and administrative implementation of international human rights norms through judicial process

UNIT –IV

Disadvantaged Groups

1. Human Rights and disadvantaged Groups – women, prisoners, child, Dalits, Aid victims, and Minorities

2. Enforcement of Human Right in India

UNIT- V

Remedies

1. Role of courts: the Supreme Court, High Courts and other courts

2. Statutory commissions- human rights, women, minority and backward class

Scheme of Studies:

Category	Course Code	Course Title	Scheme of studies (Hours/Week)					Total Credits (C)
			CI	PI	SA	SL	Total Study Hours (CI+PI+SW+SL)	
Elective - I	151LW304-B	HUMAN RIGHTS LAW & PRACTICES	6	0	1	1	8	6

Legend: **CI:** Class room Instruction (Includes different instructional strategies. .Lecture (L) and Tutorial (T) and others).
PI: Practical Instruction
SA: Sessional assignment.
SL: Self Learning,
C: Credits.

Note: SA & SL have to be planned and performed under the continuous guidance and feedback of teacher to ensure outcome of Learning.

Scheme of Assessment:

Theory

Category	Course Code	Course Title	Scheme of Assessment (Marks)							
			Progressive Assessment (PRA)						End Semester Assessment (ESA)	Total Mark (PRA+ ESA)
			Class/Home Assignment 1 5 marks (CA)	Class Test 1 10 marks (CT)	Presentation (P)	Class Activity any one (CAT)	Class Attendance (AT)	Total Marks (CA+CT+P+ CAT+AT)		
Elective - I	151LW304-B	HUMAN RIGHTS LAW & PRACTICES	5	10	5	5	5	30	70	100

Course-Curriculum Detailing:

This course syllabus illustrates the expected learning achievements, both at the course and session levels, which students are anticipated to accomplish through various modes of instruction including Classroom Instruction (CI), Practical Instruction (PI), Sessional Assingment (SA), and Self Learning (SL). As the course progresses, students should showcase their mastery of Session Outcomes (SOs), culminating in the overall achievement of Course Outcomes (COs) upon the course's conclusion.

CO1: Describe and explore the Historical Development and concept of Human Right, Human Right in India ancient, medieval and modern concept of rights, Human Right in Western tradition, Human Right in legal

tradition: International Law and National Law, UN and Human Rights, Universal Declaration of Human Rights (1980) and Covenant on political and Civil Rights (1966).

Approximate Hours

Item	App. Hrs
Cl	18
PI	00
SA	01
SL	01
Total	**20**

Session Outcomes (SOs)	Practical Instruction (PI)	Classroom Instruction (CI)	Self Learning (SL)
So1.1.Understand background ,meaning,nature and fundamental feature of human right. SO1.2.Undearstand types of human rights. SO1.3.Understand characteristics of human rights.		**Unit-1: Concept** 1.1.Historical Development of Human Right 1.2. The concept of the Human Right 1.3.Human Right in ancient India 1.4.Human Right in medieval India 1.5.Human Right in modern India 1.6..Human Right in Western traditional 1.7. Concept of natural law and natural rights 1.8.Introduction to Natural Law 1.9.Historical Roots of Natural Law 1.10.Key Philosophers and Thinkers 1.11.Evolution of Natural Rights 1.12.Relationship Between Natural Law and Morality 1.13.Criticisms and Debates 1.14.Application of Natural Rights in Modern Society 1.15 . Human Right in legal tradition International Law and National Law 1.16. UN and Human Rights	Development and concept of human rights, natural rights and natyral laws,evlution of natural laws.

		1.17. Universal Declaration of Human Rights (1948) - individual and group rights 1.18. Covenant on political and Civil Rights	

Suggested Sessional Assignment (SA):

Assignments:-

- Relationship Between Natural Law and Morality
- Universal Declaration of Human Rights (1948)
- Historical Development of Human Right

CO2: Know about conventions related to various rights.

