Advanced Python Programming

Course Objective:

This course introduces students to data visualization in the field of exploratory data science using Python.

Learning Outcomes:

Upon completion of this course, students will be able to:

- Learn use of objects & classes and perform data handling using Numpy arrays
- Do data manipulation using Pandas

UNIT-1:

- Object Oriented Programming: classes, objects and methods.
- File and exception handling: File handling through libraries; Errors and exception handling.
- Array Manipulation using Numpy: Numpy array: Creating Numpy arrays, Data Types for Numpy arrays, Arithmetic with NumPy Arrays Basic Indexing and Slicing.

UNIT-2:

Data Manipulation using Pandas: Data Structures in Pandas: Series, DataFrame, Index objects, Loading data into Pandas data frame. Working with Data frames. Grouped and aggregate calculations.

Text Books:

- ✓ *McKinney W. Python for Data Analysis: Data Wrangling with Pandas, NumPy and IPython. 2nd edition. O'Reilly Media, 2018.*
- ✓ *Chen D. Y, Pandas for Everyone: Python Data Analysis, Pearson, 2018.*
- ✓ *Balaguruswamy E. Introduction to Computing and Problem Solving using Python, 2nd*
- ✓ *edition, McGraw Hill Education, 2018*

Lab: Advanced Python Programming

1. Write a Python class named Person with attributes name, age, weight (kgs), height (ft) and takes them through the constructor and exposes a method get_bmi_result() which returns one of "underweight", "healthy", "obese".
2. Write a python program to demonstrate various kinds of inheritance.
3. Write a python program to catch following exception i) Value Error ii) Index Error iii) Name Error iv) Type Error v) Divide Zero Error
4. a) Create a numpy array from list, tuple with float type
   b) Python program to demonstrate slicing, integer and boolean array indexing
5. a) Write a python program to find min, max, sum, cumulative sum of array.
   b) Write a python program to demonstrate use of ndim, shape, size, dtype.
6. a) Write a python program to implement Pandas Series with labels.
   b) Create a Pandas Series from a dictionary.
   c) Creating a Pandas DataFrame.
   d) Write a program which makes use of following Pandas methods
      i) describe () ii) head() iii) tail()
7. a) Write a program that converts Pandas DataFrame and Series into numpy.array.

b) Write a program that demonstrates the column selection, column addition, and column deletion.
c) Write a program that demonstrates the row selection, row addition, and row deletion.
d) Get n-largest and n-smallest values from a particular column in Pandas dataFrame

8. a) Write a program which use pandas inbuilt visualization to plot following graphs:
   i. Histograms ii. Line plots iii. Scatter plots iv. Bar plots
   b) Write a program to demonstrate use of groupby() method.
9. a) Write a program to demonstrate pandas Merging, Joining and Concatenating
   b) Creating dataframes from csv and excel files.
10. Write a Python program using pandas that finds Missing Data and replace missing data.

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8. a) Write a program which use pandas' inbuilt visualization to plot following graphs:
   i. Histograms ii. Line plots iii. Scatter plots iv. Bar plots
   b) Write a program to demonstrate use of group by() method.
9. a) Write a program to demonstrate pandas Merging, Joining and Concatenating
   b) Creating data frames from csv and excel files.
10. Write a Python program using pandas that finds Missing Data and replace missing data.

Basics of Archives and Museum

Course Objectives:

- To introduce students to the institutions of Archives and Museums as a site of knowledge.
- To aid students to understand the making of the primary sources for the study of history.
- To help students understand and appreciate the different kinds of archives and museum and then new structuring in the digital era.

Course Outcomes:

- Students would learn about the many uses of archives and museums as a site of historical and social knowledge.
- They would be trained to use archives and understand the process of classification and cataloguing of the records.

Unit I: Definition of Archives and Museum: types - digital, virtual, crafts, media; difference between archives, museum, and library

This unit defines Archives and Museum. It also elaborates on the types of archives and museums which includes digital, virtual, crafts, media. It also tells the difference between archives, museum, and library.

Unit II: History of development of archives and museums in India with one case study each

This unit examines the history of development of archives and museums in India with one case study each.

Unit III: Collection, documentation, preservation

This unit elaborates upon distinct characteristics of collection. It also examines the concerns which govern its documentation and preservation.

Unit IV: Museum presentation and exhibition

This unit familiarizes students with the way in which museums are organised and managed. It also examines the considerations which govern the way exhibitions in museums are managed.

Unit I: Students will learn about archives and museums; their types, and their advances.

Unit II: Students will grasp the historical development of archives and museums by collectively studying one case study each. They will understand and be able to discuss their significance.

Unit III: Students will understand and closely witness the processes of archiving and preservation in museums. How records and artifacts and collected, classified, and preserved.

Unit IV: In the last unit students will be acquainted to the process of presentation and exhibition of artifacts.

