

Maharaj Vinayak Global University, Jaipur

Syllabus Ph.D. Course Work-Advances in Biochemistry

Unit 1

1. Microbial taxonomy: Approaches for identification up to species level (Principles and methods)
2. Advances in protein techniques (purification and characteristics)
3. Molecular diagnostic techniques for genetic disorders.

Unit II

4. Bioremediation: Microbial and phytoremediation.
5. Effluent analysis: Sample collection, storage, physic-chemical and biological method of analysis.
6. Industrial enzymes: Amylase, protease, laccase, lipases.

Unit III

7. Nano biotechnology: Concept and applications.
8. Secondary metabolites: Natural products, isolation, purification, characterization and application (alkaloid, tannins, flavonoids)
9. Nutraceuticals: Concept, types, sources, production and application.

Unit IV

10. Plant transformation methods including tissue culture, non-tissue culture based, Agrobacterium mediated co-cultivation, plant vectors, particles bombardment.
11. Proteomics including recognition, sequencing, identification, differential analysis, identity, fading etc.
12. Plant pathogens/ microbe/ insect interaction, plant defense proteins such as AI, PI, lectins, defensins ,abiotic stress tolerance in plants.

Unit V

13. Biotransformation reactions.
14. Signal transduction: Nerve cell structure, Synaptic transmission at nerve muscle and central synapse secondary messengers mediated synaptic transmission.
15. Bioinformatics and database (protein and nucleotide)
16. Fermentation technology and downstream processing.

Reference:

1. Fundamentals of enzymology-Price Stevens
2. Physical Biochemistry-Frifelder
3. Microbiology-Pelczar
4. Microbiology –Brock
5. Molecular Biology and Cell-Bruce Albert's
6. Principles and Techniques of Biochemistry-Wilson and Walker
7. Principles of neural sciences- Kandal, Schwartz
8. Principles of Toxicology-casarett and Doull
9. Plant cell tissue and organ culture-Gambaz Phillips
10. Nutrition and Food processing-Miller
11. Principles of fermentation technology-Stanbary and Whitaker
12. Related Research and Review articles can also be referred.



MAHARAJ VINAYAK GLOBAL UNIVERSITY

Ph.D. BT: 1002 – ADVANCES IN BIOTECHNOLOGY

Unit 1: Molecular Cloning

Vectors in Molecular Biology- Modifying Enzymes-Polymerase chain reaction- DNA/Protein sequencing Mutagenesis –Transposable Element-Rrna/ Genomic/Cdna Library construction and screening-Map based cloning

Unit II: Cloning in Microorganisms

Cloning Techniques Cloning in E-coli- Cloning in Bacillus subtilis- Cloning in Yeast. Specialized vectors: Artificial chromosome. Operons-Expression of cloned genes-site Directed mutagenesis fusion proteins-Degradeative plasmids.

Unit III: Cloning in higher Organisms

DNA mediated transformation, Gene transfer by viral transduction, Genetic manipulation of mammals- DNA transfer to other vertebrates- Gene transfer in plants- Direct and indirect gene delivery systems-plant viruses as vectors.

Unit IV: Applications of Genetic Engineering

Nucleic acid sequences as diagnostic tools-New drugs/ Therapies for genetic diseases combating infectious diseases-Protein engineering-Metabolic Engineering-Molecular Breeding of plants-Production of interferon's-DNA vaccines

Unit V: Recent advances in Biotechnology

DNAi Protein micro arrays- DNA/Protein Markers-DNA finger printing-Gene knockout- RNAi and Gene silencing- Metagenomics, Stem Cell Technology: Types of stem cells, Manipulations of stem cells and applications, Bio-ethics and IPR

Reference Books:

1. Bowtell, D and Sembrook, J. DNA Microarrays: A Molecular cloning manual. CSHL press
2. Glick, BR., Pasternak, JJ (1998) Molecular Biotechnology: Principles and Applications of recombinant DNA, ASM Press.
3. Grandi, G (2004) Genomics, Proteomics and Vaccines. Wiley press.
4. Hannon, GJ, RNAi: A guide to gene silencing. CSHL Press
5. Kirby, LT (1990) DNA finger printing: An introduction, Stockton press.
6. Lewin, B (2004). Genes V III. Person P-renceH all Press.
7. Primrose, S.8, Twyman, R.M., Old R.W. (2001) Principles of Gene Manipulation Blackwell Science Limited.

Ph.D. COURSE WORK SYLLABUS OF BOTNY

Unit-I

Research in Biology, Biological problems and assumption, Search of research problems, Reference and literature search, Records and presentation of data. Biological literature, Technical papers, Abstracts, Reprints and other literature. Rules for maintaining the Bio safety in the laboratory.

Unit-II

Principle and Application: Microscope, Incubator, Hot Air Oven Laminar flow Soxhlet, Spectrophotometer, Colorimeter, pH meter, B.O.D... Centrifuge, Electrophoresis, Microtome, Electronic balance, Chromatography, Cryotomy, staining microphotography.

Unit-III

Field survey, Plant Collection and Identification, Key Preparation. Conservation techniques for Plant material. Biochemical and phytochemical Techniques, Soil and Water analysis.

Unit-IV

Biostatistics: Mean, Median, Mode, Histogram, Frequency curve, Frequency Polygons, standard Deviation and Standard Error, Normal & Binomial Distribution, Test of Significant Based on large and Small sample(t-test, Chi-Square test) ANOVA Basics of correlation and regression analysis.

Unit-V

Computer Application: Basic Idea of computer,(MS world, power point, excel.)
Bioinformatics: definition, role and limitation, Biological Data type. Classification of biological data base sequence data base, Gene bank swiss-proy. Secondary nucleotide and protein sequence data base, CUTG, PROSITG, specialized data base:



MAHARAJ VINAYAK GLOBAL UNIVERSITY

Semester I

Advanced Chemistry

Course code: Ph.D. Ch 1002

100marks

UNIT-I

INFRARED AND MICROWAVE SPECTROSCOPY: Molecular vibrations, force constants, Molecular vibration and absorption of Infrared radiation Raman Spectroscopy, polarized Raman lines, Use of symmetry considerations to determine the no. of lines in IR and Raman Spectra, Infrared spectroscopy. Microwave spectroscopy- Basic concept, rotation spectra of simple inorganic compounds, Classification of molecules, rigid rotor model, Application of Micro wave Spectroscopy

UNIT-II

NMR & ESR SPECTROSCOPY: ^1H NMR-Basic principles of NMR experiment, CW and FT NMR chemical shift- chemical and magnetic equivalents-homotopic, enantiotopic relationship- coupling constants-germinal, vicinal and long range coupling constants-criteria for 1 order and non-first order spectra-factors influencing proton chemical shift and vicinal proton coupling constants- Karplus ^1H NMR Spectra of some organic molecules spin decoupling – Nuclear Overhauser effect Chemical exchange. ^{13}C Chemical shift, Advantages over PMR and applications.

Electron Spin Resonance Spectroscopy: - Introduction to ESR, technique of ESR, interaction between nuclear spin and electron spin: hyperfine splitting, calculation and energies of Zeeman levels, ESR spectrum when one electron is influenced by a single proton and one electron delocalized over two equivalent protons, difference between ESR and NMR.

UNIT III

INSTRUMENTAL METHODS OF ANALYSIS.

Thermal Analysis and Polarography: Theory, methodology and application of thermogravimetric analysis (TGA), Differential Thermal Analysis (DTA), and Differential scanning calorimetry (DSC), Principles, techniques and application of thermometric titration methods.

Origin of polarography, Current-voltage relationship, Theory of polarography waves (DC and sampled DC (test) polarograms), Instrumentation, Ilkovic equation, Qualitative and quantitative applications.

Electro analysis techniques Principles and application of electrogravimetry, coulometry-coulometry titrations-polarography, amperometry-amperometric titration volumetric-cyclic Voltammetry stripping voltammetry.

Spectroanalytical methods Principles and applications of colorimetry and spectrophotometry Fluorimetry

UNIT IV

CHROMATOGRAPHIC METHODS:

General principle, classification of Chromatographic techniques: Principles of separation and application of Column Paper, Thin layer and Gas chromatography, HPLC, HPTLC, Size exclusions chromatography, Affinity chromatography, Electrophoresis. Instrumentation of HPLC, Preparative and micro pore columns, Reverse phase columns, Mobile phase selection and detectors in HPLC. Instrumentation and application of DCCC.

UNIT V

ENVIRONMENTAL CHEMISTRY

Analysis of environmental samples:-Air Pollution: Air Quality Standards; Sampling;

Monitoring: Analysis of (CO), Analysis of Nitrogen Oxides (NO_x), Aromatic Hydrocarbons in Exhaust, Petrol and Air, Analysis of Particulate Matter, Spectrophotometric Analysis of Gaseous Air Pollutants. **Water Pollution:** Waste Water Treatment; Water Quality Parameters and Standards; Sampling; Preservation; Monitoring; Techniques and Methodology: pH; Chemical Oxygen Demand (COD); Biochemical Oxygen Demand (BOD); Total Carbon (TOC).

Toxicological Chemistry: Introduction Toxicology and Toxicological Chemistry; Teratogenesis, Mutagenesis, Carcinogenesis, Immune System Effects and Reproductive Effects; Health hazards; Toxicology of Inorganic & Organic compounds; Biochemical effects of As, Cd, Hg, Pb and oxides of sulphur and nitrogen.

Green Chemistry: Concept, principles and utility of green chemistry: green reagent, green catalyst. Industrial interest in green chemistry.

Fundamental Laboratory techniques for safety enhancement- Concept of total quality management, requirements of GMP, GLP, GCP, Regulatory requirements of drugs and Pharmaceutical (USFDA)

Books Recommended:

1. Application of Absorption Spectroscopy of Organic Compounds, Prentice Hall **R. Dyer, New Delhi**
2. Spectroscopic Identification of Organic Compounds, 6TH Edition **R.M. Silverstein and F.X. Webster, John Wiley, New York.**
3. Spectroscopic Methods in Organic Chemistry, **D.H. Williams and I.F. Fleming, 4th Edition (1988), Tata-McGraw Hill, New Delhi.**
4. **Organic Spectroscopy by Jagmohan Narosa Publication.**
5. Stahl, E. Thin Layer Chromatography- A laboratory Handbook, Springer-Verlag.
6. Giddings, J.C., Principles and Theory-Dynamics of chromatography, Marcel Dekker.
7. Sethi, P.D., Quantitative Analysis of Pharmaceutical formulations, CBS Publishers, New Delhi.
8. Kemp William, Organic spectroscopy, Pal grave, New York.
9. Gross-Mass Spectrometry.
10. March, J., Advanced Organic Chemistry, Reaction Mechanism and Structure, John Wiley and Sons, New York.
11. Gould, E.S., Mechanism and structure in Organic Chemistry, Holt, Rinewart and Winston, New York.
12. Abraham D.J., ed., Burger's Medicinal Chemistry & Drug Discovery, Vol.-I-VI, John Wiley & sons, New Jersey.
13. Ford M.E., Catalysis of organic reactions, Marcel Dekker Inc., New York.
14. Laszlo Kurti, Barbara Czako, Strategic Applications of Name reaction in Organic Synthesis, Elsevier, Academic Press, New York.
15. WHO – Quality Assurance of Pharmaceuticals, Vol. I, II.
16. Haffmann, Chromatography.
17. Basic Concept of Analysis Chemistry by S.M Khopkar, New Age International, 1998.
18. Fundamentals of analytical chemistry, Douglas A. Skoog, Thomson–Brooks publications.
19. Environmental Chemistry (Vth Edition), By A.K.DE, New Age International Publishers.
20. Environmental Chemistry by Stanley E. Manahan (VI Edition)
21. Gerand guyot – physics of the environment & climate. Willing, S.W., & Stoker. Good Manufacturing Practice for Pharmaceuticals, Marcel Dekker, New York

Ph.D. COURSE WORK IN COMMERCE
COURSE II – MODERN TRENDS IN COMMERCE

MODULE 1

Business environment– economic environment– Political and legal environment– Social and cultural environment– MSME –Globalisation– GATT/WTO and Trade Liberalisation– FDI and FPI–Balance of Payments–Impact of Globalization on Banking and Financial Services.

MODULE 2

Financial management- time value of money-financing decision and capital structure- working capital management –cost of capital- capital budgeting- Leverage analysis- Dividend decisions- Recent development in corporate finance- Indian Financial System-Financial Markets- Financial Institutions- Financial Instruments- Recent Developments in Indian Financial system- Behavioural Finance- Rural Finance.

MODULE 3

Marketing concept and functions- Marketing mix- Market segmentation- Market targeting- Market positioning- Product mix- PLC –Packaging and labelling- Pricing policies and strategies- Logistic and Customer Relationship Management- Consumer Relationship Marketing (CRM).