Approximate Hours

Item	App. Hrs
Cl	18
PI	00
SA	01
SL	01
Total	**20**

Session Outcomes (SOs)	Practical Instruction (PI)	Classroom Instruction (CI)	Self Learning (SL)
So2.1.To understand the importance of the human rights. SO2.2.To understand the international conventions. SO2.3.To learn about the effect of conventions.		**UNIT-II: Conventions** 2.1. Convention on economic social and cultural Rights 1966 2.2.Introduction to the Convention 2.3.Historical Context and Background 2.4.Key Principles and Objectives 2.5.Scope and Coverage of Economic, Social, and Cultural Rights 2.6.Implementation and Monitoring Mechanisms 2.7.Convention on the elimination of all forms of	Scope and Coverage of Economic, Social, and Cultural Rights

		discrimination against women 2.8.Introduction to CEDAW 2.9.Historical Context and Background 2.10.Scope and Definition of Discrimination Against Women 2.11.Rights and Obligations Outlined in CEDAW 2.12.Mechanisms for Implementation and Monitoring 2.13. Convention on the rights of the child 2.14.Preamble of CRC 2.15.Definition of a Child 2.16.General Principles, Education, Leisure, and Cultural Activities 2.17.Civil Rights and Freedoms, Special Protection Measures 2.18.Health and Welfare, Implementation and Monitoring.	

Suggested Sessional Assignment (SA):

Assignments:-

- Convention on the elimination of all forms of discrimination against women
- Convention on the rights of the child
- Convention on economic social and cultural Rights 1966

CO3: Understand the Impact and Implementation of International Human Rights Norms in India.

Approximate Hours

Item	App. Hrs
Cl	18
PI	00
SA	01
SL	01
Total	**20**

Session Outcomes (SOs)	Practical Instruction (PI)	Classroom Instruction (CI)	Self Learning (SL)

So3.1.To give the students comprehensive information of the creation, enforceability and capabilities of human rights norms. SO3.2.Analyze interaction between convention on human rights. SO3.3.Recognise the importance of conventions.		**UNIT-III: Impact and Implementation** 3.1. Impact and Implementation of International Human Rights Norms in India. 3.2. Introduction to International Human Rights Norms. 3.3. Historical Context of Human Rights in India. 3.4. Adoption and Ratification of International Human Rights Treaties. 3.5. Legal Framework: Incorporating International Norms into Indian Law. 3.6. Challenges in Implementation: Legal and Cultural Considerations. 3.7. Human rights norms reflected in fundamental rights in the constitution. 3.8. Right to Life and Personal Liberty. 3.9.Equality before the Law 3.10.Freedom of Speech and Expression 3.11.Freedom of Religion 3.12.Right to Privacy 3.13. Directive principles: legislative and administrative implementation of international human rights norms through judicial process. 3.14. Introduction to Directive Principles and International Human Rights Norms. 3.15. Legislative Framework for Implementing International Human Rights in National Laws. 3.16.Administrative Mechanisms for Enforcing International Human	Right to Life and Personal Liberty, Adoption and Ratification of International Human Rights Treaties, Freedom of Speech and Expression

		Rights Standards 3.17. Judicial Process in Implementing International Human Rights Norms. 3.18. Judicial Process in Implementing International Human Rights Norms.	

Suggested Sessional Assignment (SA):

Assignments:

- Historical Context of Human Rights in India
- Right to Privacy
- Equality before the Law

CO4: Explain human rights of women, prisoners, child, Dalits, victims, and Minorities.

Approximate Hours

Item	App. Hrs
Cl	18
PI	00
SA	01
SL	01
Total	**20**

Session Outcomes (SOs)	Practical Instruction (PI)	Classroom Instruction (CI)	Self Learning (SL)
So4.1.Describe the obligation of persons to follow the human rights. SO4.2.distinguish between the intrest of groups of the people. SO4.3.explain fundamental principle of human rights.		UNIT-IV: Disadvantaged Groups 4.1. Human Rights and disadvantaged Groups women, prisoners, child, Dalits. Aid victims, and Minorities. 4.2.Women's Rights: Empowering Gender Equality. 4.3.Prisoners' Rights: Ensuring Dignity	Child Welfare: Safeguarding the Future Generation, Aid Victims: Rebuilding Lives Amidst Crises, Ensuring Minority Rights and Inclusion.

		Behind Bars. 4.4.Child Welfare: Safeguarding the Future Generation. 4.5.Dalits: Advocating for Equality and Eradicating Discrimination. 4.6.Aid Victims: Rebuilding Lives Amidst Crises. 4.7.Minority Rights: Upholding Diversity and Inclusivity. 4.8.Supporting Aid Victims' Rehabilitation. 4.9.Ensuring Minority Rights and Inclusion 4.10. Enforcement of Human Right in India. 4.11.Constitutional Framework. 4.12.Legal Protections for Human Rights. 4.13.National Human Rights Commission. 4.14.Judicial Role and Activism. 4.15.Legislative Safeguards. 4.16.Civil Society and Human Rights Advocacy. 4.17.Law Enforcement and Human Rights 4.18.Emerging Issues and Reforms.	