Suggested Readings

- ✓ *Singh, Kavita. (2003). "Museum is National: The Nation as Narrated by the National Museum New Delhi". in Geeti Sen (Ed.). India: A National Culture. New Delhi:Sage.*
- ✓ *Bhattacharya, Sabyasachi. (2018). Archiving the Raj: History of Archival Policy of the Govt. of India with Selected Documents 1858- 1947. Delhi: Oxford University Press*
- ✓ *Agrawal, O. P. (2007). Essentials of Conservation and Museology. Delhi: Sundeep.*
- ✓ *Kathpalia, Y. P. (1973). Conservation and Restoration of Archive Material. Paris: UNESCO.*
- ✓ *Mathur, Saloni. (2000). "Living Ethnological Exhibits: The Case of 1886". Cultural Anthropology vol. 15 no.4, pp. 492-524.*
- ✓ *Breckenridge, Carol. (1989). "Aesthetics and Politics of Colonial Collecting*: India at World *Fairs." Comparative Studies in Society and History vol. 31 no.2, pp. 195-216*

Reference Readings

- ✓ *Ambrose, Timothy & Crispin Paine. (1993). Museum Basics. London: Routledge.*
- ✓ *Choudhary, R. D. (1988). Museums of India and their Maladies. Calcutta: Agam Prakashan.*
- ✓ *Mathur, Saloni. India by Design: Colonial History and Cultural Display. Berkeley: University of California.*
- ✓ *Nair, S. N. (2011). Bio-Deterioration of Museum Materials. Calcutta: Agam Prakashan.*
- ✓ *Sengupta, S. (2004). Experiencing History through Archives. Delhi: MunshiramManoharlal.*

Internet Resources

1. Internet Archives https://archive.org/

2. Partition Archives https://in.1947partitionarchive.org/

3. National Museum https://nationalmuseumindia.gov.in/en

Activities to Do

1. Students are expected to collect and catalogue some primary sources by downloading them from internet or getting them photocopied from a local archive or a library.

2. Students are expected to collect and record the details of various museums in their state and others.

Bio-Fertilizers

Course Objectives

- To understand the methods of isolation, propagation, and application of different bacterial, fungal and algal biofertilizers.
- To learn the characteristics of strains of importance for use as biofertilizers and the methods of their cultivation, processing and application.
- To inculcate the knowledge for understanding the concept and procedure of organic farming for sustainable agroecosystem.
- To learn the processing and recycling methods of biodegradable organic wastes of diverse origin and their integration with biofertilizers.
- To learn the techniques and application of composting, vermin-composting and reuse of complex organic maters and method of their agricultural application.

Course Outcomes:

After the completion of the course the students are expected to have

- Knowledge of biofertilizers belonging to different microbial groups and their association with crop plants.
- Skill on isolation, culture, mass propagation and harvesting, processing, storage and marketing of various types of biofertilizers.
- Detailed understanding on the techniques and benefits of organic farming following green manuring and organic manure application.
- Knowledge on the nutritional advantage of the application of biofertilizers and the field doses of various biofertilizers for nitrogen and phosphorus nutrition.
- Skill to properly compost the organic wastes of various complexity and use of the compost on crop field for enhanced yield.

Unit I: LO: Awareness about the microbial groups, preparation and types of biofertilizers

General account about the microbes used as biofertilizer– Rhizobium – isolation, identification, mass multiplication, carrier-based inoculants, Actinorrhizal symbiosis. *Azospirillum*: isolation and mass multiplication, *Azotobacter*: classification, characteristics – crop response to Azotobacter inoculums, maintenance and mass multiplication.

Unit II:
LO: Knowledge on isolation, culture, harvesting, processing, storage and marketing of biofertilizers

Cyanobacteria (blue green algae), *Azolla* and *Anabaena azollae* association, nitrogen fixation,factors affecting growth, blue green algae and *Azolla* in rice cultivation.

Unit III: LO: Understanding the nutritional advantage of various biofertilizers

Mycorrhizal association, types of mycorrhizal association, taxonomy, occurrence and distribution, phosphorus nutrition, growth and yield – colonization of VAM – isolation andinoculum production of VAM, and its influence on growth and yield of crop plants.

Text Books:

- ✓ *Mahendra Rai, (2006). Hand book of Microbial Bio-fertilizers. CRC Press.*

ReferenceBooks:

- ✓ *Dubey, R.C., 2005 A Text book of Biotechnology S. Chand & Co, New Delhi.*
- ✓ *Kumaresan, V. 2005, Biotechnology, Saras Publications, New Delhi.*
- ✓ *John Jothi Prakash, E. 2004. Outlines of Plant Biotechnology. Emkay Publication,New Delhi.*
- ✓ *Sathe, T.V. 2004 Vermiculture and Organic Farming. Daya publishers.*
- ✓ *Subha Rao, N.S. 2000, Soil Microbiology, Oxford & IBH Publishers, New -Delhi.*
- ✓ *Vayas, S.C, Vayas, S. and Modi, H.A. 1998 Bio-fertilizers and organic. Farming Akta Prakashan, Nadiad*

Pravin Chandra Dwivedi. (2008). Biofertilizers. Pointer Publishers.