MODULE 4

Human Resource management- personal management vs human resource management – Human resource planning- Job analysis- recruitment- principles of HRD- factors influencing productivity- Performance appraisal- Role of psychology in HRD and Management- Industrial psychology- Human Relation, Employees morale- Measures to improve morale- Job Satisfaction- Motivation- Theories- Leadership- Group Dynamics.

MODULE 5

Accounting standards- Concept- Convention- International accounting Standards- International Financial Reporting Standards- Analysis of Financial statements- Corporate Government- Accounting for price level changes- Human Resource Accounting- Corporate Restructuring- Financial Re-engineering- Risk Management- Requirements on Capital Adequacy Norms in banks- Assets Quality- NPA.



MAHARAJ VINAYAK GLOBAL UNIVERSITY

Ph.D. Computer Science & Engineering

Syllabus- Advances on Computer Science & Engineering

Unit 1 Data Mining

Basic of data mining, Data mining techniques; Data Algorithms: Clustering, Association rules; Knowledge Discovery: KDD Process; Web Mining: Web Content Mining, Web Structure Mining, Web Usage mining; Application and Trends in Data mining; Integration of a Data Mining System with a Database or Data Warehouse System.

Unit 2 Simulation & its Tools

Analog vs. Digital simulation, continuous & discrete system simulation, Simulation of Hypothetical Computer, Inventory system & corporate system, Simulation of PERT, Generation of uniform & Non-uniform random number, Monte Carlo method, Design of experiment, simulation languages.

Liner Programming: LPP in the standard form Comparison of Simulation and Analytical Methods, Experimental Nature of Simulation, Types of System Simulation.

Unit 3 Software Engineering

Software processes, Requirements Engineering, Architectural design and Implementation, Software Quality Evolution, Security Engineering, Managing Software Engineering.

Unit 4 Soft Computing

Basics of Neural networks, MP Neuron model, Perceptron model, Multilayer feed forward neural network (MLFFNNs), Learning principles: Supervised and unsupervised learning, Error back propagation learning, Feedback neural networks, Hopfield model, Introduction to Fuzzy logic, Fuzzy membership function. Introduction to Genetic Algorithm, Mutation, Crossover, Fitness evaluation methods.

Unit 5 Wireless Networks

Wireless Evolution, Characteristics of Manet, Ad Hoc Network Applications, Importance of QoS AND Energy Efficiency in MANETs, MANET Fundamentals, Routing in Mobile Ad Hoc Networks, Security in Wireless Ad Hoc network.

Unit 6 Graphic & Vision

Raster scan Graphic display: basics, DDA line derivation and algorithm, Bresenham's line derivation and algorithm, Bresenham's Circle and ellipse derivation and algorithm, Scaling Rotation, Translation, Segments, windowing and clipping, 3D Graphics, Image analysis and computer vision: Representation of binary and gray level images. Introduction, spatial features, edge detection techniques, Image Enhancement, Morphological structure.

Reference Books:

- ❖ J. Han, M. Kamber, "Data Mining: Concepts and Techniques", Harcourt India / Morgan Kaufman, 2001.
- ❖ Margaret H. Dunham, "Data Mining: Introduction and Advanced Topics", Person Education 2004.
- ❖ Alex Besson, Stephan J. Smith, "Data Warehousing, Data Mining & OLAP", McGraw-Hill Edition, 2001
- ❖ Paulraj Ponniah, "Data Warehousing Fundamentals", Wiley Interscience Publication, 2003
- ❖ L. Nelson, David Nicol, Discrete-Event System Simulation (4th edition), Prentice Hall, 2005
- ❖ Geoffrey Godon, System Simulation, Second edition, PHI
- ❖ Software Engineering: Ian Sommerville, Pearson edition.
- ❖ Software Engineering: A Practitioner's Approved by Roger Pressman, McGraw-Hill 7th edition.
- ❖ L. Fortune, G. Rozzotto, M. Lavorgna, "Soft Computing: New Trends and Applications", Springer.
- ❖ Ahmad Lotfi, Jonathan Garibaldi, "Application and Science in soft Computing", Springer.
- ❖ Pravir Chawdhary, Raj Kumar Roy, Raj Pant, "Soft Computing in Engineering Design and Manufacturing", Springer.
- ❖ Sudip Mishra Isaac Woungang Subhash Chandra Mishra, Guide to Wireless Ad Hoc Network, Springer-Verlag London Limited 2005.
- ❖ SRIKANTH V. KRISHNAMURTHY, AD HOC NETWORKS Technology and Protocols, Springer Science + Business Media, Inc. Boston 2005.
- ❖ Procedural elements for Computer Graphic: David F. Rogers. McGraw-Hill International edition.
- ❖ Digital Image Processing: Addison-Wesley publishing company- Rafael C. Gonzalez Richard E. Woods.
- ❖ Fundamentals of digital image processing-Anil K. Jain- Prentice-Hall of India-Private Limited.

MAHARAJ VINAYAK GLOBAL UNIVERSITY
Ph.D. (Oral Medicine and Radiology)

Subject Code: 1002

Advance in OMR

Course Contents

UNIT I

Basic with applied aspects

Anatomy

1. Gross anatomy of the Face

2. Neck Region:

3. Oral Cavity:

4. Pharynx:

Gross brain and spinal cord

Study of the cranial nerve nuclei of V, VII, IX, X, XI, XII

Osteology: Comparative study of fetal and adult skull Mandible:

Developments, ossification, age change and evaluation of mandible in detail

Embryology

Histology:

Physiology:

Blood:

Respiratory System:

Cardio- Vascular System:

Gastro- Intestinal tract:

Endocrine System:

Central Nervous System:

Special Senses:

Biochemistry

Pathology:

Neoplasia:

Others:

- Sex linked agamaglobulinemia
 - AIDS
 - Management of Immune deficiency requiring surgical procedures
 - De George's Syndrome
 - Ghons complex, post primary pulmonary tuberculosis – pathology and pathogenesis
- Pharmacology

Computers in oral diagnosis and imagine

Evidence based oral care in treatment planning

Molecular Biology

Ethics in Dentistry

UNIT II

Oral and Maxillofacial Radiology and advanced diagnostic imaging

UNIT III

Oral Medicine, therapeutics and laboratory investigation; recent trends and future prospects

Clinical diagnosis of oral systemic diseases

Laboratory investigation including special investigation of oral and oro – facial Diseases

Early diagnostic modalities in detection of potentially malignant disorders and oral cancer

Teeth in local and systemic diseases, congenital and hereditary disorders

Oral manifestation of systemic diseases

Management of medically compromised patients including medical emergencies in the dental chair

Congenital and Hereditary disorders involving tissues of oro facial region

Systemic diseases due to oral foci of infection

Haematological, Dermatological, Metabolic, Nutritional & Endocrinal condition with oral manifestations

Neuromuscular diseases affecting oro –facial region

Salivary gland disorders

Tongue in oral and systemic diseases

TMJ dysfunction and diseases

Concept of immunity as related to oro facial lesions, including AIDS

Cysts, Neoplasms, Odontomes and fibro – osseous lesions

Oral changes in Osteo – dystrophies and chondro – dystrophies

Pre malignant and malignant lesions of oro facial region

Allergy and other miscellaneous conditions

UNIT IV

Therapeutics in oral medicine – clinical pharmacology: Newer modalities of management

UNIT V

Forensic Dentistry with newer advances and applications

RECOMMENDED READING:-

Burkit- Oral Medicine- J.B. Lippincott Company

Coleman- Principles of Oral Diagnosis- Mosby. Year Book

Jones- Oral Manifestations of systemic Diseases- W.B. Saunders Company

Mitchell- Oral Diagnosis & Oral Medicine

Kerr- Oral Diagnosis

Miller- Oral Diagnosis & Treatment

Hutchinson- clinical methods

Oral Pathology- Shafers

Sonis S.T. Fazio R.C. and Fang L.-Principles and Practice of Oral Medicine

White & Goaz- Oral Radiology- Mosby year Book

Weahrman- Dental Radiology- C.V. Mosby Company

Stafne- Oral Roentgenographic Diagnosis- W.B. Saunders Co.

Derek H. Clark-Practical Forensic Odontology- Butterworth-Heinemann (1992)

Michael Bowers, Gary Bell- Manual of Forensic Odontology- Forensic (1995)

Francis C.M., Medical ethics, second edition 2004, Jaypee Brothers, New Delhi

Ethical guidelines for biomedical research on human subjects, Indian council of medical research, New Delhi 2000s

MAHARAJ VINAYAK GLOBAL UNIVERSITY

Ph.D. (Oral & Maxillofacial Surgery)

Subject Code: 1002
Surgery

Advances in Oral & Maxillofacial

Part I:-

1. Impacted Teeth
2. Diseases of the maxillary sinus
3. Pre- Prosthetic Surgery
4. Tissue Engineering in Oral & Maxillofacial Surgery

Part II:-

1. Disorders of T.M. Joint
2. Infections of the Oral Cavity
3. Benign cystic Lesions of the Jaws
4. Genetics in Oral & Maxillofacial Surgery

Part III:-

1. Salivary gland diseases
2. Jaw Deformities
3. Neurological Disorders
4. Robotics in Oral & Maxillofacial Surgery

Part IV:-

1. Emergency Drugs & Intra muscular I.V. Injections
2. Oral Implantology
3. Fractures of the Jaw
4. Computers in Oral & Maxillofacial Surgery

Part V:-

1. Tumors of the Oral Cavity
2. Botox in Oral & Maxillofacial Surgery
3. Cleft lip & Palate

Recommended Books:-

1. Impacted teeth: Alling John F & Etal
2. Principles of oral and maxillofacial surgery: Vol 1,2 & 3 Peterson LJ & etal
3. Text book of oral and maxillofacial surgery: Srinivasan B.
4. Handbook of medical emergencies in the dental office, Malamed SF.
5. Killeys fracture of the mandible: Bank P.
6. Killeys fracture of the middle 3rd of the facial skeleton: Bank P.
7. The maxillary sinus and its dental implications: Mccovanda.
8. Killey and Kays outline of oral surgery- Part-I: Seward G R & etal.
9. Essentials of safe dentistry for the medically compromised patients: Mc Carthy F.M.
10. Oral & Maxillofacial Surgery, Vol 2: Laskin DM
11. Extraction of teeth: Howe, GL
12. Minor Oral Surgery: Howe, GL
13. Contemporary oral and maxillofacial infections: Topazian RG & Goldberg MH.

HOD Signature

MAHARAJ VINAYAK GLOBAL UNIVERSITY

Ph.D. (Prosthodontics)

Subject code: 1002

Advance in Prosthodontics

Applied Basic Science optional subjects:

- i. Applied Anatomy
- ii. Applied Physiology
- iii. Applied Pathology

Subjects related to different specialties:

1. Bio-statistics
2. Nutrition and Dietetics
3. Teaching and Testing Methodology
4. Research Methodology
5. Applied Chemistry including Metallurgy, Dental Materials.

UNIT-1

1. Effects of aging of edentulous patients
2. Sequelae caused by wearing complete
3. Temporomandibular disorders in edentulous patients
4. Nutrition Care for the denture wearing patient
5. Preparing patient for complete denture patients
6. Pre prosthetic surgery
7. Immediate Denture
8. Over denture
9. Singal Denture

UNIT-2

10. Introduction and Historical Review
11. Biological, clinical and surgical aspects of oral implant
12. Diagnosis and treatment planning
13. Radiological interpretation for selection of fixtures
14. Splints for guidance for surgical placement of fixtures
15. Intra oral plastic surgery
16. Guide bone and Tissue generation consideration for implants fixture.
17. Implants supported prosthesis for complete edentulism and partial edentulism.

UNIT -3

18. Occlusion for implants supports prosthesis
19. Peri-implant tissue and Management
20. Peri-implant and management
21. Maintenance and after care
22. Management of failed restoration.
23. Work authorization for implant supported prosthesis-definitive instructions, legal aspects, and delineation of responsibility.
24. Scope, definition and terminology
25. Components of RPD
26. Education of patient

UNIT-4

27. Diagnosis and treatment planning
28. Design, treatment sequencing and mouth preparation
29. Surveying
30. Support for the Distal Extension Denture
31. Laboratory Procedures
32. Initial placement, adjustment and servicing of the removable partial denture
33. Relining and Rebasing the removable partial
34. Repairs and additions to removable partial dentures

UNIT -5

35. Diagnosis and treatment planning
36. Evolution, diagnosis and treatment of occlusal problems
37. Aesthetic
38. Management of failed restorations and work authorization.
39. Management of Carious teeth
40. Periodontal Consideration
41. Biomechanical principle
42. Isolation and fluid control
43. Restorations of endodontically treated teeth, Stomatognathic Dysfunction and Management
44. Removable partial denture considerations in maxillofacial reconstruction
45. Maxillofacial rehabilitation

References

| S.No. | Author | Title |
|--------------|------------------------|--|
| 1 | Agarwal, Nitin K | Clinical Text on Complete Denature Prosthodontics-1768 |
| 2 | Albers | Tooth-Colored Restorative: Principles & Practice |
| 3 | Anusavice | Sc. Of Dental Material |
| 4 | Arnett | Facial & Dental Planning for Orthodontics |
| 5 | Bartlett | Clinical problem solving in Prosthodontics |
| 6 | Bassi, F | Advances in clinical Prosthodontics |
| 7 | Binu, George | T/B of Complete Denature of Prosthodontics |
| 8 | Block | Implant in dentistry |
| 9 | Branemark | Tissue- Integrated Prostheses |
| 10 | Branemark and Oliveira | Craniofacial Prosthesis : anaplastology |
| 11 | Branemark | Osseointegration in Cranium Reconstruction |
| 12 | Branemark | The Osseointegration Book |
| 13 | Brons , Rijnko | Facial harmony : standards of Orthodontics |
| 14 | Carr, Alan B | Mc Cracken's removable partial Prosthodontics |
| 15 | Cranin | Atlas of Oral Implantology |
| 16 | Deekar | T/b of complete denature |
| 17 | Denissen, H | Atlas of Porcelain Restorations |
| 18 | Fenn, HRB | Clinical Dental Prosthetic, 1077 |
| 19 | Finkbenier, BL | Practice Management for the Dental Team |
| 20 | Gerald, Ubassy | Shape & Colour |
| 21 | Glaswin | Clinical Aspects of Dental Materials |
| 22 | Goldstain | Esthetic in Dentistry |
| 23 | Graber, George | C/ A of Dental Medicine 2 Removable Partial Dentures |
| 24 | Gupta, Renu | Gateway to MDS Ency. of MCQs in Dental V.I & II |
| 25 | Jordon Roelde | Esthetic Composite Banding |

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| 26 | Hatrck | Dental Materials |
| 27 | Heartwell, Charles M | Syllabus of complete Dentures |
| 28 | Hobkirk | Intr. Dental practice |
| 29 | Hopkins | Colour Atlas of Prosthodontics oral surgery |
| 30 | Jose Obs Santos | Occlusion; Principle & Concept |
| 31 | Kakar | Oral Implantology |
| 32 | Lamb, David J | Problema & solutions in Complete denature prosthodontics |
| 33 | Linkow | C/A of Implant Techniques & Implant prosthodontics |
| 34 | Linkow | Implant Dentistry today |
| 35 | Lovely M | Review of removable complete denature |
| 36 | Malone, WFP | Tylmans's Theory & Prec. of fixed Prosthodontics |
| 37 | Manapllil, John | Complete denature Prosthodontics 1771ed.2004 |
| 38 | Mccord | Treatment of Edentulous Patients |
| 39 | Mccracken's | Removable Partial Prosthodontics |
| 40 | Mclayghim Gerald | Direct Bonded Retainer: The Ad. Alternative |
| 41 | Mclayghim Gerald | Direct Bonded Retainer |
| 42 | Mclean | The science and art of dental ceramics |
| 43 | Misch | Contemporary implant dentistry |
| 44 | Nakabayashi | Hybridization of dental hard Tissues |
| 45 | Nallaswamy,D | T/B of Prosthodontics 1753-1762,ed.2003 |
| 46 | Nield, Jill S | Fundamental of Dental Hygiene inst. |
| 47 | O'Brain | Dental Materials & Their Selection |
| 48 | O'Sullivan | Michael Fixed Prosthodontics in Dental Practice |
| 49 | Odell | Clinical Problem solving in Dentistry |
| 50 | Okeson, J P | Management of temporomandibular |
| 51 | Otobe | Oral Implantology |
| 52 | Owall | Prosthodontics, Principle and Mang. Strategies |
| 53 | Poers, Ronald | Restorative Dental Material |
| 54 | Palmer | Implants in Clinical Dentistry |
| 55 | Paravina | Esthetic color Training In Dentt. |
| 56 | Rahn and Heartwell | Textbook of complete dentures |

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| 57 | Raman & Iyer | Going Green: Manual for Waste Mang.for Dental Practioners |
| 58 | Rasmussen | Branemark Sys of Oral Reanstration |
| 59 | Robinson | Ess. Of Dental Assess |
| 60 | Rosenstiel | Contem. Fixed Prosthodontics |
| 61 | Rufenacht | Fundamentals of Esthetics |
| 62 | Salentijin, Letty Moss | Dental & Oral Tissues: An Introduction |
| 63 | Sarment | Manual of Dental Dentistry |
| 64 | Scortecei | Implants & Restorative Dentistry |
| 65 | Shillingburg | Fundamentals of tooth Preparation |
| 66 | Shillingburg | Fundamentals of fixed Prosthodontics |
| 67 | Smitch | Planning & making crown and bridge |
| 68 | Stefanc | Treatment Planning in Dentistry |
| 69 | Stewart, Kinneth L | Clinical Remove. Parf. Prostho |
| 70 | Sullivan Michael | Fixed Prosthodontics in Dental Practice |
| 71 | Straton | An atlas of removable & Prtial Denature Design |
| 72 | Taylor, Thomas D | Clinical Maxillofacial Prosthetic |
| 73 | Tylman | Theory & Practice of fixed Prosthodontics |
| 74 | Winkler, Sheldon | Ess. Of complete denature Prosthodontics |
| 75 | Winstanley, RB | Self-assessment- Prostho |
| 76 | Yacagal | Toppers Notes on Removable & fixed Prosthodontics |
| 77 | Zambito, Black | Hospital Dentistry: Practice & Education |
| 78 | Zerb,George A | Prosthodontics Treatment for Edentulous Patients |
| 79 | Zwemer, TJ | Bunchr's clinical Dental Terminology |
| 80 | Lakshmi | Preclinical manual of conservative dentistry |
| 81 | Miller | Removable Practical Prosthodontics |

MAHARAJ VINAYAK GLOBAL UNIVERSITY

Ph.D. (Periodontology)

Subject Code: 1002

Advances in periodontics

Unit 1

Etiology of Periodontal Diseases.

1. Oral Biofilms
2. Host Bacterial Interaction
3. Pathogenesis of Periodontal Diseases
4. Role of Genetics in Periodontal Diseases
5. Immunology
6. Role of virus in a etiology of Periodontal Diseases

Unit 2

Periodontal Research

1. Advanced diagnostic techniques
2. Advanced in radiographic techniques
3. Tissue engineering
4. Stem cells in Periodontal registration
5. Animal models in Periodontal research
6. Evidence based Periodontal therapy

Unit 3

Periodontal therapy

1. Interdisciplinary approach in management of Periodontal Diseases
2. Periodontal microsurgery
3. Ride augmentation
4. Lasers in Periodontal plastic and aesthetic Periodontal
5. Advances in Periodontal plastic and aesthetic surgery
6. Advances in reconstructive Periodontal surgery

Unit 4

Implants

1. Diagnostic imaging for implants
2. Advanced implants surgical techniques
3. Computer assisted implant surgery
4. Osseo – integration
5. Occlusion and occlusal therapy

Unit 5

Oral – Systemic Link

1. Periodontal Medicine
2. Host Modulation
3. Growth Factors
4. Wound Healing
5. Conscious sedation
6. Nutrition and Periodontal health

Dr. PRAVEEN KUDVA
(HOD, Dept. of Periodontology and Implantology)

JAIPUR DENTAL COLLEGE

Recommended Periodontology & Implantology Text Books

1. Periodontics-Medicine, Surgery and Implant

a. *Author : Rose, Mealey*

2. Periodontics-

a. *Author : Eley and Manson*

3. Clinical Periodontology and Implantology-

a. *Author : Jan Lindhe*

4. Fundamentals of Periodontics-

a. *Author: Wilson and Kornman*

5. Mucogingival Esthetic Surgery-

a. *Author: Giovanni Zucchelli*

6. Plastic- Esthetic Periodontal and Implant Surgery : A Microsurgical Approach

a. *Author: Otto Zuhr and march Hurzeler*

7. Controversial Issues in Implant Dentistry

a. *Author: Fedrico Hernandez Alfaro*

8. Advanced Implant Therapy

a. *Author: Sascha A. Jovanovic*

9. Advanced Implant Therapy- Ridge Augmentation

a. *Author: Sascha A. Jovanovic*

10. Clinical Implantology

a. *Author: Carl Misch*

Department of Oral Pathology

Advanced in Oral Pathology

UNIT I

1. To train a PhD scholar so as to ensure higher competence in both general and special pathology dealing with the nature of oral diseases, their causes, processes and effects.
2. An oral pathologist is expected to perform routine histopathological evolution of specimens relating to oral and perioral tissues, to carry out routine diagnostic procedures including hematological, cytological, microbiological and ultra-structural investigations.
3. He /She is expected to have an understanding of current research methodology, collection and interpretation of data, ability to carry out research project on clinical and or epidemiological aspects, a working knowledge on current database, automated data retrieval systems, referencing and skill in writing scientific papers.

UNIT II

4. He /She are expected to present scientific data pertaining to the field, in conferences both as poster and verbal presentation and to take part in group discussion.
5. Study of principles of routine and special techniques used for histopathology including principles of histochemistry, Immunochemistry, applied and theoretical biochemical basis of histochemistry as related to oral pathology.
6. Advanced histological and histopathological study of dental and oral tissues including embryonic considerations, clinical considerations, biology, histology, pathology, prognosis and management of oral oncology, Concept of oral premalignancy.

UNIT III

7. Study of special and applied pathology of oral tissues as well as relation of local pathology and clinical findings to systematic conditions.
8. Oral microbiology and their relationship to branches of dentistry.
9. Oral microbiology affecting hard and soft tissues. Study of clinical changes and their signification to dental and oral diseases as related to oral pathology.

UNIT IV

10. Forensic Odontology
11. Inter institutional posting such as cancer hospital, dermatology clinics, regional HIV detection centers, sophisticated instrumentation centers for electron microscopy and other techniques.
12. University Dissertation.

UNIT V

13. Specialized histo-techniques and special stains.
14. Special staining techniques for different tissues.
15. Immunohistochemistry.
16. Preparation of frozen sections and cytological smears

Recommended Books:

1. Carter, Roger: The information technology Handbook, London and Henemann, 1987.
2. Jeanne, F.M.A. librarians guide to the internet: A guide to searching and evaluating information, Oxford: Chandos publishing, 2006.
3. Lencheater, F.W. electronic publishing and their implication for libraries and beyond, London, Clive bingley, 1990.
4. Lucy, A Tedd. An introduction to the computer based library system. Ed.3 Chinchester, Wiley, 2005.
5. Richerd Jones. The institutional repository. Oxford, Chandos Publishing, 2006.
6. Vishwanathan. T. Communication Technology. New Delhi, T.M.H. 1995
7. Zorkoczy, Peter: Information technology: An introduction, London Otiman, 2005.
8. Gorman, G.E. Digital factors in library and information services. London: Facet publishing, 2002
9. Haynes, David. Metadata for librarianship in India. London: Greenwood press, 2004.
10. Patel, Jeshu. Libraries and librarianship in India. London, Greenwood Press, 2001.

Dr. Rizwan Momin
Prof. & Head
Dept. of oral Pathology

MAHARJ VINAYAK GLOBAL UNIVERSITY

Ph.D. (Public Health Dentistry)

Unit-I

- Conducting various types of trials/research
- Case history recording

Unit-II

- Fluorides
- Epidemiology

Unit-III

- Program Planning
- Preventive dentistry

Unit-IV

- Ozone therapy
- Cariology

Unit-V

- Conscious sedation, Deep sedation & general anesthesia in pediatric dentistry.
- Dental care of children with special needs.
- Dental emergencies in children & their management

RECOMMENDED LIST OF TEXT BOOKS:-

- Dental Health Education-Stoll 5th Edition
- Preventive Dentistry, Dental Practitioners Handbook No.22,2nd Edition 1981 Forest
- Dental Public Health and Community Dentistry, 1981- Anthony Jong
- Periodontics-Glickman 6th Edition
- Preventive Dentistry- Stallard
- Oxford Public Health Volume 1,2,3, & 4- 1st Edition
- Preventive and social medicine, Park 17th Edition
- Text book of community dentistry, Sathe 1st Edition
- Essential of Preventive and community dentistry, Soban Peter 2nd Edition
- Pedodontics 4th Edition- Finn
- Dentistry, Dental Practice and Community- Striffler DF
- Primary Preventive Dentistry- Harris N & Christen AG
- Community Dental Health-Jong A W
- Principles of Dental Public Health-Dunning JM
- Dental Public Health: An Introduction to Community Dentistry-Slack
- Fluorids in Dentistry- Fejerskov
- Fluorids in Dental Caries- Tiwari A
- Textbook of Preventive and Social Medicine- Mahajan BK & Gupta
- Dental health education by WHO expert committee
- Metabolism and toxicity of fluoride- Whitford GM

MAHARJ VINAYAK GLOBAL UNIVERSITY

Ph.D. (Pedodontics)

Subject Code: 1002

Advanced in Pedodontics

Unit-I

- Conscious sedation, Deep Sedation & General Anesthesia in pediatric Dentistry
- Gingival & periodontal Diseases in children
- Pediatric Operative Dentistry
- Pediatric Endodontic
- Traumatic injuries in children

Unit-II

- Interceptive Orthodontics
- Oral habits in children
- Dental care of children with special needs
- Oral Manifestation of systemic condition in children & their management
- Management of Minor Oral Surgical podiatric Dentistry

Unit III

- Dental Radiology as Related to pediatric Dentistry
- Pediatric Oral Medicine & Clinical Pathology
- Congenital Abnormalities in Children
- Dental Emergencies in Children & their Management
- Dental materials used in Pediatric Dentistry

Unit IV

- Case History Recording
- Setting up of Pedodontics & preventive Dentistry Clinical
- Child psychology
- Behavior Management

Unit V

- preventive Dentistry
- Cariology
- preventive Dentistry
- Dental health education & School Dental health programmes:
- Fluorides
- Epidemiology
- Comprehensive infant Oral health care/ Comprehensive cleft care

Books Recommended & Reference:

1. Pediatric Dentistry (Infancy through Adolescences)- Pinkham
2. Kennedy's Pediatric Operative Dentistry-Kennedy & Curzon
3. Occlusal Guidance in Pediatric Dentistry -Stephen H.Wei.
4. Clinical use of Fluorides- Stephen H.Wei.
5. Pediatric Oral & Maxillofacial surgery-Kaban
6. Pediatric Medical Emergencies- P.S.Whatt
7. Understanding of Dental Caries- Niki Foruk
8. An atlas of Glass Ionomer Cements- G.J.Mount
9. Clinical Pedodontics –Finn
10. Textbook of Pediatric Dentistry- Braham Morris.
11. Primary preventive Dentistry- Norman O.Harris
12. Handbook of clinical Pedodontics- Kenneth.D
13. Preventive Dentistry –Forrester
14. The Metabolism and Toxicity of Fluoride- Garry M.Whitford
15. Dentistry for the Child and Adolescence –Mc.Donald
16. Pediatric Dentistry-Mathewson
17. Traumatic Injuries- Andreason
18. Pediatric Dentistry- Mathewson
19. Traumatic Injuries- Andreason
20. Occlusal guidance in Pediatric Dentistry- Nakata
21. Pediatric Drug Therapy- Tomare
22. Contemporary Orthodontics- Profitt
23. Preventive Dentistry- Depaola
24. Metabolism & Toxicity of Fluoride- Whiteford.G.M.
25. Endodontic Practice- Grossman
26. Principal of Endodontic-Munford
27. Endodontic- Ingle
28. Pathways of pulp- Cohen
29. Management of Traumatized anterior teeth-Hargreaves

Head of the Department

CONSERVATIVE DENTISTRY

- 1) Introduction to operative dentistry
- 2) Tooth numbering systems
- 3) Structure of teeth
- 4) Occlusion in operative dentistry
- 5) Dental caries
- 6) Nomenclature of tooth & cavity
- 7) Principles of tooth preparation
- 8) Armamentarium in operative dentistry
- 9) Sterilization, asepsis & infection control
- 10) Operator & chair positioning
- 11) Patient evaluation, diagnosis & treatment planning
- 12) Isolation of operating field
- 13) Pain management in operative dentistry
- 14) Pulp response to caries & restorative procedures
- 15) Tooth preparations for amalgam restorations
- 16) Complex / Pin retained restoration
- 17) Tooth separations for composite restorations
- 18) Tooth separation, matricing & wedging
- 19) Contacts & Contours
- 20) Bonding & smear layer in operative dentistry
- 21) Tooth preparations for direct filling gold restorations
- 22) Tooth preparations for cast metal restoration
- 23) Casting procedures & defects
- 24) Non carious lesions
- 25) Management of deep carious lesions
- 26) Dentin hypersensitivity
- 27) Geriatric restorations
- 28) Minimal interventional dentistry
- 29) Role of Nano-technology in operative dentistry
- 30) Lasers in operative dentistry

APPLIED DENTAL MATERIAL SCIENCE

1. Properties of dental materials
2. Dental cements
3. Pulp protective agents
4. Dental amalgam
5. Mercury toxicity
6. Bonding agents
7. Composite restoration (direct & indirect)- material aspects
8. Direct filling gold- material aspects
9. Cast metal alloys
10. Inlay casting wax
11. Investment materials
12. Dental ceramics
13. Selection of restorative materials
14. Carving, finishing & polishing of restorative materials
15. Impression materials in operative dentistry
16. Bioactive dental materials

AESTHETIC DENTISTRY

- 1) Fundamental principles**
- 2) Shade selection**
- 3) Clinical photography**
- 4) Conservative esthetic procedures**
- 5) Management of discolored teeth – Bleaching**
- 6) Laminates & Veneers**
- 7) Abrasion**
- 8) Tooth jewelry & tattoo**

ENDODONTICS

1. Introduction & scope
2. Dentin and pulp complex
3. Normal pulp & periradicular tissues
4. Diseases of pulpal & periradicular tissues
5. Biofilms in endodontic therapy
6. Endodontic microbiology
7. Rationale of endodontic therapy
8. Oro-facial pain
9. Diagnosis in endodontic
10. Case selection and treatment planning
11. Endodontic emergencies
12. Sterilization, asepsis & infection control
13. Pharmacology in Endodontic
14. Local anesthesia in Endodontic
15. Endodontic radiology
16. Endodontic armamentarium
17. Anatomy of pulp space
18. Access cavity preparation
19. Working length determination
20. Cleaning and shaping of root canal system
21. Root canal irrigants
22. Smear layer in endodontic
23. Intra canal medicaments

24. Obturation of radicular space
25. Single visit endodontic
26. Restoration of endodontically treated teeth
27. Procedural errors in endodontic
28. Failures & flare ups in endodontic
29. Endodontic retreatment
30. Traumatic injuries and management
31. Management of discolored teeth
32. Tooth desorption
33. Pediatric endodontic
34. Geriatric endodontic
35. Surgical endodontic
36. Regenerative endodontic
37. Endo-perio interrelationship
38. Endo. Prosthodontic inter-relationship
39. Endo. Orthodontic inter-relationship
40. Lasers in endodontic
41. Magnification in endodontic
42. Role of nano- technology in endodontic

APPLIED ANATOMY OF HEAD AND NECK:-

- Development of face, paranasal sinuses and the associated structure and their anomalies, cranial and facial bones, TMJ anatomy and function, arterial and venous drainage of head and neck, muscles of face and neck including muscles of mastication and deglutition, brief consideration of structures and function of brain. Brief consideration of all cranial nerves and autonomic nervous system of head and neck. Salivary glands, Functional anatomy of mastication consideration in physiology of permanent dentition, form, function, alignment, contact, occlusion.
- Internal anatomy of permanent teeth and its significance.
- Applied history- histology of skin, oral mucosa, connective tissue, bone certificate, blood vessels Lymphatic, nerves, muscles, tongue.

DEVELOPMENT OF TEETH:-

- Enamel: - Development and composition, physical characteristics, chemical properties, structure.
- Age change: - Clinical structure.
- Dentin: - Development, physical and chemical properties, structure type of dentin, innervations age and functional changes.
- Pulp: - Development, histological structure, innervations, functions, regressive changes, clinical considerations.
- Cementum: - Composition, cementogenesis, structure, function, clinical consideration.
- Periodontal ligament: - Development, structure, function, clinical consideration.
- Salivary glands: - structure, function, clinical consideration.
- Eruption of teeth.

APPLIED PHYSIOLOGY:-

- Mastication, deglutition, and assimilation, fluid and electrolyte balance.

- Blood composition, volume, function, blood group, haemostasis, coagulation, blood transfusion, circulation, heart, pulse, blood pressure, shock, respiration, control, anoxia, hypoxia, asphyxia, artificial respiration and endocrinology-general principles of endocrine activity and disorders relating to pituitary, thyroid, parathyroid, adrenals, including pregnancy and lactations.
- Physiology of saliva – composition, function, clinical significance.
- Clinical significance of vitamins, diet and nutrition- balanced diet.
- Physiology of pain, sympathetic and Para sympathetic nervous system. Pain pathways, Physiology of pulpal pain, Odontogenic and non Odontogenic pain, pain disorders- typical and atypical, biochemistry such as osmotic pressure, electrolytic dissociation, oxidation, reduction etc. Carbohydrates, proteins, lipids and their metabolism nucleoproteins, nucleic and their metabolism. Enzymes, vitamins and minerals, metabolism of inorganic elements, detoxification in the body, anti-metabolites, chemistry of blood lymph and urine.

PATHOLOGY:

- Inflammation, repair, degeneration, neerosis and gangrene.
- Circulatory disturbances- ischemia, hyperemia, edema, thrombosis, embolism, infarction, allergy and hypersensitivity reaction.
- Neoplasm's classifications to tumors, characteristics of benign and malignant tumors, spread tumors.
- Blood dyscrasias
- Development disturbances of oral and Para oral structure, dental caries, regressive changes of teeth, pulp reaction to dental caries and dental procedures.
- Bacterial, viral, mycotic infections of the oral cavity.

MICROBIOLOGY:-

- Pathways of pulpal infection, oral flora and microorganism associated with endodontic diseases, pathogenesis, host defense, bacterial virulence factors, healing, theory of focal infections, microbes or relevance to dentistry- strepto, staphylococci, lactobacilli, corny bacterium or actinomycetes, clostridium, Neisseria, vibrio, bacteriods, fusobacteria, spirochetes, mycobacterium, virus and fungi.

- Cross infection, infection control, infection control procedure, sterilization and disinfection.

PHARMACOLOGY:-

- Dosage and route of administration of drugs, actions and fate of drug in body, drug addiction, tolerance of hypersensitivity reactions.
- Local anesthesia- agents and chemistry, pharmacology actions, fate and metabolism of anaesthetic, ideal properties, techniques and complications.
- General anesthesia- Pre medications, neuro muscular blocking agents, indication agents, inhalation anesthesia, and agents used assessments of anesthetic problems in medically compromised patients.
- Anesthetic emergencies.
- Antihistamines. Corticosteroids. Chemotherapeutic and antibiotics, drug, vitamins and minerals (A, B, C, D, E, K IRON) anti sialagogue, immunosuppressant's. Drug interactions, antiseptics, disinfectants, anti-viral agents, drug acting on CNS.

BIOSTATISTICS:-

- Introduction basic concept/ Sampling, Health information systems- collection, composition, presentation of data. Elementary statistical methods- presentation of statistical data. Statistical averages- measures of central tendency, statistical of dispersion. Normal distribution. Tests of significance- parametric and non-parametric tests (Fisher exact test, Sign TEST, Mann Whitney test. Crucial Wallis way analysis, Friedman tow way analysis, Regression analysis), Correlation and regression, use of computers.

RESEARCH METHODOLOGY:-

- Essential features of a protocol for research in humans.
- Experimental and non- experimental study designs.
- Ethical considerations of research.

MHARAJ VINAYAK GLOBAL UNIVERSITY

PhD (Orthodontics)

Subject code: 1002

Advanced in Orthodontics

Unit-1

1. Cleft lip and Palate
2. Genetics and its role in Orthodontics
3. Histological Studies and sectioning pertaining to Orthodontics tooth movement
4. Behavior and psychology of Orthodontics patients

Unit-2

1. Preventive Orthodontics
2. Interceptive Orthodontics
3. Habits
4. Myofunctional and Orthodontics appliances in Orthodontics

Unit-3

1. Variable ligation systems in Orthodontics
2. TMD in Orthodontics
3. TADS in Orthodontics
4. Lingual Straight Wire Appliance System

Unit-4

1. Tooth Movement Markers
2. Pain and discomfort
3. Perception and assessment of smile orthodontics patient
4. Material science advancement

Unit-5

1. Osteo-integrated implants in Orthodontics
2. Concept of Bio-engineering in Orthodontics
3. Role and influence of medicaments in Orthodontics tooth movement
4. CBCT and its role in Orthodontics
5. Epidemiological studies pertaining to Orthodontic

References-

1. Profit-5th Contemporary Orthodontic 5th Elsevier
2. Graber & Vanasdale-5th Elsevier
3. Bishara- Textbook of Orthodontic-2nd Ed.- Elsevier
4. Mosby's Orthodontic Review
5. Nanda 1st Ed.-Bio-mechanics in Orthodontic
6. Berkovitz, 1st Ed. Cleft LIP &Plate
7. Scuzzo & Takemoto, Invisible Orthodontic, Mosby



MAHARAJ VINAYAK GLOBAL UNIVERSITY

Ph.D. Syllabus

Advances in Economics- Ph.D. 1002

Unit-1

The global economic & financial crisis, Cures & Myths; Severity of the crisis; Impact of the crisis on emerging markets, on Indian Economy, and on Indian banking system.

Unit-2

Oil prices and global imbalance; dealing with higher oil prices in India; trade and WTO: Definition of subsidies; the economics of subsidies; objective of governments for using Subsidies; the subsidies; the including of subsidies and the WTO.