Suggested Sessional Assignment (SA):

Assignment-

- Empowering Gender rights.
- National Human Rights Commission.
- Enforcement of Human Right in India.

CO5: Describe and examine the remedies available for violation of human rights.

Approximate Hours

Item	App. Hrs

Cl	18
PI	00
SA	01
SL	01
Total	**20**

Session Outcomes (SOs)	**Practical Instruction (PI)**	**Classroom Instruction (CI)**	**Self Learning (SL)**
So5.1.describe the role of the courts. SO5.2.differentiate between challenges and drawbacks. SO5.3.recognise how the court can play their role in implementation of human right.		**UNIT-V: Remedies** 5.1. Role of courts: the Supreme Court, High Courts and other courts. 5.2.Overview of the Judicial System. 5.3.The Supreme Court: Apex of the Judiciary. 5.4.High Courts: Regional Judicial Powerhouses. 5.5.Specialized Tribunals and Courts. 5.6.District Courts: The Foundation of the Judiciary. 5.7.Role in Constitutional Interpretation. 5.8.Judicial Review: Ensuring Government Accountability. 5.9.Landmark Cases: Shaping Legal Precedent. 5.10.Access to Justice: The Courts and the Common Citizen. 5.11. Statutory commissions human rights, women, minority and backward class. 5.12.Statutory Commissions: Human Rights. 5.13.Empowering Equality: Women's Statutory Commissions. 5.14.Inclusivity Matters: Statutory Commissions for Minorities. 5.15.Addressing Disparities: Backward Class Statutory Commissions. 5.16.Empowering the Marginalized:	Role in Constitutional Interpretation, Addressing Disparities: Backward Class Statutory Commissions

		Backward Class Representation in Statutory Commissions. 5.17.Championing Inclusivity: Statutory Commissions and Minority Rights. 5.18.Ensuring Equality: Women's Rights in Statutory Commissions.	

Suggested Sessional Assignment (SA):

Assignments:

- Role of courts: the Supreme Court, High Courts and other courts
- Landmark Cases: Shaping Legal Precedent
- Empowering the Marginalized: Backward Class Representation in Statutory Commissions

Brief of Hours suggested for the Course Outcome

Course Outcomes	Class Lecture (CL)	Sessional Assignment (SA)	Self Learning (SL)	Total hour (CL+SA+SL)
CO1: Describe and explore the Historical Development and concept of Human Right, Human Right in India ancient, medieval and modern concept of rights, Human Right in Western tradition, Human Right in legal tradition: International Law and National Law, UN and Human Rights, Universal Declaration of Human Rights (1980) and Covenant on political and Civil Rights (1966).	18	01	01	20
CO2: Know about conventions related to various rights.	18	01	01	20
CO3: Understand the Impact and Implementation of International Human Rights Norms in India.	18	01	01	20
CO4: Explain human rights of women, prisoners, child, Dalits, victims, and Minorities.	18	01	01	20

CO5: Describe and examine the remedies available for violation of human rights.	18	01	01	20
Total Hours	**90**	**05**	**05**	**100**

Suggestion for End Semester Assessment

Suggested Specification Table (For ESA)

CO	Unit Titles	Marks Distribution			Total Marks
		R	U	A	
CO-1	Concept	5	5	4	14
CO-2	Conventions	4	2	8	14
CO-3	Impact and Implementation	5	7	2	14
CO-4	Disadvantaged Groups	5	8	1	14
CO-5	Remedies	4	2	8	14
Total		**23**	**24**	**23**	**70**

Legend: R: Remember, U: Understand, A: Apply

The end of semester assessment will be held with written examination of 70 marks.

Suggested Instructional/ Implementation Strategies:

- Improved Lecture.
- Tutorial.
- Case Method.
- Group Discussion.
- Moot court.
- Visit to court.
- Demonstration
- Online sources.
- Brainstorming.

Suggested Learning Resources:

1. S.K. Awasthi and R.P. Kataria. Law Relating to Human Rights, Orient New Delhi.

2. Human Rights Watch women's Rights Project, The Human Rights Watch Global Report on women's Human Rights (2000) Oxford.
3. Ermacora, Nowak and Tretter. International Human Rights (1993), Sweet & Maxwell.
4. Wallace, International Human Rights: Text & Materials (1996), Sweet & Maxwell.
5. Human Rights and Global Diversify (2001), Frank Cass, London.
6. Nirmal. B.C., The Right to Self determination in International (1995). Deep & Deep.
7. P.R. Gandhi. International Human Rights documents (1999) Universal, Delhi.

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