Life Skills Education

Course Outcomes (COs):

On completion of this course, the learners will be able to:

- Identify career opportunities in consideration of their own potential and aspirations.
- Gain self-competency and confidence.
- Participate in simulated interview.
- Analyse the role of digital literacy in professional life.
- Develop interpersonal skills and adopt good leadership behaviour for self-empowerment and the empowerment of others.
- Demonstrate a set of practical skills such as time management, self-management, conflicts management, team leadership etc.
- Understand the importance of values in individual, social circles, career path and national life.

Course Contents

CO: *Familiar with the concept of Life Skills.*

Unit I: Introduction to Life Skills Education.

- Concept, need and objectives of life skills education.
- Recommendations of WHO and UNICEF over the years.
- Four Pillars of Education - Learning to Know, Learning to Do, Learning to Be, Learning to Live Together.

Unit II: Social Skills

CO: *Communicate efficiently and develop good interpersonal skills.*

CO: *Use social digital platforms efficiently.*

- Communication skill-types of communication, barriers to communication, strategies for effective communication.
- Interpersonal skills-determinants, maintaining and sustaining a relationship, conflict resolution.
- Digital literacy and social media-digital ethics and cyber security.

Unit III: **Life Skills for Self-Management and Career Planning**

CO: *Develop awareness about one's own self and plan a career accordingly.*

- Self-awareness-self-concept, self-esteem, time management and empathy.
- Emotional intelligence, social intelligence and spiritual intelligence.
- Choosing a career-sources of career information, preparation of resume, interview facing and group discussion.

Unit IV: Universal Human Values

CO: *Understand the importance of values and develop values for life.*

- Truth, love, compassion and non-violence.
- Constitutional values- justice and human rights.
- Understanding happiness and prosperity correctly- a critical appraisal of the current scenario.

Sample Questions

- What is meant by Life skills? (1 Mark)
- Mention any two life skills as laid down by WHO. (2 Marks, Within 50 words)
- Define Communication. Discuss strategies for effective communication. (5 Marks, Within 300 words)
- Critically reflect on Four Pillars of Education. (8 Marks, Within 500 to 800 words).

Mode of Course Transaction: Seminar, Team Teaching, Dialogue, Peer-Teaching, Collaborative and Cooperative Learning, Field Trip, Concept Mapping, Self-Learning.

Activities

Each student will be required to prepare and submit a report on any one of the following:

- Prepare a report on the implications of any two pillars of education in developing life skills education in India.
- Examine the opportunities and challenges in application of life skills education and write a report.
- Conduct a semi structured interview on parents exploring the challenges of parenting and life skills needed for effective parenting. Compare the gender difference of parenting.
- Conduct Case study on life history of great personalities who contributed towards universal values.

Suggested Readings

- ✓ *Dahama O.P., Bhatnagar O.P, (2005). Education and Communication for Development (2nd Edn.). New Delhi: Oxford & BH Publishing Co. Pvt. Ltd.*
- ✓ *Hendricks, P.A.* Developing Youth Curriculum Using the Targeting Life Skills Model: Incorporating Developmentally Appropriate Learning Opportunities to Assess Impact of Life Skill Development *(Iowa State Extension Publication 4H-137A, 1998). Ames, IA: Iowa State University.*
- ✓ *Konar, N. (2011). Communication Skills for Professionals (Second Edition). New Delhi: PHI Learning Private Limited.*
- ✓ *Mangal, S.K. ,and Mangal, U.(2014). Essentials of Educational Technology, PHI Learning Pvt. Ltd. 3.*
- ✓ *Sampath, K, A., Panneerselvam, S.S. (2007).Introduction to Educational Technology. Sterling Publisher Pvt. Ltd.*
- ✓ *Verma, S. Development of Life Skill-II, Vikas Publishing House.*
- ✓ *http://www.unesco.org*
- ✓ *http://www.unicef.org*
- ✓ *http://www.un.org*
- ✓ *http://www.who.int/en/*

Mushroom Cultivation

Course Objectives:

- To study about types, nutritional and medicinal value of edible mushrooms and the toxicity of Poisonous Mushrooms.
- To learn the Cultivation Technology of edible mushrooms and its regulating factors.
- To know about short-term and long-term storage of mushrooms and their products.
- To understand the Cost benefit ratio - Marketing in India and abroad.

Course Outcomes:

On completion of the course the students shall

- Have knowledge about the importance for integrating mushroom as an alternate nutritive food. Mushrooms.
- Have knowledge and skills for Cultivation of edible mushrooms.
- Know about the edible mushrooms available in India and their processing and storage methods.
- Have an understanding about the Low-cost cultivation Technology of edible mushrooms and adoption of mushroom cultivation as a profitable entrepreneurship.

Unit I:

LO: The students know about the nutritional and medicinal value of edible mushrooms and the toxicity of Poisonous Mushrooms.

Introduction, history. Nutritional and medicinal value of edible mushrooms; Poisonous mushrooms. Types of edible mushrooms available in India - *Volvariella volvacea, Pleurotus citrinopileatus, Agaricus bisporus*. Cultivation Technology: Infrastructure: substrates (locallyavailable) Polythene bag, vessels, Inoculation hook, inoculation loop, low-cost stove, sieves, culture rack, mushroom unit (Thatched house) water sprayer, tray, small polythene bag.

Unit II: LO: The students will know the Cultivation Technology of edible mushrooms.

Pure culture: Medium, sterilization, preparation of spawn, multiplication. Mushroom bed preparation -paddy straw, sugarcane trash, maize straw, banana leaves. Factors affecting the mushroom bed preparation - Low-cost technology, Composting technology in mushroom production.

Unit III:

LO: The students know about the short-term and long-term storage of mushrooms and their products.

Storage and nutrition: Short-term storage (Refrigeration – up to 24 hours) Long term Storage (canning, pickles, papads), drying, storage in salt solutions. Nutrition - Proteins - amino acids, mineral elements nutrition - Carbohydrates, Crude fiber content - Vitamins.

Practical:

1. Preparation of spawn, mycelium culture (paddy mushroom)
2. Raw materials of mushroom bed preparation
3. Treatment of raw materials for sterilization
4. Composting technology in mushroom production
5. Storage, packaging and nutrient analysis of mushroom

Text Books:

- ✓ *B. C. Suman and V. P. Sharma. (2007). Mushroom Cultivation in India. DayaPublishing House, New Delhi.*

Reference Books:

- ✓ *Marimuthu, T. Krishnamoorthy, A.S. Sivaprakasam, K. and Jayarajan. R (1991) Oyster Mushrooms, Department of Plant Pathology, Tamil Nadu Agricultural University, Coimbatore.*
- ✓ *Swaminathan, M. (1990) Food and Nutrition. Bappco, The Bangalore Printing andPublishing Co. Ltd., No. 88, Mysore Road, Bangalore - 560018.*
- ✓ *Tewari, Pankaj Kapoor, S.C., (1988). Mushroom cultivation, Mittal Publications,Delhi.*
- ✓ *Nita Bahl (1984-1988) Hand book of Mushrooms, II Edition, Vol. I & Vol. II.*
- ✓ *Anon. (2010). The Cultivation of Mushrooms - An Outline of Mushroom Culture,Read Book Design, New Delhi*

Organic Farming

Course Objectives:

- To understand about organic farming and its significance in modern day of farming
- To learn the characteristics features of organic farming and its difference from traditional method of farming.
- To learn about government promotions and beneficial role of organic farming towards farmers.

Course Outcomes

After the completion of the course the students are expected to have

- Knowledge of organic farming and its need and prospect in modern day farming.
- Learn about the organic farming and its relevance with the sustainability, biodiversity and ecological balance.
- To get idea on the government policies on organic farming

Unit I:

LO: The students will learn about the concept of organic farming and its relevance with modern day farming.

- Definition need and scope of organic farming, Relevance to modern agriculture. Difference between organic and conventional farming practices.
- Modern farming practices – Permaculture, biodynamic farming.
- Organic farming – perspective in Odisha and India. Global status of organic farming. Future prospects of organic farming - advantages and barriers.

Unit II:

LO: Learners will learn about government initiative and promotions. They will learn about organic fertilizers used in organic farming.

- Governmental initiative on promotion of organic farming in India - policies and success stories. Marketing and export potential of organic products – impact on national economy Organic nutrient sources and their fortification, Nutrient management in organic farming
- Green Organic manures – methods of preparation of green manures, impact of green. manures towards organic farming.
- Biofertilisers – types, methods of application – benefits and limitations

✓ *Dabbert, S., Haring, A. M., & Zanoli, R. (2004). Organic farming: policies and prospects. Zed*

Unit III:
LO: The students will learn about the methods of controlling pest and diseases during organic farming. Also, they will learn about bioformulations for better organic farming

- Disease management, weed management and insect management under organic farming. Use of biological methods for pest and disease management
- Use of plant-based formulations for disease management – Use of neem extracts, seed kernels and other natural non-chemical-based formulation for management of diseases and pest for organic farming

Text Books:

Maliwal, P. L. (2020). Principles of Organic Farming: Textbook. Scientific Publishers.

Reference Books:

✓ *Somasundaram, E., Nandhini, D. U., & Meyyappan, M. (2021). Principles of organic farming. CRC Press.*
✓ *Das, S., Chatterjee, A., & Pal, T. K. (2020). Organic farming in India: a vision towards a healthy nation. Food Quality and Safety, 4(2), 69-76*
✓ *books.*

Personality Development

Unit I Personality Development, Decision Making and Communication: Personality Development - Concept; Skills and Value orientation of personality development; stages of personality development; factors affecting personality development; personality traits; Concepts - Creativity: Attitudes and Etiquettes.

Unit II Managing Self - Mind and Motivation, Managing Self - Mind, Body and Soul;. Conflict - meaning, reasons and consequences. Conflict Resolution: Need and various approaches and institutions

Text Books:

- ✓ *Adair, John (2009); Effective Communication (Revised Edition), Pan MacMillan: London*
- ✓ *Ajmani, J C (2012); Good English: Getting it Right, Rupa Publications: New Delhi*
- ✓ *Andrews, Sudhir (1988); How to Succeed at Interviews (21st Reprint), Tata McGraw Hill: New Delhi*
- ✓ *Becker, Ethan F. and Wortmann, Jon (2009); Mastering Communication at Work: How to Lead, Manage, and Influence? McGraw Hill: New Delhi*

Reference Books:

- ✓ *Heller, Robert (2002); Effective Leadership, D K Publishing: New Delhi*
- ✓ *Hurlock, E. B. (2006); Personality Development (28th Reprint), Tata McGraw Hill: New Delhi*
- ✓ *Khan, S R (2014); Personality Development, Ramesh Publishing House: Delhi*
- ✓ *Mile, D. J. (2004); Power of Positive Thinking, Rohan Book Company: Delhi*
- ✓ *Prasad, H. M. (2001); How to Prepare for Group Discussion and Interview, Tata McGraw Hill: New Delhi*

Political Journalism

Course Objective:

Media being the 4th pillar of democracy has vital role to make people vigilant. The strength of democracy to a great extent depends upon the impartiality and autonomy of the media. With the growing commercialisation of the media houses, it actually emerges to be a grave concern across the globe. Media ought to be the watch dog in a democracy making people vigilant and make them informed about the governance. The course attempts to study journalism, the principles underlying reporting. It then reflects on the vested interest and political propaganda which attempts to influence the journalism of the day. It intends to train the learners to develop writing skills in featured articles on political subjects as well as enhance their analytical skills to analyse the prevailing political events.

Learning Outcome:

The course would make the learners informed about the basics of journalising and reporting and its dynamics with respect to politics. The unit wise outcomes are given below:

Unit I: It would introduce the students with the basics of journalism and reporting.

Unit II: The students would be aware of the vested interest and propaganda in influencing the media reports and the funding of media houses.

Unit III: The unit would enhance writing skills of the learners to write feature articles on political issues.

Unit IV: This would enhance the analytical skills of the learners and train them to analyse the political events.

Course Content:

Unit 1: Meaning of Journalism, Ideal principles of Reporting,

Unit 2: Political propaganda and vested interest in Journalism: Yellow journalism and TRP; Funding of media houses, Paid news. Types of Reporting Political issues, Making Posters on Political Issue.

Unit 3: Writing skills for Features articles on political issues.

Unit 4: Analytical skills to analyse the political events.

Essential Readings

1. Maheshwari, S., & Sparks, C. (2021). Political elites and journalistic practices in India: A case of institutionalized heteronomy. Journalism, 22(1), 231-247. https://doi.org/10.1177/1464884918761630
2. McNair, B. (2009). Journalism and democracy. In *The handbook of journalism studies* (pp. 257-269). Routledge.

3. Paul, S. (2018). Between participation and autonomy: Understanding Indian citizen journalists. Journalism Practice, 12(5), 526-542.
4. Udupa, S. (2015). News, Publics and Politics in Globalising India: Media, Publics, Politics. Cambridge University Press.

Additional Reading List:

- ✓ *Bennett, W. L., & Livingston, S. (2018). The disinformation age: Politics, technology, and disruptive communication. Cambridge University Press.*
- ✓ *Curran, J., & Seaton, J. (2018). Power without responsibility: Press, broadcasting and the internet in Britain (9th ed.). Routledge.*
- ✓ *Harrower, T. (2012). Inside reporting: A practical guide to the craft of journalism (3rd ed.). McGraw-Hill.*
- ✓ *Herman, E. S., & Chomsky, N. (2010). Manufacturing consent: The political economy of the mass media. Random House.*
- ✓ *Kovach, B., & Rosenstiel, T. (2014). The elements of journalism: What newspeople should know and the public should expect (3rd ed.). Three Rivers Press.*
- ✓ *Mencher, M. (2011). News reporting and writing (12th ed.). McGraw-Hill.*
- ✓ *Schudson, M. (2011). The sociology of news (2nd ed.). W. W. Norton & Company.*
- ✓ *Sedorkin, G., & McGregor, J. (2002). Interviewing: A guide for journalists and writers. Allen & Unwin.*
- ✓ *Tuchman, G. (1978). Making news: A study in the construction of reality. Free Press.*

Internet Sources:

1. Writers Life Lecture Series: Political Journalism
   https://www.youtube.com/watch?v=StHbMlCucHo
2. Journalism and Politics Lecture | The Evolution of TV News
   https://www.youtube.com/live/-LaiZLigO9M?si=BXBYPhZTSwudGbmw

Activities to Do:

1. Students will be provided with a selection of news reports or articles related to political issues. They will analyze these reports based on the ideal principles of reporting, identifying any instances of yellow journalism, political propaganda, or vested interests. Students will present their findings and engage in a class discussion on the importance of ethical and unbiased journalism.
2. Students will work in groups to create posters on a political issue of their choice. The posters should effectively communicate the issue, raise awareness, and potentially influence public opinion. This activity will encourage critical thinking, creativity, and the ability to convey complex political topics through visual communication.

3. Students will select a political subject of their interest and write a feature article on that topic. The article should be well-researched, informative, and engage the reader while adhering to journalistic writing standards. This activity will develop research skills, writing abilities, and the ability to present complex political issues in an accessible and compelling manner.
4. Students will choose a significant political event (past or present) and conduct an in-depth analysis of the event. They will present their findings to the class, discussing the key players, factors, and implications of the event. This activity will enhance critical thinking,

research skills, and the ability to analyze and communicate complex political events effectively.

Model Questions

1. Which is considered the first newspaper published in India? [1]
2. Briefly explain the term 'yellow journalism'. [2]
3. Critically analyse the TRP Funding of Media Houses and its impact on journalism. [5]
4. Distinguish between 'paid news' and legitimate funding sources for media houses, highlighting the ethical concerns associated with paid news. [8]

Quantitative & Logical Thinking

Course objectives

- To select and apply appropriate methods to solve real world problems;
- To interpret quantitative model and understand a variety of methods of communicating them;
- To improve decision making skills, problem solving skills and setting goals.

Course Outcomes

After completion of the course, learners will be able to

- To apply appropriate methods to solve real world problems,
- To understand various methods to solve the difficulties and communicating thereafter,
- To draw conclusion and / or make decisions based on analysis and critique of quantitative information using proportional reasoning.

Unit –I: Whole numbers, Integers, Rational and irrational numbers, Fractions, Square roots and Cube roots, Surds and Indices, Problems on Numbers, Divisibility; Steps of Long Division Method for Finding Square Roots.

Unit –II: Basic concepts, Different formulae of Percentage, Profit and Loss, Discount, Simple interest, Ratio and Proportion, Mixture, Time and Work, Pipes and Cisterns, Basic concepts of Time, Distance and Speed; relationship among them

Unit –III: Concept of Angles, Different Polygons like triangles, rectangle, square, right-angled triangle, Pythagorean Theorem, Perimeter and Area of Triangles, Rectangles, Circles.

Unit-IV: Analogy basing on kinds of relationships, Simple Analogy; Pattern and Series of Numbers, Letters, Figures. Coding-Decoding of Numbers, Letters, Symbols (Figures), Blood Relations. Logical Statements – Two premise argument, more than two premise argument using connectives; Venn Diagrams, Mirror Images, Problems on Cubes and Dices.

Suggested Readings

- ✓ Skill Enhancement Compulsory Course-II – Quantitative and Logical Thinking (Special Course) – Odisha State Higher Education Council, Bhubaneswar
  (The recommended Books are to be decided by the Board of Studies)

Renewable Energy and Energy Harvesting

Course Outcomes

- Basic understanding of alternative sources of energy.
- Conceptual understanding and importance of solar cell , characterization
- Understating the energy harvesting and its applications using wind and piezoelectric materialCO-4: Understating the electromagnetic energy harvesting and its applications

Unit I

Fossil fuels and Alternate Sources of energy:

Fossil fuels and Nuclear Energy, their limitation, need of renewable energy, non-conventional energy sources. An overview of developments in Offshore Wind Energy, Tidal Energy, Wave energy systems, Ocean Thermal Energy Conversion, solar energy, biomass, biochemical conversion, biogas generation, geothermal energy tidal energy, Hydroelectricity.

Unit II

Solar energy:

Solar energy, its importance, storage of solar energy, solar pond, non-convective solar pond, applications of solar pond and solar energy, solar water heater, flat plate collector, solar distillation, solar cooker, solar green houses, solar cell, absorption air conditioning. Need and characteristics of photovoltaic (PV) systems, PV models and equivalent circuits, and sun tracking systems.

Unit III

Wind Energy harvesting:

Fundamentals of Wind energy, Wind Turbines and different electrical machines in wind turbines, Power electronic interfaces, and grid interconnection topologies.

Piezoelectric Energy harvesting: Introduction, Physics and characteristics of piezoelectric effect, materials and mathematical description of piezoelectricity, Piezoelectric parameters and modeling piezoelectric generators, Piezoelectric energy harvesting applications, Human power.

Unit IV

Electromagnetic Energy Harvesting:

Linear generators, physics mathematical models, recent applications 42 Carbon captured technologies, cell, batteries, power consumption Environmental issues and Renewable sources of energy, sustainability.

Reference Books:

- ✓ *Non-conventional energy sources - G.D Rai - Khanna Publishers, New Delhi*
- ✓ *Solar energy - M P Agarwal - S Chand and Co. Ltd.*
- ✓ *Solar energy - Suhas P Sukhative Tata McGraw - Hill Publishing Company Ltd.*
- ✓ *Godfrey Boyle, "Renewable Energy, Power for a sustainable future", 2004, OxfordUniversity Press, in association with The Open University.*
- ✓ *Dr. P Jayakumar, Solar Energy: Resource Assesment Handbook, 2009*
- ✓ *J.Balfour, M.Shaw and S. Jarosek, Photovoltaics, Lawrence J Goodrich (USA).*
- ✓ *http://en.wikipedia.org/wiki/Renewable_energy*

ଦକ୍ଷତା ବିକାଶମୂଳକ ପାଠ୍ୟକ୍ରମ

Skill Enhancement Course (SEC)

ପ୍ରଥମ ପତ୍ର

ଅନୁବାଦ ସାହିତ୍ୟ

Course Outcome (ପାଠ୍ୟପତ୍ର ଫଳ ଶ୍ରୁତି) :

ଛାତ୍ରଛାତ୍ରୀଙ୍କ ଦକ୍ଷତା ବୃଦ୍ଧି ପାଇଁ ଅନୁବାଦ ସାହିତ୍ୟ ବିଶେଷ ସହାୟକ ହେବ । ଅନୁବାଦର ତାତ୍ତ୍ୱିକ ଦିଗ ସହିତ ଓଡ଼ିଆ ଅନୁବାଦ ସାହିତ୍ୟର ରୂପରେଖ ଏବଂ ଅନ୍ୟ ଭାଷାର ସାହିତ୍ୟକୁ ଓଡ଼ିଆରେ ଅନୁବାଦ କରିବା ତଥା ବିଶିଷ୍ଟ ଓଡ଼ିଆ ରଚନାକୁ ଅନ୍ୟ ଭାଷାରେ ଅନୁବାଦ କରିବା ବିଷୟରେ ଏହି ପାଠ୍ୟପତ୍ରରୁ ବିଦ୍ୟାର୍ଥୀମାନେ ଜ୍ଞାନ ଆହରଣ କରିପାରିବେ।

Unit wise Learning Outcome (ପ୍ରତି ଏକକର ଅଧ୍ୟୟନ ଫଳଶ୍ରୁତି) :

୧ମ ଏକକ : ଅନୁବାଦ କଣ? ତାହାର ସ୍ୱରୂପ କିପରି ? ଅନୁବାଦ କ୍ଷେତ୍ରରେ କେଉଁକେଉଁ ଦିଗପ୍ରତି ସଚେତନ ହେବା ଆବଶ୍ୟକ, ସେହି ଜିଜ୍ଞାସାକୁ ଚରିତାର୍ଥ କରିବ ଶଂସିତ ଏକକଟି ।

୨ୟ ଏକକ : ପ୍ରାଚୀନକାଳଠାରୁ ଆଧୁନିକକାଳ ପର୍ଯ୍ୟନ୍ତ ଓଡ଼ିଆ ଅନୁବାଦ ସାହିତ୍ୟର ଗତିକ୍ରମ ଓ ତାର ବିଶେଷତ୍ୱକୁ ଏଠି ଛାତ୍ରଛାତ୍ରୀ ଅବଗତ ହେବେ ।

୩ୟ ଏକକ : ଓଡ଼ିଶାର ଅନୁବାଦକମାନେ ବିବିଧ ଭାରତୀୟ ଭାଷାର ସାହିତ୍ୟକୁ ଓଡ଼ିଆ ଭାଷାରେ ଅନୁବାଦ କରିଥିବା ଦୃଷ୍ଟିଗୋଚର ହୁଏ । ଏହି ଏକକରେ ବିଦ୍ୟାର୍ଥୀମାନେ ହିନ୍ଦୀ କିମ୍ବା ବଙ୍ଗଳା ଭାଷାର ସ୍ମରଣୀୟ ରଚନାକୁ ଓଡ଼ିଆ ଭାଷାରେ ଅନୁବାଦ କରିବାର ସୁଯୋଗ ପାଇବେ।

୪ର୍ଥ ଏକକ : ଓଡ଼ିଆ ଭାଷାରେ ରଚିତ ସାହିତ୍ୟକୃତିର ଅନୁବାଦ କାର୍ଯ୍ୟ ଅନ୍ୟଭାଷାକୁ ଆଶାନୁରୂପ ହୋଇନାହିଁ । ଏହି ଏକକରେ ହିନ୍ଦୀ କିମ୍ବା ଇଂରାଜୀ ଭାଷାରେ ଓଡ଼ିଆ ସାହିତ୍ୟର ଏକ ଉଲ୍ଲେଖଯୋଗ୍ୟ ରଚନାର କିୟଦଂଶ ଅନୁବାଦ କରିବାର ପ୍ରାବଧାନ ରହିବ ।

ପାଠ୍ୟ ବିଷୟ

୧ମ ଏକକ : ଅନୁବାଦର ସଂଜ୍ଞା ସ୍ୱରୂପ

୨ୟ ଏକକ : ଓଡ଼ିଆ ଅନୁବାଦ ସାହିତ୍ୟ

୩ୟ ଏକକ : ଅନ୍ୟଭାଷାର ସାହିତ୍ୟ : ଓଡ଼ିଆ ଅନୁବାଦ
(ହିନ୍ଦୀ କିମ୍ବା ବଙ୍ଗଳା)

୪ର୍ଥ ଏକକ : ଅନ୍ୟ ଭାଷାର ଅନୁବାଦ (ହିନ୍ଦୀ କିମ୍ବା ଇଂରାଜୀ)

ସହାୟକ ଗ୍ରନ୍ଥସୂଚୀ (Book of references):

୧. ଅନୁବାଦ ତତ୍ତ୍ୱ ଓ ପ୍ରୟୋଗ – ସଂ. ମନୋରଞ୍ଜନ ପ୍ରଧାନ, ଓଡ଼ିଶା ବୁକ୍ ଷ୍ଟୋର, କଟକ

୨. ସାହିତ୍ୟ ତତ୍ତ୍ୱ : ପ୍ରାଚ୍ୟ ପାଶ୍ଚାତ୍ୟ – ଜ୍ୟୋସ୍ନାମୟୀ ପ୍ରଧାନ, ଫେଣ୍ଡସ୍ ପବ୍ଲିଶର୍ସ, କଟକ

୩. ଗବେଷଣା ଅନୁବାଦ ସମ୍ପାଦନାକଳା – ନାରାୟଣ ସାହୁ, ସତ୍ୟ ନାରାୟଣ ବୁକ୍ ଷ୍ଟୋର

୪. ଅନୁବାଦ କଳା : ପରିସୀମା ଓ ପୁରୋଦୃଷ୍ଟି – ସଂ ସଂଘମିତ୍ରା ମିଶ୍ର, ପଣ୍ଡିତ ଶ୍ରୀଧର ଦାସ ମେମୋରିଆଲ ଟ୍ରଷ୍ଟ, ଉତ୍କଳ ବିଶ୍ୱବିଦ୍ୟାଳୟ, ଭୁବନେଶ୍ୱର

ନମୁନା ପ୍ରଶ୍ନ (Sample Questions):

୧. ରତ୍ନାକର ଗର୍ଗବଟୁ କେଉଁ ବିଖ୍ୟାତ ଗ୍ରନ୍ଥର ଓଡ଼ିଆ ଅନୁବାଦକ ? (୧ ମାର୍କ)

୨. ନୀଳକଣ୍ଠଙ୍କ 'ପ୍ରଣୟିନୀ' କେଉଁ କବିଙ୍କ କେଉଁ ଇଂରାଜୀ ରଚନାର ଅନୂଦିତ ରୂପ । (୨ ମାର୍କ)

୩. ହିନ୍ଦୀ ଭାଷାର ରଚନାକୁ ଓଡ଼ିଆ ଭାଷାରେ ଅନୁବାଦ କରିଥିବା ଜଣେ ବିଶିଷ୍ଟ ଅନୁବାଦକଙ୍କ ବିଷୟରେ ଲେଖ । (୫ ମାର୍କ)

୪. ଓଡ଼ିଆ ଭାଷାର କେଉଁକେଉଁ ରଚନା ହିନ୍ଦୀ ବା ଇଂରାଜୀ ଭାଷାରେ ଅନୂଦିତ ତାହାର ବିବରଣୀ ପ୍ରଦାନ କର । (୮ ମାର୍କ)