Unit-3

Off-shoring services: recent developments & prospect; the definition of off-shoring and outsourcing; the economics of outsourcing; the scope of off-shoring services; implications of outsourcing & off-shoring and GATS.

Unit-4

India and the knowledge economy. India's key challenges to sustaining high growth pattern and obstacles to high growth. Services led industrialization in India.

Unit-5

Environmental Issues-Sustainable Development-Waste Management-Natural Disaster Management- Environmental Policies; Human Face of Development: Components of Human Development Index: Education Health, Basic Needs Approach-Women Empowerment-Common Minimum Programme.

Suggested Readings:-

Economic & Political Weekly, March 28-April 3, 2009.

IMF (2011), India: Selected Issues, IMF Washington, D.C.

IMF (2011), World Economic Outlook: Globalization inflation, IMF.

OECD (2011), *OECD Handbook on Economic Globalization Indicators*, OECD, Paris.

OECD (2011), India, *OECD Economic surveys, Academic Foundation*, New Delhi.

OECD (1999), *the Future of the Global Economy: Towards a Long Boom?* OECD, Paris.

Singh, Nirvikar (2011), *Services-Led Industrialization in India: Prospects & Challenges*, Working Paper No.206, Stanford

Center for International Development, Stanford University, Stanford

WTO (2011) *World Trade Report 2011: Exploring the links between trade, standards and the WTO*, Vol. I & II.

UNCTAD (2011), *Trade & Development Report 2006: Exploring the between trade, standards and the WTO*.

Ph.D. (Education)

Syllabus for Course Work

Contents:-

1. **Unit 1:** Scientific Method. Educational Research- definition, characteristics, types, steps, interdisciplinary approach in educational research. Approaches to Inquiry: qualitative versus quantitative, Variable- definition, type: Independent, continuous, and discontinuous, intervening and concomitant. Related literature and its role in educational research. Primary & Secondary sources of data. Preparation of bibliography and references.
2. **Unit 2:** Problem and its sources, selection & definition of problem, Hypothesis: definition, Concept of level of significance and freedom, One Tailed Test and two tailed test. Types of error-Type I and Type II.
3. **Unit 3:** Population and sample- Definition and differences. Importance of sampling: Sampling Techniques, Sampling Error and Avoidance of Sampling Bias. Tools of measurement, difference between measurement and assessment, characteristics of Tools-Reliability, Validity, Sensitivity: Type of tool, Test Standardization. Standard Scores.
4. **Unit 4:** Parametric & Non parametric statistics- measures of central tendencies, Measures of variability, Percentile, correlation, Normal Probability and its application, Analysis of variance, t-test, chi square.
5. **Unit 5:** Computer literacy, Report writing, Seminar.

Maharj Viyak Global University

Advances English

Course Code: Ph.D. Eng. 1002

100Marks

Unit 1: (POETRY)

Shakespeare's:-

- a) The Marriage of the True Minds
- b) Shall I Compare Thee

Kamala Das:-

- a) A Hot noon in Malabar.
- b) My Grand Mother's House

William Collins:-

- a) Ode to Simplicity
- b) Ode to Evening

W.B. Yeats:-

- a) When You Are Old
- b) Nineteen Hundred and Nineteen

Robert Browning's:-

- a) The Last Ride Together

Sarojini Naidu:-

- a) The Milkmaid, Song of Radha

Unit-II (DRAMA)

Shakespeare's:-

- a) Hamlet
- b) Merchant of Venice

Harold Pinter:-

- a) The Birthday Party

G.B.Shaw:-

- a) Apple Cart

R.N.Tagore:-

- a) Chadalika

Unit III (FICTION)

Kamala Das:-

- a) My Story

Jane Austine:-

- a) Pride and Prejudice

George Orwell:-

- a) Animal Farm

R.K.Narayan:-

- a) The Guide

Mulk Raj Anand:-

- a) Coolie

Unit –IV

- a) Literary Theory and Criticism.
- b) Rhetoric and Prosody

Unit- V

- a) Essential Language Learning or Skills.

Maharaj Vinayak Global University

Advances Geography

Course Code: Ph.D. Geo 1002

100Marks

Unit I

Introduction to Research in Geography: Geography Research- Procedure of Scientific research- Deductive and Inductive approach, Geography as Spatial Science- concept and models in geography, evolution of contemporary geography thoughts and concept, Logical and scientific thinking in geography, system approach in geography and overview of recent research trends in geography.

Unit-II

Research methodology in geography: Defining of the research problem, purpose and Hypothesis, Literature Review Process, Type of literature material-understanding major trends, patterns and gaps in literature, research design- research question and appropriate methods, acquisition of research data and sampling- different sources of data and methods of data collection, survey research.

Unit-III

Economic Geography: Pre capitalist world, the rise and spread of capitalism, resources and Development, Globalizations, theories and strategies of development Agricultural regionalization, Agricultural Productivity, Land use surveys, Land classification, models in Agricultural Geography, food security, Transport Network models, Industrial location Theories of industries Settlement

Unit-IV

Population Geography: Paradigms in Population and Settlement Geography, Concepts, approaches and models in Population and settlement Geography, techniques/ measures in population and settlement Geography.

Unit-V

Writing of Research Report: Format and arrangement of the text, presentation of data and results.

References Books:

1. Montello Daniel R. and Sutton Paul C. (2006) - Introduction to scientific research Methods of Geography. By Saga Publication.
2. Kothari, C.R. (2004) - Research Methodology- Methods and techniques, new Age.
3. Mishra, H.N. and Sing, V.P. (1998)-research Methodology in Geography. Rawat Publication.
4. Clifford, N. Fresh S. Valentine, G. (2010) - Key Method in Geography, Saga Publication.
5. Gregory, K.J. (2006) - The changing Nature of Physical Geography, Arnold, London.
6. Gomez basil and Jones, III John Paul (2010) - Research Method in Geography: A Critical, Wiley- Blackwell.
7. Harvey, David (1971) - Explanation in Geography, Edward Arnold, London.
8. Chorley, R. J. and P. Haggett (ed) (1967) - Models in Geography, Methuen Ph.D. Climatology: Climatology & Meteorology, Basic principles of Climatology, atmosphere.

Maharaj Vinayak Global University

Advance History

Course Code: Ph.D. His. 1002

100 Marks

Unit –I

Historical Method, Selection and Identification of History Research Problem. Research Design, Hypothesis.

Unit-II

Concept of Historical writing- (a) Ancient Historiography (b) Medieval Historiography (c) Modern Historiography.

Approaches to History- Theological, Imperialist, Nationalist, Marxist, Subaltern, Post-modernist, Positivist.

Unit-III

Primary and secondary sources of historical data material collection, Historical sources- Epigraphy, Numismatic, Art and Architecture, Archaeology, News-Paper, Literature, Folklore, Contemporary records, Govt. Document, Autobiographies, Travelers Notes. Interview, Investigation, Schedule, Questionnaire, Projective, Techniques, use of mechanics. (Audio-Video aids) Library and Archives.

Unit-IV

Historical fact, Fact and Objectivity, Collection of facts, Interpretation of fact, Fact and evidence, Causation in History, Bias in History.

Unit-V

Footnote, end notes, Arrangement of references, paintings and map's, conclusion, appendix, Defined and technical vocabulary, abbreviation, research text process, Presentation.

Maharaj Vinayak Global University

Law

Course Code: Ph.D. Law 1002

100 Marks

Unit-I

Constitutional Law of India

- Jurisprudence
- Interpretation of Statues

Unit-II

International Law

- a) Air, Sea, Outer Space
- b) United Nation & Human Rights
- c) Nationality & Extradition

Unit- III

- Contract Law
- Labour Law
 - a) Industrial dispute Act
 - b) Trade Unions
- Crimes & Torts
- I.P.R.

Unit- IV

- Salient features if Copy Right Act 1957
- Environmental Protection Act 1986
- Human Rights Act 1993
- Information Technology Act (I.T.A)
- Right to Information Act

Unit- V

Research Methodology.

Suggest Readings:

- BKappor SK: Public International Law
- Star: Introduction to International Law
- Bhandar i MK Intellectual Property Rights
- MP Tandon & VK Ananad: International Law & Human Rights
- DK Basu: Constitutional Law of India
- Jain MP: Indian Constitutional Law
- T.Bhattacharya: Indian Penal Code 1860
- T.Bhattacharya: International of Statutes
- VJ Paranjpay: Jurisprudence
- Avtar Singh: Law of Contract
- SN Mishra; Labour Law
- SN Shukla: Law of Torts
- Anwarul Yaqin: Research Methodology
- CR Kothari: Research Methodology
- Sc Shastri: Environmental Law
- SR Bhansali: Right to Information

Maharaj Vinayak Global University

Syllabus

DEPARTMENT OF LIBRARY & INFORMATION SCIENCE

Unit-I

Information and Communication Technology

Origin and Growth Role of ICT in the development of LIS Centers

51.3 Librarianship 2.0

Unit-II

Digital Libraries

Concept, need, characteristics

Infrastructural facilities & digitization software

(DSpace, Greenstone etc.)

Planning of Digitization

Content creation for DL

Intellectual Property Right Issues (IPR)

Digital collection (e-books, e-journals)

Collection development

Organization and preservation

Unit-III

Services of Digital Libraries

Consortia (J-gate, Infonet, Indest, Jstor)

Portals, Vortals and Gateways

Digital libraries in the world

Unit-IV

Relational Database Management System (RDBMS)

Introduction and concept of RDBMS

DBMS vs. RDBMS

RDBMS software: Proprietary and Open source

Interfaces for RDBMS using SQL

Development of database using MySQL

Unit-V

Networks and Security measures

Network components: UPT. Optical Fibers, Ethernet

Network Interface Card, Hub

Routers, Modems and requirement of Wi-Fi

Planning of computer network in Library and Information Centers

Network security measures

Internet security

Recommended Books:

1. Carter, Roger: The Information Technology Hand Book, London, and Henemann, 1987
2. Jeanne, F.M. A Librarian's Guide to the Internet: A Guide to searching and evaluating information, Oxford: Chandos publishing, 2006
3. Lancaster, F.W. Electronic publishing and their implication for libraries and beyond, London Clive bingley, 1990
4. Lucy, A. Tedd. An Introduction to computer based library system.Ed.3 Chinchester, Wiley, 2005
5. Richard Jones. The Institutional Repository. Oxford, Chandos publishing, 2006
6. Vishwanathan.T.Commuication Technology. New Delhi, T.M.H. 1995
7. Zorkoczy, Peter: Information Technology: An introduction, London, Otiman,2005
8. Gorman, G.E. Digital factor in Library and Information Services. London: Fact publishing,2002
9. Haynes, David. Metadata for Librarianship in India. London: Greenwood Press,2004
10. Patel, Jashu. Libraries and Librarianship in India. London: Greenwood Press,2001

Ph.D./M.Phil. SYLLABUS
MASS COMMUNICATION AND JOURNALISM

Unit I- History of Press, Laws and Processes

Unit II- Communication: Concept and Processes and Practical

Unit III- Reporting: Concepts, Processes and Practical

Unit IV- Editing: Advertising and Processes and Practical

Unit V- PR, Advertising and Media Business Management

Unit VI- Radio and TV Journalism

Unit VII- Development Journalism and New Media Journalism

Ph.D. Syllabus in advance Hospital Management

Unit-I

- Management Concept & Organization Behavior
- Managerial Economics
- Accounting for Managers
- Business Environmental & Law

Unit-II

- Financial Management
- Marketing Management
- Human Resources Management
- Operations Research and Management
- Strategic Management

Unit-III

- Healthcare Environmental & Management
- Hospital Architecture, Planning and Maintenance
- Health care Laws, Ethics And Medical Terminology
- Hospital Operations Management
- Patient care Management

Unit-IV

- Purchase Management & Inventory Control for Hospitals
- Hospital Facilities Management
- Hospital Information System
- Total Quality Management
- Public Health System & Outreach Programmes

Unit-V

- Research Methodology **25**

Maharaj Vinayak Global University

Advances Microbiology

Course Code: Ph.D. Micro. 1002

100 Marks

Unit I

Gene Technology: DNA polymerase, restriction endonucleases, topoisomerase I and DNA ligase, reverse transcriptase, kinase, alkaline phosphatase, nuclease, RNase H. Vectors: plasmids;(Ti/Ri), Cosmids, bacteriophage, MI 3 vectors, BAC, YAC and synthetic plasmids DNA sequencing dideoxy chain termination and Sanger's +/- method. Cdna library-screening by oligonucleotide probe. Nick translation, site directed mutagenesis, linkage analysis. Gene cloning- transformation. Application of gene technology, Gene Silencing, Gene knock out and gene therapy.

Unit II

Immunology: Complement fixation, structure and classes of antibodies, genetic basis of antibody diversity. MHC I and II: structure and antigen presentation. T and B lymphocytes activation and role in humoral and cell mediated immunity. Vaccines live and attenuated, killed, multi-subunit and DNA vaccines. Hypersensitivity and autoimmune diseases. ELISA, RIA, Hybridoma Technology.

Unit-III

Tissue culture Techniques:

- a) Animal Culture: Media requirement and sterilization techniques, primary and established cell lines. Culture method: hanging drop, monolayer and suspension. Advantages and disadvantages. Scale up methods. Roux tubes roller bottles. Stem cells: adult and embryonic, application to tissue engineering. Application of animal cells.
- b) Plant tissue culture: Cell and callus culture, another culture. Micropropagation, somatic cell hybridization, protoplast fusion, hybrids, artificial seeds, Agrobacterium mediated gene transfer and use of Ti plasmid. Application of plant tissue culture engineering, pathogen resistance (BT gene), herbicide tolerance, salt tolerance, production of secondary metabolites and transgenic plants.

Unit –IV

Bio fertilizers: Symbiotic free nitrogen fixers, asymbioticfree nitrogen fixer, algal, phosphate solubilizing, mycorrhizae and green manure. A. Recent advanced in Bacterial Taxonomy-

- i. Identification of Prokaryotes
- ii. A phylogenetic backbone and taxonomic framework for prokaryotic systems
- iii. A road map to the use of the current Bergey's Manual
- iv. Computer taxonomy
- v. 16s RNA fingerprinting and lipid profile by GLC

Unit V

Microbial sources of pharmaceutically important compounds.

Quorum sensing and microbial hormones- intercellular signaling.

Biosensors- living biosensors for the management and manipulation of microbial consortia

Pre-Ph.D. (Course Work) Examination Nov. 2014

Faculty of Nursing

Paper-II Nursing Science and Theory Development including Nursing Leadership

Time: 2Hrs.

Max. Marks: 100

Note:

- (i) Question paper consists of 08 question, **out of which 04 question are to be attempted.**
- (ii) Each question shall carry equal marks.

-
- | | | |
|---|--|-------------------------------|
| 1 | A) Enlist any five laws in health care delivery system. | 10+15=25 |
| | B) Importance of nurse practitioner. | |
| 2 | A) Define leader. | 3+10+12=25 |
| | B) Write the main 10 functions of a good leader. | |
| | C) Explain the types of leader, required in nursing services. | |
| 3 | Appreciate in detail the value of informatics in nursing profession. | 25 |
| 4 | Explain in detail the Code of Ethics and professional conduct for nurses in India. | 25 |
| 5 | Enlist any type of nursing theories and explain any one nursing theory as per the Practice in clinical area. | 25 |
| 6 | Describe in detail the importance of review of literature in Nursing Research. | 25 |
| 7 | Explain with any one authentic example of psychomotor, cognitive and affective Domain in nursing education. | 25 |
| 8 | Write short notes on any two: | $12\frac{1}{2} \times 2 = 25$ |
| | A) Dissemination of research. | |
| | B) Data Processing in research. | |
| | C) Importance of Content validity in nursing research. | |

Ph.D. Advance Subjects

Unit 1

Occupational Therapy Knowledge Base

Frame of References

Practice issue in Occupational Therapy

1. OT and its relation to health
2. Wellness wellbeing and health program
3. Activity as a therapeutic tool
4. Socio-cultural and spiritual influences in O.T.
5. Recent investigative and evaluation procedures
6. Alternate practice models
7. Role of O.T. as consultant
8. Current basis of therapy
9. Advances in computer application in O.T.
10. Concept of telemedicine/ Rehabilitation and information technology.

Application of research:

1. Guidelines for development, Refinement, Evaluation and use of assessment tools in Occupational Therapy Scoring, Administering test and critiquing tools.

Unit 2

Occupational Therapy Process and Practice

- I. Diagnostic consideration for infants, children and adolescents
 - A. Introduction to the infant, child and adolescents population
 - B. Neurological dysfunction in children
 - C. Cardiopulmonary dysfunction in children
 - D. Children with HIV/AIDS and their families
 - E. Psychological dysfunction in childhood and adolescence
 - F. Child abuse and neglect.
- II. Diagnostic consideration in adult and older adult practice
 - A. Adult neurological dysfunction
 - B. Adult orthopedic dysfunction
 - C. Upper extremity musculoskeletal impairment
 - D. Adult with Mental illness

Unit 3

Occupational Therapy Practice Issues

Impairment, Disability and Handicapped
Disability Evolution
Social and industrial legislation
Ergonomic Approaches and Application
Work Handwriting
Industrial Rehabilitation

Clinical Intervention to promote Occupational Therapy Function in the following:

Oncology and Palliative Care
Hospice Care
Psychosocial aspect of women and child care
Hematology and Immunological Disorders
Cardio-respiratory rehabilitation
CBR

OT Managements Services

Managerial Functions
Documentation
Interdisciplinary Communication
Quality Assurance
Fiscal Management
Marketing

Environmental for practice

Legal and Esthetical Issues

1. Legal/ Legislative issues concerning:
 - A. Occupational Therapy Profession
 - B. Persons with Disability
2. Ethical Issues (Principles of AIOTA & WFOT)
 - A. Code of ethics
 - B. Future Planning

Unit 4

MENTALHEALTHSCIENCES

1. Applied psychology and biological basis of psychiatry.
2. Normal development and its deviations.
3. Current philosophical, theoretical basis and frames of reference in occupational therapy in mental health.
4. Diagnostic and prognostic assessment and evaluation tools and other investigative procedures. Use of standardized rating scales, indices, tests, procedures and methods. Signs and symptoms, classification of mental illness.
5. Intervention: Media and methods, principles, planning goals, approaches, individual and group, implementation and design of treatment in management of children, adolescents, adult and elderly individual with psychosocial dysfunction.
6. Alternate practice settings: Day care centers, school setting, gero-psychiatric set-up, community integration, forensic psychiatry, preventive model and return to work program.
7. Rehabilitation: Principles, process, approaches, goals, personnel, problems and constraints in Rehabilitation and long term care.
8. Evidence base practice, qualitative & quantitative research in mental health.
9. Disability evaluation and job certification in psychiatric conditions.

Unit 5

Occupational Therapy in Neurosciences

1. Functional neuroanatomy
2. Theories of neurorehabilitation.
3. Advances in sensory integrative therapy and cognitive rehabilitation.
4. Normal neurodevelopment and its deviation.
5. Advance in neuro-developmental therapy for congenital and pathological development condition.
6. Assessment and therapeutic management of various neurological disorders and modern approaches in following:-
 - A. Peripheral neuropathies.
 - B. Neuromuscular disorder.
 - C. CVA.
 - D. Head Injury
 - E. Movement disorder
 - F. Cerebellar dysfunction.
 - G. Demyelinating disease.
 - H. Brain tumors, intracranial pressure, Hydrocephal.

- I. Degenerative diseases of the nervous system.
 - J. Diseases of cranial nerves.
 - K. Diseases of the spinal cord and cauda equine.
 - L. Traumatic spinal cord injury.
 - M. Seizure disorders.
 - N. Neuropsychological disorders.
 - O. Autoimmune disorders.
-
- 7. Geri care: Structure and behavioral implications of older adulthood.
 - 8. Biological theories of ageing.
 - 9. Functional and preventive approaches in central nervous system degeneration.
 - 10. Prognostic and diagnostic occupational therapy assessment tools and other investigative procedures.
 - 11. Psychosocial aspect of adaptation and adjustment during management of disability.
 - 12. Disability evaluation and certification in neurological conditions.
 - 13. Management of Co-ordination deficit.
 - 14. Balance Training.
 - 15. Disorders of oral speech language.
 - 16. Visual perceptual treatment.
 - 17. Management of sensory deficit.

Maharaj Vinayak Global University

Advances Physiotherapy

Course Code: Ph.D. Physio.1002

100 Marks

Unit-I

- i. Development of Neuro-Muscular and Muskulo-Skeletal System.
- ii. Nervous system development & applied neurology.
- iii. Normal development of the following-Ligament, Cartilage, Muscles, Bones and Joints.

Unit-II

- i. Clinical Decision Making and Effective Planning Processes, Data Collection, Problem Identification, Diagnosis Prognosis, plan of Care, Using knowledge base, Self-monitoring documentation.
- ii. Applied Biomechanics and Ergonomics.
- iii. Soft tissue (bone, cartilage, tendon ligament and muscles) mechanism, response to mechanical stress, remodeling process, stress, strain, modulus, visco-elativ=c properties, kinematics and kinetic analysis.
- iv. Posture and gait assessment of normal and pathological conditions.
- v. Definition and history of ergonomics, Physical, cognitive and Organizational ergonomic concept, Methods of Ergonomics, Problems and Solution with methods of ergonomic.
- vi. Physiotherapy in gynecological problems. Musculoskeletal changes in pregnancy.

Unit-III

- i. Principles of Assessment and Evaluation.
- ii. Vitals, Musculo-Skeletal, Sensory, Motor function.
- iii. Different Physiotherapy approaches like Maitland, Mulligan, and Cyrix etc.
- iv. Motor Control Evaluation and treatment.
- v. Scientific Basis for exercise programme.
- vi. Cardiopulmonary Rehabilitation.
- vii. Physiotherapy Management of Spinal disorders & Injuries.
- viii. Athletic Injuries and their physiotherapy management.
- ix. Geriatric Rehabilitation.

Unit-IV

- i. Principles of Exercise Prescription.
- ii. Physical activity, types of physical activity, Methods of assessing, Dosage of Exercise, Components of exercise session, stage and changes with physical exercise, recommendation to enhance adherence.
- iii. Physiotherapy management of female, disables, younger and older athletes.

Unit-V

- I. Principles of Injury Prevention and Management.
- II. Risk factors, Warm up cool down, Physical conditioning rest and recovery, Screening, protective equipment Management and return to active life.
- III. Congenital and Acquired orthopedic problems in children.
- IV. Movements Disorders.
- V. Burns and its Physiotherapy Management.

References:-

1. Orthopedic Physical Therapy- Donattelli, London, Churchill Livingstone, 1994.
2. Gait Analysis- Perry, J. Black Thorofare, Newjersy 1992.
3. Sander's Manual of Physical Therapy (Mosby)
4. Common Vertebral problems-Grieve (Churchill Livingstone)
5. Neurological Physiotherapy-Susan Edward.
6. Motor Relearning Programme for Stroke-Carr & Shepherd.
7. Neuro Rehabilitation- Farber, WB Saunders, Philadelphia.
8. The Neural Basis of Motor Control- Black I, CHURCHILL Livingstone, London,1987
9. De Jong's the neurological Examination, Armin F.Haerer Lippincott-Raven.
10. Abnormal Postural Reflex Activity caused by Brain Lesions. Bobath B. Aspen Publication Rockville, 1987
11. Spinal Cord Injuries- Orthopedic & Neurological aspects A.G. hardy & Rossier A.B.
12. Food for sports-N.J. Smith.
13. Strength Training-D.P. Riley.
14. Sports Injury, assessment & Rehabilitatin David C.Reid.
15. Sports Injuries of the shoulders- Souza Thomas. A. Churchill, Livingstone, London 1994.
16. Sports & Physical Therapy- Bemhardt Donna, Churchill, Livingstone, London 1995
17. Physical Rehabilitation- Susan ' O' Sullivan.
18. Physiotherapy in Obstetrics & Gynecology- Margret Polden.
19. Physical Therapy for children-Suzann K. Campbell.
20. Cardiopulmonary Rehabilitation- Frown Felter.

Ph.D. Course Work in Political Science
Course-II: Political Analysis: Theories & Methods

Syllabus

UNIT I- EPISTEMOLOGICAL FOUNDATION OF POLITICAL SCIENCE

Philosophical Foundation of Knowledge
Theory and Method in Political Analysis
Positivism- Historical Materialism- Post-positivism

UNIT II- SOCIOLOGICAL AND PHILOSOPHICAL FOUNDATION OF STATE AND POLITICS

Idealism-Liberalism-Marxism
Perspective and Critiques

UNIT III- CONTEMPORARY THEORIES OF STATE GOVERNANCE AND INSTITUTIONS

Neoliberalism- Institutionalism- Green Theories
Critical Theory
Post-colonialism

UNIT IV- CONTEMPORARY THEORIES OF THE WORLD SYSTEM

Theories of Development/Underdevelopment/Unequal Exchange
Theories of Globalizations
Political Economy of Globe Governance

UNIT V- CONTEMPORARY PERSPECTIVES ON POLITICS AND SOCIETY

Social Class, Social Identities and Political Mobilization
Caste-Ethnicity- Religion
Multiculturalism- Secularism
Politics of Media and New Media
Civil Society New Movements

PUBLIC ADMINISTRATION:

1. INDIAN ADMINISTRATION
2. ADMINISTRATIVE ORGANISATION AND MANAGEMENT
3. A. DEVELOPMENT ADMINISTRATION
B. SOCIAL WELFARE ADMINISTRATION
C. ENVIRONMENTAL ADMINISTRATION
4. LABOUR WELFARE AND INDUSTRIAL RELATIONS
5. PUBLIC FINANCIAL ADMINISTRATION IN INDIA

Maharaj Vinayak Global University

Advances Sanskrit

Course Code: Ph.D. San. 1002

100 Marks

Unit-I

Vedic and classical Literature in Sanskrit

Vedas, Vedangas, Upanisadas, Itihasas, Puranas, Mahakavyas, Dramas, Lyrics, Fables, Popular tales.

Unit-II

Nine Systems of Indian Philosophy

General awareness of Sankhya, Yoga, Nyaya, Vaisesika, Purvamimamsa, Uttaramimamsa, Carvaka, Baudda and Jaina.

Unit-III

Kerala Sanskrit Literature and Technical Literature in Sanskrit

General awareness of Atula, Sankracharya, Sukumara, Melputtur, Ramapanivada, Keralavarma, Valiyakoyittampuran, A R Rajarajanvarma, K N Ezhuttachan, P.C. Devasya, IC Cakko, Narayan Pillaai, K Balarampanikkar and Pariksittu Tampuran.

General awareness of Ayurveda, Astronomy, Astrology, Mathematics and Vastuvidya.

Unit-IV

Nature of Manuscript

Collection and Preservation

Descriptive Catalogue

Critical Edition

Unit-V

Modern Trends in Sanskrit

General awareness of Post-independence Sanskrit Literature: Important works deals with story, Drama, poem and translation.

General awareness of Natural Language Processing (NLP), World Processing.

Ph.D. COURSE WORK IN SOCIAL WORK

Course II-Advanced social work education and Practice

1. **Theories and Practice Models in Social Work:** Overview of practice Models: *Micro, mezzo and macro practices*
Creating Frameworks for Social Work Practice-Systems and Ecological Theories, Cognitive Behavioral Theories, strengths based, Right based and Bottom up approaches.
Problem solving model, Task Centered model, Cognitive Behavior model, solution focused model, Crisis intervention model, case management model, advocacy model, empowerment Model.
Evidence based and culturally competent practice in Social Work.

2. **Indigenization vs Internationalization:** International social work-concept, values and standards, strategies, programmes, Theories and concept basic to international social work-globalization, development and human rights.

Local & Globe Issues- poverty, conflict, displacement and forced migration, refugees and specific populations HIV/AIDS, Gender-based violence, trafficking in persons, Disability, children separated from their families, Global Warming & climate change

3. **Strategies and Approaches in International Social Work:**
Strategies of international social work practice- empowerment, capacity building, self-reliance, social integration

Approaches to international social work- global perspective, human rights perspective, ecological perspective, social development perspective.

4. **Global Social development Policies:** United Nation summit For Social Development, United Nation Millennium Development Goals and targets, United Nation Convention on the Right of the Child

5. **International Social Work Education and Research:** Multiculturalism in social work education, values and ethics for international professional action, use of social work methods in Multicultural contexts, developing global policies for social work education in globalized environment, Global standards for the education and training of the Social work profession, 2004
Strategies and challenges of field work and research in international social work.

Ph.D. course work in Sociology

Course II- Current Perspectives in Sociology

Unit I: The study of Sociology

- Sociology as a reasoned and rigorous study of social life.
- The relationship between sociology and other social science subjects.
- Sociology as a science: positivist, interpretive and post-modernist Perspectives
- The uses of Sociological knowledge; the role of values in Sociology.
- Sociology & Social policy: the differences between sociological problems and social problems.

Unit II: Recent trends in Sociology Theory

- Ethnomethodology (Gafinkel's contribution; criticisms on Traditional/mainstream sociology)
- Phenomenology (Edumed Husserl's phenomenology, contribution of Alfred Schutz, Peter Berger and Luck Mann)
- Structuralism, Structure and Agency (Major ideas of Structure and Claude Levi-Strauss, Anatomy Gidden's Structuration Theory, Bourieu and the idea of Reflexive Sociology)
- Modern and Post Modern.
- Criticism on and relevance of Modern and Post Modern Theory.

Unit III: Gender

- Theories of gender difference; Functionalist, biological, psychological and social elements of sex and gender differences.
- Gender socialization in the family, education, employment and the media; masculinity and feminity as social constructs; patriarchy and male power.
- Gender difference in occupation and rewards; changes in the social position of woman; the impact of equal opportunities Policies.

Unit IV: Education in social context

- Different theories of the links between education, the economy and social inequality.
- Debates about the relationship between education and the State.
- Education and social mobility; educational achievement and intelligence.
- Explanations of inequality and educational achievement according to social class, gender, ethnicity and regional differences.

Unit V: Sociology of Mass Communication and Information society 34

Ph.D. course work in Statistics

Course II- Modern Trends in Statistics

Unit 1. Mathematical Techniques for Statistics: Review of sequences and series, Convergence, Continuity, Uniform Continuity, Differentiability, Laplace Transform, Vector spaces, Independence of vectors, Basis of a vector space. Different type of matrices, Different type of quadratic forms and their properties, Eigen-values and Eigen-vectors, Spectral decomposition of matrices, Linear transformations.

Unit 2. Probability and Limit Theorems: Probability space, Bayes' theorem, Random variable and distribution function. Standard continuous and discrete distribution and their inter-relationships. Characteristic function and their properties, Sequences of random variable and various types of convergences, Laws of large numbers, Central limit theorems and applications.

Unit 3. Statistical Inference: Properties of estimates, Sufficiency, Minimal Sufficiency and Completeness, Minimum variance bound estimator, Rao-Blackwell and Lehmann – Scheffe theorems, Moment estimation, Maximum likelihood estimation of parameters, Neyman-Person theory of testing of hypotheses, Uniformly most powerful test, Unbiased test, Construction of UMPU test.

Unit 4. Multivariate Analysis: Important properties of multivariate normal and multinomial distributions. Maximum likelihood estimation, Hotelling's T^2 statistic (one sample and two samples) and applications. Data reduction methods. Principal Component analysis, Canonical correlation and discriminate analysis.

Ph.D. Course Work – ZOOLOGY
COURSE II – ADVANCES IN ZOOLOGY

Module I. Biodiversity & Taxonomic Studies: Biodiversity, genetic diversity, molecular diversity and taxonomy, DNA bar-coding, Conservation of diversity and endangered species. Collection, Preservation and Identification of Animals. Modern tools of Taxonomy (alpha beta and gamma level taxonomy) , Application of molecular and computational tools for Phylogenetic and Taxonomic studies (10L).

Module II. Field studies and EIA: Assessment of biodiversity in different types of ecosystems, sampling techniques and quantitative methods for biodiversity assessment. Environmental Impact Assessment (EIA): Definition, concepts & characteristics of EIA; participants, stages & types of EIA in India. Environmental impact Statement (EIS) & Environmental Management Plan (EMP). Methods of impact identification (10L).

Module III. Biosafety and Ethics: Guidelines for Bio-safety, functioning of Institutional Bio-safety committee, Institutional Animal ethics committee, and Institutional ethical committee, CPCSEA guidelines for animal experimentation ICMR guidelines for experiments involving animals and humans, DBT guidelines for Biosafety practices to be followed (5L).

Module IV. Tools and Techniques: Principles and applications- Biochemical and Biophysical techniques- Techniques used for purification and characterization of biomolecules: Principles and applications of Centrifugation, Ultrafiltration, Chromatography – GC and HPLC, Electrophoresis, Blotting techniques- Southern, Northern and Western blotting, Spectrophotometry, X-ray crystallography (10L).

Module V. Microscopic techniques: Specimen preparation for TEM, SEM, shadow casting, freeze fracturing, freeze etching, negative staining, Principles and applications of Electron Microscopy – SEM, TEM, STEM, Fluorescence microscopy, Confocal microscopy, Microphotography (7L).

Module VI. Cell biology, Molecular biology, Genetic engineering techniques: Principles and applications of PCR and ELISA, Fluoresces *insitu* Hybridization (FISH), DNA microarray, DNA sequencing, Protein Microarray, Protein sequencing Micronucleus test, Comet assay, Caspase assay and Live/dead cell viability assay method (8L).



MAHARAJ VINAYAK GLOBAL UNIVERSITY

Ph.D. Syllabus Project (Exploratory study)-Ph.D. 1003

Guidelines for Project

Students are required to submit Project synopsis (about 10-15 pages, 1 copy) duly typed and signed by faculty mentor along with the Performa appended by October 24th.

Proposals received after this date shall not be entertained under any circumstances.

The Director/Dean of the respective School/Department will convey the approval/ rejection along with the reasons thereof in writing by October 27th to each student. Thereafter, every student will incorporate the suggestions and make an 8-10 minutes presentation on the road map of the final project on November 5th.

I. Objective: To help the researcher develop ability to apply multi-disciplinary concept, tools and techniques for research.

II. Types of project:

| | | |
|-----|----------------------------|---|
| (a) | Comprehensive case studies | Covering single organization, multifunctional area problem formulation, analysis and recommendations. |
| (b) | Inter-organizational study | Aimed at inter- organizational comparison OR validation of theory OR survey of management practices. |
| (c) | Field study | Empirical study. |

III. Proposal formulation: The synopsis should clearly state the following:-

| | | | |
|-------|--------------------------------------|--------|---|
| (i) | Signification of the study. | (vii) | Universes and survey population sample. |
| (ii) | Review of existing Literature. | (viii) | Collection of data. |
| (iii) | Conceptualization. | (ix) | Analysis pattern. |
| (iv) | Focus of the problem. | (x) | Limitations of the study |
| (v) | Objective and Hypotheses. | (xi) | Organization of the study. |
| (iv) | Research methodology/research design | (xii) | References. |

IV. Interim report: To be submitted to the mentor/research supervisor followed by its presentation before the faculty in the least one month before the final submission of project report i.e. on December 9th. The supervisor shall certify that pre-submission presentation by the candidate has been made and feasible suggestions have been incorporated. The concerned supervisor shall keep a record of presentation by each student.

V. Structure of final report:

(a) Length of report may be 60-80 pages typed in 1.5 spaces not exceeding 15,000 words (excluding appendices and exhibits). [+10%]

(b) The Project report must contain the following-

| | |
|-------|--|
| (i) | Title page showing title |
| (ii) | Purpose for which the project has been submitted |
| (iii) | Name of candidate, supervisor, institute, university, month and year of submission |
| (iv) | Certificate from the candidate countersigned by supervisor and director, certificate from the competent authority of the organization where the project has been conducted |
| (v) | Acknowledgement |
| (vi) | Table of contents |

(c) Chapters:-

1. Introduction: - Signification of the problem, review of literature, conceptualization, operationalization of the concept, focus of study, objectives, hypothesis, limitations, cauterisation, notes (references).

2. Research methodology:- Universe and survey population, profile of organization, research design, sample size and techniques, analysis pattern, data collection (primary and secondary), identified independent and dependent variables, content analysis, applied statistical tools (analysis pattern).

3. Objective wise analysis (chapter 3, 4, 5...Micro analysis).

4. Macro analysis (interferences and interpretation).

5. Summary of major observations and recommendations (including utility of observations and directions for future research).

6. Appendices: - Questionnaire/schedule, raw analysis and tables, bibliography.

VI. Submission: 3 copies (one must be original print and hard bound) on or before January 22nd.

VII. Max. Marks:

| | |
|---------------------------------------|------------|
| Supervisor's evaluation: | 125 |
| Evaluation/viva by external examiner: | <u>125</u> |
| Total: | 250 |



MAHARAJ VINAYAK GLOBAL UNIVERSITY

Ph.D. Syllabus

SEMINAR-Ph.D.1004

Objective: To help the researcher develop ability to disseminate the tools and techniques for research.

MAHARAJ VINAYAK GLOBAL UNIVERSITY

Advances Psychology

Course Code: Ph.D. Psy.1002

100 Marks

Unit-I

Methods of Psychology:

Types of research: Descriptive, evaluative, diagnostic and prognostic; Methods of Research: Survey, observation, case-study and experiments; Characteristics of experimental design and non-experimental design, Quasi-experimental design; Focussed group discussion, brain storming, grounded theory approach.

Research Methods:

Major steps in Psychological research (problem statement, hypothesis formulation, research design, sampling, tools of data collection, analysis and interpretation and report writing) Fundamental versus applied research; Methods of data collection (interview, observation, questionnaire); Research design (ex-post facto and experimental); Application of statistical techniques (t-test, two way ANOVA correlation, regression and factor analysis); Item response theory.

Unit-II

Thinking and Problems Solving:

Piaget's theory of cognitive development; Concept formation processes; Information processing, Reasoning and problem solving, Facilitating and hindering factors in problem solving, Methods of problem solving: Creative thinking and fostering creativity; Factors influencing decision making and judgment; recent trends.

Motivation and Problem Solving:

Psychological and physiological basis of motivation and emotion; Measurement of motivation and emotion; Effects of motivation and emotion on behaviour; Extrinsic and intrinsic motivation; Factors influencing intrinsic motivation; Emotional competence and the issues.

Intelligence and Aptitude:

Concept of intelligence and aptitude, Nature and theories of intelligence-Spearman, Thurston, Gull ford Vernon, Sternberg and J.P; Das; Emotional Intelligence, Social intelligence, measurement of intelligence and aptitudes', concept of IQ, deviation IQ, constancy of IQ; Measurement of multiple intelligence and crystallized intelligence.

Personality:

Definition and concept of personality; Theories of personality (Psychoanalytical, sociocultural, interpersonal, development, humanistic, behaviouristic, trait and type approaches); Measurement of personality (projective tests, pencil-paper test); The Indian approach to personality; Training for personality development; Latest approaches like big 5 factors theory; The notion of self in different traditions.

Unit-III

Issues and Perspective in Modern Contemporary Psychology:

Computer application in the Psychological laboratory and Psychological testing; Artificial intelligence; Psychocybernetics; Study of consciousness- sleep- wake schedules; dreams, stimulus deprivation, meditation, hypnotic/Drug induced states; Extrasensory perception; Intercessory perception Simulation studies.

Psychological Measurement of Individual Differences:

The nature of individual Differences; Characteristics and construction of standardized; Psychology tests; Types of Psychological tests; Use, misuse and limitation of Psychological tests; hical issues in the use of Psychological tests.

Therapeutic Approaches:

Psychodynamic therapies; Behaviour therapies; Client centered therapy; Cognitive therapies; Indigenous therapies (Yoga, Meditation); Bio-feedback therapy; Prevention and rehabilitation of the mentally ill; Fostering mental health.

Unit-IV

Application of Psychology to Educational Field:

Psychological principles underlying effective teaching-learning process; Learning styles; Gifted, retarded, learning disabled and their training; Training for improving memory and better academic achievement; Personality development and value education, Educational, vocational guidance and career counselling; Use of Psychological tests in educational institutions; Effective strategies in guidance programmes.

Application of Psychology in Information Technology and Mass Media:

The present scenario of information technology and the mass media boom and the role of Psychologists; Selection and training of Psychology professional to work in the field of IT and mass media; Distance learning through IT and mass media; Entrepreneurship through e-commerce; Multilevel marketing; Impact of TV and fostering value through IT and mass media; Psychological consequences of recent development in Information Technology.

Unit-V

Application of Psychology to environment and related fields:

Environmental Psychology-effects of noise, pollution and crowding; Population Psychology: Psychological consequences of Population explosion and high Population density; Motivating for small family norm; Impact of rapid scientific and technological growth on degradation of environment.

Application of Psychology in other fields:

- a) Military Psychology Devising Psychological tests for defence personal for use in selection, Training, counselling; training Psychologists to work with defence personal in promoting positive health; Human engineering in defence.
- b) Sports Psychology Psychological interventions in improving performance of athletes and sports. Persons participating in Individual and Team Games.
- c) Media influences on pro and antisocial behaviour.
- d) Psychology of terrorism.

Maharaj Vinayak Global University
Ph.D.: Advances in Mathematics

Unit I

Analysis: Elementary set theory, finite, countable and uncountable sets Real number system as a complete ordered field, Archimedean property, supremum, infimum. Sequences and series, convergence, limsup, liminf. Bolzano Weierstrass theorem, Heine Borel theorem. Continuity, uniform continuity, differentiability, mean value theorem.

Linear Algebra: Vector spaces, subspaces, linear dependence, basis, dimension, algebra of linear transformations. Algebra of matrices, rank and determinant of matrices, linear equations. Eigenvalues and eigenvectors, Cayley-Hamilton theorem. Matrix representation of linear transformations. Change of basis.

Complex Analysis: Algebra of complex numbers, the complex plane, polynomials, Power series, transcendental functions such as exponential, trigonometric and hyperbolic functions. Analytic functions, Cauchy-Riemann equations. Contour integral, Cauchy's theorem, Cauchy's integral formula.

Unit II

Ordinary Differential Equations (ODEs): Existence and Uniqueness of solutions of initial value problems for first order ordinary differential equations, singular solutions of first order ODEs, system of first order ODEs. General theory of homogeneous and non-homogeneous linear ODEs, variation of parameters, Sturm-Liouville boundary value problem, Green's functions.

Partial Differential Equations (PDEs): Language and Charpit methods for solving first order PDEs, Cauchy problems for first order PDEs. Classification of second order PDEs. General solution of higher order PDEs with constant coefficients, Method of separation of variable for Laplace, Heat and Wave equations.

Unit III

Numerical Analysis: Numerical solutions of algebraic equations, Method of iteration and Newton-Raphson method, Rate of convergence, Solution of system of linear algebraic equations using Gauss elimination and Gauss-Seidel methods, Finite differences, Numerical differentiation and integration, Numerical solutions of ODEs using Picard, Euler, modified Euler and Runge-Kutta methods.

Special Functions & integral Transform: Gauss hypergeometric function and its properties, integral representation, Linear and quadratic transformation formulas, Contiguous function relations, Integral representation, Legendre functions $P_n(x)$ and $Q_n(x)$ and their properties. Bessel functions $J_n(x)$. Laplace transforms, Fourier Transforms.

Unit IV

Fluid Dynamics: Governing equations of fluid motion; stream line; velocity potential, path line, equation of continuity, Motion in two dimensions; stream function; complex potential; source; sink and doublet; image circle theorem, Viscous fluid, Stokes-Navier equations.

Unit V

Discrete Mathematics: Set Theory, Types of relations on sets and their properties, Relational matrix and the graph of a relation, Partitions Equivalence relations, Poset, Hasse diagram, Definitions & Classifications of functions, Characteristic function of a set, Hashing functions, Recursive functions, Permutation functions. Discrete numeric function, Basic counting principles, generating functions, Recurrence relations, Inclusion and exclusion principle.



MAHARAJ VINAYAK GLOBAL UNIVERSITY

Ph.D. Syllabus

RESEARCH METHODOLOGY-Ph.D.1001

QUANTITATIVE TECHNIQUES AND COMPUTER APPLICATIONS

Unit I

Problem Definition, Nature and purpose of scientific enquiry, Parameters of research, Definitions of construct and variables, Introduction of Research, Research Process, Steps in Research Process.

Unit II

Research Design, Concept and Type of research design, Design of Research on the basis of application-pure and applied. Design of research on the basis of Techniques/Methodology- Exploratory and, Descriptive, Descriptive research – Quantitative and Quantitative, Quantitative- Field studies, Field experiments and laboratory experiments, Design of research on the basis of area of research- research in social sciences and Physical sciences, Sampling and Data collection, Population and samples, Techniques of Sampling, Random, Stratified, Systematic, Multistage-sampling, Primary and secondary source of data, Design of questionnaire.

Unit III

Statistical Hypothesis and Test of significance, Procedures for testing of Hypothesis, Determining levels of significance, Type I and II errors. ANOVA: One way, two way, Chi square test and its application, Student "t" distribution, Non-parametric statistical techniques, Chi-square Test, Binomial Test, Runs Test.

Data Analysis: Introduction, classification and methods of Data Collections.

Measures of Central Tendency: Mean Median and Mode (Merits and Demerits).

Measures of Dispersion: Range, Inter-quartile, Quartile Deviation, Mean Deviation, Standard Deviation, Skewness.

Correlation: Introduction- Type, different methods.

Regression: Introduction- Type, Least Square Method, Regression correlation

Unit IV

Computational Tool- MATLAB

Starting MATLAB session: Introduction to programming logic and MATLAB interface, Menus and the toolbar, Computing with Matlab, Script files and Editor Debugger, Matlab Help System, programming in Matlab, Building Matrices, Variables, Functions Relations and Logical Operations, Colon Notation, Miscellaneous Features, programming in MATLAB, Assignment, Branching, For Loops & While Loops, Recursion Miscellaneous programming Items, Scripts, Suggestions, MATLAB demonstrations, Some MATLAB built-in functions, Some MATLAB functions descriptions.

Programming techniques: Program Design and Development, Relational Operators and Logical Variables, Logical Operators and functions, Conditional Statements, Loop the Switch Structure, Debugging Mat Lab Programs.

Plotting: XY-plotting functions, Subplots and overly plots, Special Plot type, Interactive plotting, Function Discovery, Regression, 3-D plots. Elementary Solution Methods, Matrix Methods for (LE), Cramer's Method, Undetermined System, Order Systems.

Probability and Statistics: Interpolation, Statistics, Histogram and Probability, The Normal Distribution, Random number Generation, Interpolation.

Symbolic Processing With MATLAB: Symbolic Expression and Algebra, Algebraic and Transcendental Equations, Calculus, Symbolic Linear Algebra.

Image Processing: Vector Graphics, Morphological Image Processing, Filtering.

Neural Networks: working with neural network tool box.

Working with different tool boxes: like- Voice box, econometrics, robotics, statistics etc.

Unit V

Computational Tool- SPSS

Data files: Entering data, variable types, variable labels, value labels, missing values; Transforming data and creating new variable: recode, computer, count; File manipulations: sort file, split file, select cases, merge files; Drawing random samples; Basic descriptive statistics: descriptive, frequencies, explore, crosstabs; Graphs: histogram error bar, box-plot, bar chart, scatter etc.; Reading data into SPSS data files from outer sources: excel files 7 text files; Advanced statistics procedures such as: y-test, Chi-square, regression, correlation etc.

Syntax files: Creating, editing and running procedures from the syntax file.

Output files: Creating and editing output files; saving output files in WORD.

MS-Power Point: Creating slides, Applying transitions and sound effects, setting up slide shows, Animation.

Web Technologies: How to surf on web? Searching on web, create and access an online account, chat.

REFERENCES

RESEARCH METHODOLOGY:

1. Cooper, "Business Research Methods", Tata McGraw Hill, New Delhi.
2. Fowler, F.J. Survey Research Methods. New Delhi, Sage, 1993.
3. Goode, W.J. and Hatt, P.K. Methods in Social Sciences Research. New Delhi, McGraw Hill, 1986.
4. Leddy, Paul. D Particle Research: Planning Design. London, Clive Bingley. 1980
5. Sabine, Landau, Brian S. Everett. "A handbook of statistical analysis is using SPSS", 2004 by Chapman & Hall/CRC Press LLC.
6. Coffey, A., & Atkinson, P.(1996). Making sense of qualitative data. Thousand Oaks, CA: Sage.
7. Girden, E.R. (1996). Evaluating research articles from start to finish. Thousand Oaks, CA: Sage
8. Mason, J.(1996). Qualitative reasoning. London; Thousand Oaks, CA: Sage
9. Spoull, N.L. (1995). Handbook of research methods: a guide for practitioners and students in the social sciences. (2nd ed.). Metuchen, NJ: Scarecrow Press.
10. Tesch, R. (1990). Qualitative research: analysis types and software tools. New York: Falmer Press.
11. Gentleman, J.F., & Whitmore, G.A. 9 Eds.) (1994). Case studies in data analysis. New York: Springer-Veriag.
12. Mischler, E.G. (1986). Research interviewing: Context and narrative. Cambridge, MA: Harvard University Press.

STATISTICS

1. Andersen, E.B. (1991). The Statistical analysis of categorical data (2nd rev. ed.). New York: Springer-Veriag.
2. Gephart, R.P. (1988). Ethno statistics: Qualitative foundation for quantitative research. Newbury park, CA: Sage
3. Reid. S. (1987). Working with statistics: an introduction to quantitative methods for social scientists. Totowa, N.J.: Rowman & Littlefield.

COMPUTER APPLICATION:

1. P.K. Sinha, Fundamental of Computers, BPB
2. Leon & Leon, Internet for Everyone, Leon Tech World
3. Ron Masfield, MS Office. Tech Publication
4. Raja raman V. (1998), "Introduction to Computers", Prentice Hall of India, New Delhi.



MAHARAJ VINAYAK GLOBAL UNIVERSITY

M.Phil. Syllabus

RESEARCH METHODOLOGY AND QUANTITATIVE TECHNIQUES-MP-1001

Unit I

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4. Leddy, Paul. D Particle Research: Planning Design. London, Clive Bingley. 1980
5. Sabine, Landau, Brian S. Everett. "A handbook of statistical analysis is using SPSS", 2004 by Chapman & Hall/CRC Press LLC.
6. Coffey, A., & Atkinson, P.(1996). Making sense of qualitative data. Thousand Oaks, CA: Sage.
7. Girden, E.R. (1996). Evaluating research articles from start to finish. Thousand Oaks, CA: Sage
8. Mason, J.(1996). Qualitative reasoning. London; Thousand Oaks, CA: Sage
9. Spoull, N.L. (1995). Handbook of research methods: a guide for practitioners and students in the social sciences. (2nd ed.). Metuchen, NJ: Scarecrow Press.
10. Tesch, R. (1990). Qualitative research: analysis types and software tools. New York: Falmer Press.
11. Gentleman, J.F., & Whitmore, G.A. 9 Eds.) (1994). