



**GANDHI MEMORIAL NATIONAL COLLEGE  
AMBALA CANTT.**

**(Affiliated to Kurukshetra University, Kurukshetra)**

**Add-on Courses  
(2022-23)**



## **Add-on Courses**

Keeping in view the market demand for skilled graduates in various fields, Gandhi Memorial National College, Ambala Cantt. introduces several Add-on/Certificate Courses for providing the students participative as well as skill-based education for increasing their employability prospects and preparing them to face the cutthroat competition in the outside world. Based on the analysis of students' feedback, IQAC of the college after detailed discussion with the Principal and Heads of the Departments proposes various Add-on/Certificate courses which are introduced in the college every year for the benefit of the students. The curriculum of these courses is designed in such a way that it provides the students detailed knowledge and skills required to perform real-world job responsibilities and further helps them perform confidently and efficiently at workplace.



## List of Add-on Courses

**Session 2022-23**

Sr. No.	Title of Add-on Course	Course Code	Name of Coordinator
1	Certificate Course on Analyzing Financial Statements	GMNAFS/CC-01	Dr. Anuradha Sheokand
2	Certificate Course on Tally Prime	GMNTP/CC-01	Dr. Surender Kumar
3	Certificate Course on E-Filing of Income Tax Return	GMNEFITR/CC-01	Ms. Jasmita
4	Certificate Course on Application of Statistical Tools in Research	GMNASTR/CC-01	Ms. Reet Kaur
5	Certificate Course on Practical Approach to Case Study Analysis	GMNPACSA/CC-01	Ms. Ramneet Kaur
6	Certificate Course on G. Suite: A Skill Development Initiative	GMNGS/CC-01	Mr. Shyam Raheja
7	Certificate Course on Personality Development	GMNPD/CC-01	Dr. Anupama Sihag and Dr. Amit Kumar
8	Certificate Course on Herbal Gardening	GMNHG/CC-01	Dr. Kuldeep Yadav
9	Certificate Course on Human Values and Ethics	GMNHVE/CC-01	Dr. Saroj
10	Certificate Course in Gender Mainstreaming	GMNGM/CC-01	Dr. Tripti
11	Certificate Course on Mastering Excel: Tour from Beginners to Advance	GMNME/CC-01	Ms. Upinder Kaur
12	Certificate Course on Foundations of Community Engagement	GMNCE/CC-01	Dr. Anish, Dr. Dharamveer Saini & Dr. Saroj
13	Certificate Course on Yoga and Meditation	GMNYM/CC-01	Mr. Brijesh Gupta
14	Certificate Course on Environment and Sustainability	GMNES/CC-01	Dr. Shikha Jaggi
15	Certificate Course in Writing Skills in Communication	GMNWRC/CC-01	Mrs. Kamlesh Kumari
16	Certificate Course on Aadhunik Yug Mein Patrakarita Ka Mahatva	GMNAYMPM/CC-01	Dr. Ritu Gupta
17	Certificate Course on Selling Skills in Retail	GMN SSR/CC-01	Dr. Amita
18	Diploma Course on Selling Skills in Retail	GMN SSR/DC-01	Dr. Bharti Vij
19	Certificate Course on Artificial Intelligence and Machine Learning	GMNAIML/CC-01	Mr. Shyam Raheja
20	Diploma Course on Artificial Intelligence and Machine Learning	GMNAIML/DC-01	Mr. Shyam Raheja
21	Certificate Course in Vedic Mathematics	GMNVM/CC-01	Mrs. Pinki
22	Certificate Course in Business Skill Development	GMNBSD/CC-01	Dr. Ravneet Kaur
23	Diploma Course in Business Skill Development	GMNBSD/DC-01	Dr. Bharti Vij
24	Advanced Diploma Course in Business Skill Development	GMNBSD/ADC-01	Dr. Amita

**CERTIFICATE COURSE**  
**ANALYZING FINANCIAL STATEMENTS**  
**Session 2022-2023**

**Course Syllabus**

**Course Duration: 30 hours**

**Unit-1**

**10 Hours**

Definition and classification of Financial Statements, Objectives, importance and limitations, Tools and techniques for Financial Statement Analysis: Comparative statements, common size statements, cash flow analysis, ratio analysis. Financial statements of a company: Statement of Profit and Loss and Balance Sheet in the prescribed form.

**Unit-2**

**10 Hours**

**Ratio Analysis:** Objectives, classification and computation, Liquidity Ratios. Solvency Ratios, Activity Ratios, Inventory Turnover Ratio, Profitability Ratios

**Unit-3**

**10 Hours**

Cash flow and funds flow statements: Meaning, need and method of preparing statements. Cash flow from Operating activities, Cash flow from Investing activities and Cash flow from Financing activities,

**References**

1. Khan, M.Y. and Jain, P.K.: Financial Management, Tata McGraw Hill, New Delhi.
- 2 Lal, Jawahar. Cost Accounting, Tata McGraw Hill Publishing Co., New Delhi.
- 3 Singh, S. K. and Gupta Lovleen. Management Accounting :Theory and Practice. Pinnacle Publishing House



# Certificate Course on Tally Prime

Duration: 30 Hrs.

## COURSE CONTENTS

### Module 1

Duration: 10 Hrs

1. Chapter: Fundamental Accounting
2. Chapter: Maintaining Chart of Accounts in Tally Prime software
3. Chapter: Maintaining Stock-Keeping Units (SKU)
4. Chapter: Recording Day-to-Day Transitions in Tally Prime software

### Module 2

Duration: 10 Hrs

5. Chapter: Accounts Receivable and Payable Management
6. Chapter: MIS Reports
7. Chapter: Recording Vouchers with TDS

### Module 3

Duration: 10 Hrs

8. Chapter: Recording Vouchers with TDS (Tax Deducted at source) Goods and Services Tax (GST) – Introduction Shortcut Keys Practice

## Certificate course on E-Filing of Income Tax Returns

Duration of the course: 30 Hours

### Syllabus

#### Unit I

General meaning of Income tax return, its types, cases where it's optional or mandatory.

#### Unit II

General meaning of registration, Steps to get registered, Aadhar and PAN card linkage, Login, Account Action, Pending tasks, View 26AS, checking of recent forms filed.

### **Unit III**

Updation of details- Bank account, personnel details, Steps to file itr electronically- personnel information, Income Details, Tax computation, Tax liability/ Refund

### **Unit IV**

Disclaimer by Assesses, View and Download ITR form, E- Verification process via various means, Generation of OTP, Final Submission.

### **Unit V**

Download of Acknowledgment, E-filing of Revised Return.

## **Certificate Course on Application of Statistical Tools in Research**

**Duration of the Course: 30 Hours**

### **SYLLABUS:**

#### **Unit I Sampling and Sample Design**

- Introduction and types of sampling.
- Sampling Methods.
- Point Estimation and Interval Estimation.
- Sampling and Non-Sampling Errors.

#### **UNIT II Hypothesis Testing and Significance**

- Tests in attributes and Variables
- Formulation of Hypothesis
- Procedure of testing a hypothesis
- Significance tests in attributes
- Significance tests in variables (large samples)
- Significance tests in attributes (small samples)

#### **UNIT III**

Parametric tests and their applications in research.

#### **UNIT IV**

Non-Parametric tests and their applications in research.



**Certificate Course**  
**on**  
**Practical Approach to Case Study Analysis**

Duration of the course: 30 Hours

**Unit 1:**

Introduction to Case study analysis:- Meaning, Usage, Difference between case study and case history, Stages to undertake a case study, Potential pitfalls in case study approach

**Unit 2:**

Research Methodology:- Research Design, Techniques used for case studies: Descriptive case studies, explanatory case studies, exploratory case studies, intrinsic case studies, instrumental case studies and collective case studies

**Unit 3:**

Identifying Theoretical Perspective: - Theories- Individual, Organisational and social theories, writing a case study – Methods

**Unit 4:**

Teaching Case Studies: - Mini cases, Macro cases and Integrated Business case studies

**REFERENCES (Suggested Readings)**

Yen, RK (2018) Case Study Research and Applications: Design and Methods 6th edn. Sage Publications, Inc:

Simons, H (2009) Case Study Research in Practice Publications Ltd.

Thomas, G (2011) How to do your Case Study: A guide for Students and Researchers Sage Publications Ltd.

**Certificate Course in G Suite**

**SYLLABUS**

<b>UNIT-I</b>	<b>Introduction of Internet, Web Browsers</b>
<b>UNIT-II</b>	<b>Working with Google Apps</b>
<b>UNIT-III</b>	<b>Google drive's</b>
<b>UNIT-IV</b>	<b>Google Dashboards</b>
<b>UNIT-V</b>	<b>Project work</b>

# Certificate Course on Personality Development

Duration: 30 hours

## Syllabus

### Unit 1

Personality: Theoretical Perspective, definition, types, personality traits, Grooming: Definition, Soft Skills, Tips to improve your personality

### Unit 2

The psychology of attachment, aggression and altruism, developing effective habits, Emotional Intelligence

### Unit 3

Motivation, Introspection, Sigmund Freud: Id, Ego, Superego, Self-esteem, Stress management

### Unit 4 (Practical)

Personality skills, Communication skills, Workplace etiquette, Self-confidence, Body language, Time Management, Building a Positive attitude, Presentation for grading

# Certificate Course on Herbal Gardening

## Syllabus

Duration: 30 Hrs

### Unit: I

#### Introduction

What is Herb Gardening?  
The History of Herb Gardening  
The Benefits of Herb Gardening  
Annual, Perennial and Biennial Herbs

### Unit: II

#### Preparing herbal garden

Medicinal Herb Gardens  
Soil Types  
Indoor & Outdoor Herb Gardens  
Hydroponic Herb Gardening

### Unit: III

#### Pest & Diseases Control, Herbal Remedies

Common Pests and How to Control Them  
Common Plant Diseases  
Herbal Teas  
Aloe Vera



### **Reference books:**

1. The Medicinal Garden: How to Grow and Use Your Own Medicinal Herbs Paperback by Anne McIntyre ISBN: 0805048383
2. Growing and Using Herbs and Spices by Milo Miloradovich; ISBN-13: 9780486250588, Dover Publications
3. The Herbal Home Remedy Book: Simple Recipes for Tinctures, Teas, Salves, Tonics, and Syrups (Herbal Body) Paperback, Storey Publishing, LLC; 1st edition (January 3, 1998), ISBN: 1580170161

## **Certificate Course on Human Values and Ethics**

**Duration of the course: 30 hours**

### **Syllabus**

#### Unit-I

Course Introduction - Need, Basic Guidelines, Content and Process for Value Education

#### Unit-2

Understanding Harmony in the Human Being - Harmony in Myself

#### Unit-3

Understanding Harmony in the Family and Society- Harmony in Human-Human Relationship

#### Unit-4

Social Ethic- The Basics for Ethical Human conduct, Defects in Ethical Human Conduct, Universal Human Order and Ethical Conduct

## **CERTIFICATE COURSE ON GENDER MAINSTREAMING**

**Duration: 30 hours**

### **SYLLABUS**

#### **UNIT-1**

1. Understanding the concept of Gender
2. Social Construction of Gender
3. Gender and defining gender mainstreaming
4. Principles of Gender Mainstreaming

## UNIT-2

1. Gender integration framework
2. Gender analysis
3. Gender Mainstreaming Methods
4. Gender Mainstreaming Tools

## UNIT-3

1. Gender integration framework
2. Gender analysis
3. Gender Advocacy
4. Overcoming Resistance

## UNIT-4

1. Benefits of Gender Mainstreaming
2. Role of the UNO
3. Gender Sensitive Monitoring and Evaluation System
4. Future or the Way Forward

### References:

- Mainstreaming Gender in Development: A Critical Review, Fenella Porter, Caroline Sweetman, Oxfam, 2005
- Gender in the 21st Century, Caroline Sweetman, Oxfam, 2000
- World Bank. Gender and Development pages include Tools for Mainstreaming Gender, Gender Data, Gender issues in various sectors e.g. agriculture, energy, and so on:  
[www.worldbank.org/gender](http://www.worldbank.org/gender)
- Council of Europe, Gender Mainstreaming. Conceptual Framework, Methodology and Presentation of Good Practices. Strasbourg, Council of Europe, May 1998.
- Gender in development: tools for gender analysis and mainstreaming|[www.sdn.org/gender/links/Gender\\_in\\_Development/Tools\\_for\\_Gender\\_Analysis\\_and\\_Mainstreaming/](http://www.sdn.org/gender/links/Gender_in_Development/Tools_for_Gender_Analysis_and_Mainstreaming/) —
- Gender mainstreaming in practice. A handbook| Regional gender programme of the UNDP's regional bureau for Europe and the CIS.  
[www.undp.org/gender/docs/RBEC\\_GM\\_manual.pdf](http://www.undp.org/gender/docs/RBEC_GM_manual.pdf)
- ECOSOC (1997) Mainstreaming the gender perspective into all policies and programmes in the UN system, Report of the Secretary-General, Economic and Social Council.
- UNDP (1997) Guidance note on Gender Mainstreaming,  
[www.undp.org/gender/policies/guidance.html](http://www.undp.org/gender/policies/guidance.html) Razavi & Miller (1995)
- Gender Mainstreaming: A Study of Efforts by the UNDP, the World Bank and the ILO to Institutionalize Gender Issues, Occasional Paper No. 4, UNRISD: Geneva.



# **Certificate Course on Mastering Excel: Tour from Beginner to Advance**

**Duration of the course: 30 Hours**

## **Syllabus**

### **Unit 1:**

Advanced Functions - Logical, Lookup and Reference, Statistical, Date and Time  
Outline - Create and use Outlines to summarize worksheet data

### **Unit 2:**

Database Operations - Auto filter and Advanced Filter, Sort Data, Subtotal Command and Subtotal Function

### **Unit 3:**

PivotTables and Pivot Charts - Create and manipulate PivotTables and Pivot Charts  
Macros - Record and run Macros, Add Toolbar Buttons, View the VBA code

### **Unit 4:**

Consolidate worksheet data - Combine data from different worksheets  
Hyperlinks - Create Hyperlinks to Files, Web pages or to Locations in the workbook

### **REFERENCES (Suggested Readings)**

M.L. Humphrey, Excel for Beginners, Independently Published.

Mike Smart, Learn Excel 2016 Essential Skills, The Smart Method Ltd.

Ian Lamont, Excel Basics In 30 Minutes, 2nd Revised edition, I30 Media Corporation.

# **Certificate Course in Foundations of Community Engagement**

**Duration of the course: 30 Hours**

## **Unit -1**

Introduction of National Service Scheme. NSS: its Objectives Orientation and structure of National Service Scheme (NSS)

## **Unit-2**

The historical perspective of National Service Scheme (NSS)  
National Service Scheme (NSS)- Symbol and its meaning  
National Service Scheme (NSS)- its hierarchy from national to college level

**Unit-3**  
NSS and Social Awareness Programme: Social Evils; Women Empowerment; Communal Harmony.

**Unit-4**

Regular Activities of NSS

1. Shramdaan
2. Blood donation
3. Immunization
4. Plantation
5. Disaster Management
6. Adventure programs.

**References**

- National Service Scheme Manual (Revised) 2006, Government of India, Ministry of Youth Affairs and Sports, New Delhi.*
- University of Mumbai National Service Scheme Manual 2009.*
- Avhan Chancellor's Brigade – NSS Wing, Training camp on Disaster Preparedness Guidelines, March 2012*
- Rashtriya Seva Yojana Sankalpana – Prof. Dr. Sankay Chakane, Dr. Pramod Pabrekar, Diamond Publication, Pune*
- National Service Scheme Manual for NSS District Coordinators, National Service Scheme Cell, Dept. of Higher and Technical Education, Mantralaya.*
- Annual report of National Service Scheme (NSS) published by Dept. of Higher and Technical Education, Mantralaya,*
- NSS Cell, Dept. of Higher and Technical Education, Mantralaya, UTKARSHA- Socio and cultural guidelines*



# Certificate Course in Yoga and Meditation Syllabus

## Theory: CERTIFICATE COURSE IN YOGA + MEDITATION

1. योग परिचय, अष्ट परिभाषा व महत्त्व
2. अष्टांग योग महर्षि पतंजलि के अनुसार
  - I. यम
  - II. नियम
  - III. आसन
  - IV. प्राणायाम
  - V. प्रत्याहार
  - VI. धारणा
  - VII. ध्यान
  - VIII. समाधि

### Practical:

1. ओम् का उच्चारण
2. आसन
  - 48 आसन जिसमें सभी आसनों के लाभ बिल खाते हैं।
3. प्राणायाम
  - I. भस्त्रिका
  - II. अनुत्तम-विलोम
  - III. कपालभाती
4. षट्कर्म
  - I. नेति
  - II. धौति
  - III. फुन्जल (शज्जर्मी)

48 आसनों की सूची निम्न प्रकार से है:-

1. सिद्धासन
2. पद्मासन
3. भद्रासन
4. मुक्तासन
5. स्वास्तिकासन
6. सुखासन
7. वज्रासन
8. सिंहासन
9. कौटुलासन
10. शिवासन
11. भद्रासन

12. तालास
13. वायव्य
14. अर्ध-वायव्य
15. वायव्य
16. पश्चिमोत्तर
17. उत्तर
18. मध्य
19. दक्षिण
20. वायव्य
21. पश्चिम
22. उत्तर
23. दक्षिण
24. उत्तर
25. दक्षिण
26. उत्तर
27. दक्षिण
28. उत्तर
29. दक्षिण
30. उत्तर
31. दक्षिण
32. उत्तर
33. दक्षिण
34. उत्तर
35. दक्षिण
36. उत्तर
37. दक्षिण
38. उत्तर
39. दक्षिण
40. उत्तर
41. दक्षिण
42. उत्तर
43. दक्षिण
44. उत्तर
45. दक्षिण
46. उत्तर
47. दक्षिण
48. उत्तर



## Certificate Course on Writing Skills in Communication

### SYLLABUS

Duration: 30 Hours

**Unit I – Basic Grammar, Vocabulary and Word Formation-** Parts of speech and their function in writing, Active and Passive Voice, Reported Speech, Spotting Error Exercises & Sentence Improvement Exercises.

**Unit II – Writing skills-** Meaning and Importance, Basics of writing skills, Understand pre-writing process & Develop effective Sentences.

**UNIT III –Technical Reading and Writing Practices-** Reading Process and Reading Strategies, Introduction to Technical writing process, Aspects of technical report writing/ Project report writing, Introduction to technical Proposals writing etc.

**Unit-IV-** Writing an Email, Essays, Stories, Writing Applications, Notices, CV Writing, Taking Minutes, Designing a Presentation etc.

#### Suggested Readings

- Nesfield, John Collinson. *Manual of English Grammar and Composition*. Macmillan, 1942.  
Terk, Natasha. *Professional Writing Skills: A Write It Well Guide*. Write It Well, 2010.  
Murphy, Raymonds. *English Grammar in Use*. 4<sup>th</sup> Edition. Cambridge University Press, 1985.

(सर्टिफिकेट कोर्स)

## आधुनिक युग मे पत्रकारिता का महत्त्व

पाठ्यक्रम अवधि: 30 घंटे

### पाठ्यक्रम

#### इकाई-1 पत्रकारिता का अर्थ स्वरूप एवं विकास।

- \* पत्रकारिता: अर्थ, परिभाषा, अवधारणा, उद्देश्य।
- \* पत्रकारिता एवं जनमत।
- \* पत्रकारिता एवं सामाजिक उत्तरदायित्व।
- \* पत्रकारिता एवं सरकार।

## इकाई-2 समाचार संकलन एवं लेखन।

\* समाचार: अर्थ, परिभाषा, तत्व, स्रोत।

संवादाता: एक अच्छे संवादाता के गुण, प्रकार।  
रिपोर्टिंग के प्रकार-अपराध, खेल, विज्ञान, आर्थिक, ग्रामीण, युद्ध एवं संघर्ष, सिनेमा, राजनीतिक, सभा एवं संगोष्ठी, उत्सव समारोह।

## इकाई-3 इलेक्ट्रॉनिक माध्यम: रेडियो, टीवी, फिल्म इंटरनेट।

\* भारत में रेडियो का इतिहास और विकास।

\* भारत में टेलीविजन का इतिहास और विकास।

\* भारत में सिनेमा का इतिहास और विकास।

\* सिनेमा में कार्यरत संस्थाएं—



## इकाई-4 विकास पत्रकारिता।

- \* विकास: अर्थ, परिभाषा, अवधारणा।
- \* विकास पत्रकारिता और सरकार, विकास पत्रकारिता और ग्रामीण,  
विकास पत्रकारिता और सामाजिक परिवर्तन।

## सहायक ग्रन्थ-

मास कम्युनिकेशन

- \* नंदकिशोर त्रिखा:
- \* डेनिस मैक्टिल: थ्योरी: एन इंट्रोडक्शन
- \* समाचार संकलन और लेखन।
- \* प्रोफेसर सुरेंद्र तिवारी: भारतीय नया सिनेमा।  
रामचंद्र तिवारी: संपादन के सिद्धांत
- \* डॉक्टर अनिल कुमार उपाध्याय: पत्रकारिता एवं विकास संचार।  
एम एल झींगरण: विकास का अर्थशास्त्र।

### Certificate Course in Selling Skills in Retail

Duration: 30 Hours

#### COURSE STRUCTURE

<b><u>MODULE -1</u></b>	Introduction to retailing, concepts in retailing, organised and unorganised retail. Growth of Retail sector in India
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<b><u>MODULE -2</u></b>	Basics of sale, Importance of selling. Qualities of an effective sales person. Concept of selling. Art of prospecting, art of conversion, basic etiquettes and mannerism.
<b><u>MODULE -3</u></b>	Role of product knowledge in the selling. Knowledge of market trends and competition. Art of objection handling. Role of ethics in selling.
<b><u>MODULE -4</u></b>	Billings counter management, display management, collection of customer information, inventory management.
<b><u>MODULE-5</u></b>	ON THE JOB TRAINING

**Suggested Readings:**

1. Kati, Sumit. Retail Selling Skills, Himalaya Publishing House Pvt. Ltd.
2. Pradhan, Swapna. Retailing Management, Tata McGraw-Hill Publishing company Ltd.
3. Gilbert, David. Retail Marketing Management, Pearson Education.
4. Sheikh, Arif.Fatima,Kaneez. Retail Management, Himalaya Publishing House Pvt. Ltd.

## **Diploma Course in Selling Skills in Retail**

### **COURSE STRUCUTRE**

<b><u>MODULE -1</u></b>	Meaning and features of retailing, History of retail, Importance of selling. Role of retailing in Indian Economy, organised and unorganised retail. Principles of retail management.
<b><u>MODULE -2</u></b>	Retail services marketing mix; Basics of sale, Qualities of an effective sales person. Concept of selling. Art of prospecting, art of conversion, basic etiquettes and mannerism; Computer fundamentals in retail. Soft skill, building confidence, developing personality
<b><u>MODULE -3</u></b>	Effective oral and written communication skills, Role of personality and communication in selling. Role of product knowledge in the selling. Role of ethics in selling. Importance of follow-up. Aftersales services and feedback.
<b><u>MODULE -4</u></b>	Store management & operations management: billing counter management, display management, conducting customer survey, collection of customer information, inventory management. Determine the cost used in Retail functions
<b><u>MODULE-5</u></b>	ON THE JOB TRAINING

**Suggested Readings:**

1. Kati, Sumit. Retail Selling Skills, Himalaya Publishing House Pvt. Ltd.
2. Pradhan, Swapna. Retailing Management, Tata McGraw-Hill Publishing company Ltd.

3. Gilbert, David. Retail Marketing Management, Pearson Education.
4. Sheikh, Arif. Fatima, Kaneez. Retail Management, Himalaya Publishing House Pvt. Ltd.

## CERTIFICATE COURSE

### ARTIFICIAL INTELLIGENCE & MACHINE LEARNING

**Course Duration: 30 hours**

#### UNIT I

**Artificial Intelligence:** - Introduction to Artificial Intelligence, Understanding of the historical evolution of Artificial Intelligence, Components of AI, Identification of the characteristics of an intelligent system/agent, Turing Test and Advanced Turing test

#### Unit-II:

**Artificial Intelligence Domains:** - Data Science, Computer Vision, NLP

**Expert System:** Components of Expert System: Knowledge Base, Inference Engine, User Interface, Features of Expert System, Expert System Life Cycle, Categories of Expert System, Rule Based vs. Model Based Expert Systems, Advantages/Limitations of Expert System, Developing an Expert System: Identification, Conceptualization, Formalization, Implementation, Testing, Using an Expert System, Application Areas of Expert System.

#### Unit-III

**Machine Learning:** - About Machine learning, Applications of ML, Real World Examples of Machine Learning

**Natural Language Processing:** Introduction, Need, Goal, Fundamental Problems in Natural Language Understanding, How People overcome Natural Language Problems

**Types of Machine learning:** - **Supervised learning** (parametric/non-parametric algorithms, support vector machines, kernels, neural networks).

**Unsupervised learning** (clustering, dimensionality reduction, recommenders systems, deep learning).

**Reinforcement learning**



#### Unit-IV

Best practices in machine learning, innovation process in Machine learning and AI).

#### References:-

1. Russell, S. y Norvig, P.: "Artificial Intelligence, a modern approach", Ed. Prentice Hall, 1995
2. Nilsson, N.J.: "Artificial Intelligence, a new synthesis", Ed. Morgan Kaufmann Publishers, 1998
3. Christopher Bishop, "Pattern Recognition and Machine Learning, illustrated Edition, Springer, 2006"

### DIPLOMA COURSE

### ARTIFICIAL INTELLEGEANCE & MACHINE LEARNING

**Course Duration: 30 hours**

#### UNIT I

**Advanced Artificial Intelligence:** - CNN, ANN, Python, NLP

#### Unit-II:

**Artificial Intelligence Domains:** - Data Science, Computer Vision, NLP

#### Unit-III

**Machine Learning:** - Techniques in Machine learning, Models of ML, Real World Examples of Machine Learning

**Natural Language Processing:** Use in Corporate sector NLP,

#### Unit-IV

Best practices in machine learning, innovation process in Machine learning and AI).

#### References:-

1. Russell, S. y Norvig, P.: "Artificial Intelligence, a modern approach", Ed. Prentice Hall, 1995

2. Nilsson, N.J.: "Artificial Intelligence, a new synthesis", Ed. Morgan Kaufmann Publishers, 1998
3. Christopher Bishop, "Pattern Recognition and Machine Learning, illustrated Edition, Springer, 2006.

## **Certificate Course in Vedic Mathematics**

Duration: 30 Hours

### **COURSE STRUCTURE**

#### **Section I:**

Introduction, historical and cultural aspects, vertically and crosswise sutra, algebraic products, addition and subtraction using the vinculum, multiplying with group of figures, decimal numbers, argumental division, reciprocals, squaring and square roots, combined arithmetic operations, sum of squares, combined addition and division

Evaluation of determinants, reducing the order of determinants, evaluation of determinant by row operations, evaluation of determinant by column operations, the solution of simultaneous linear equations, elimination of one and two variables.

#### **Section II:**

Inversion of matrices, minors and co-factors, method to calculate inverse of matrices, curve fitting, exact curve fitting, regression, least squares quadratic regression of  $y$  on  $x$ , regression line of third degree, evaluation of logarithms and exponentials

Transformations of equations, Change of roots of equations, to obtain an equation with roots opposite in sign from given equation, equation with reciprocal roots, multiple roots, equation with increased roots by some value, equation with reduced roots.

#### **Section III:**

Evaluation of sine and cosine functions for any angle, inverse sine, inverse cosine, inverse tangent function, hyperbolic functions, polynomial equations, equation with roots between 1 and -1, sine and cosine expansion series

Introduction to transcendental equations, solution of transcendental equations, cube roots, solution of cubic equations, solution of higher order equations.

#### **Section IV:**

Introduction to functions, functions of polynomials, division of two polynomial functions, reciprocal of function, square root of function, cube root and fifth root, powers of function, natural logarithms and exponentials of polynomial, cosine and sine of polynomial, Function

with two variables, square and square roots of bipolynomials, division, powers of  $P(x,y)$ , natural logarithms and exponentials of  $P(x,y)$ , sine and cosine of bipolynomial.

Introduction to differential equations, linear and non linear differential equations, degree and order of differential equations, solutions of linear and non linear differential equations, integro-differential equations, solution of integro-differential equations, Introduction to partial differential equations, solution of partial differential equations.

**Reference Books :**

1. A.P Nicholas, K.R. Williams and J. Pickles; Vertically and Crosswise applications of the Vedic Mathematics Sutra, Inspiration Books Publication, 1984.
2. Swami Bharati krsna Tirthaji; Vedic Mathematics.

**CERTIFICATE COURSE IN BUSINESS SKILL DEVELOPMENT**

**SYLLABUS**

Theory Paper: 40MM

Practical: 60MM

Unit-I

COMMUNICATIVE GRAMMAR

A. Lexis: -

Idioms & Phrases, one word substitute, Spotting errors, Para jumbles, confused words, comprehensives.

B. Communication: -

Introduction to verbal and nonverbal communication

Principles of effective communication-Effective listening

UNIT-II

WRITTEN COMMUNICATION

A. Writing skills, Dialogue writing, Interpreting Pictures.

B. Technical writing

Business Letters

E-mail Writing.



PRACTICAL PAPER

MM-

60

Developing Speaking & Listening Skills Through

1. Role Play Activities
2. Practicing Short Dialogues
3. Group Discussions
4. Debates
5. Speeches/Extempore
6. Listening to News Bulletin
7. Viewing & Reviewing TV Programmes.

**Diploma Course in Business Skill Development**  
**SYLLABUS**

Theory: 40 marks

Practical: 60 Marks

Theory

M.M – 40

- A. Business Communication – Its Forms, Practices
- B. Self-Development & Communication
- C. Effective Presentation Skills – Verbal & Non – Verbal

Practical

M.M – 60

Developing speaking & listening skills through

- 1) Group Discussion
- 2) Debate
- 3) Extempore

- 4) PPT Presentation
- 5) Interview
- 6) Management Games

## **Advanced Diploma in Business Skill Development**

### **SYLLABUS**

Theory: 40 marks

Practical: 60 Marks

Theory

M.M – 40

**Note:** Four questions of ten marks each. All questions shall be compulsory

- A. Writing Skills: Paragraph Writing, Report Writing, Letter Writing, E-Mail Writing
- B. Listening Skills: Emphasis will be placed on Effective Listening Skills.
- C. Interview Skills: Emphasis shall be laid on facing the interview

Practical

M.M – 60

Developing speaking & listening skills through

1. Role Playing Activities
2. Group Discussions
3. Debates
4. Speeches / Extempore
5. Interview
6. Interpreting news reports

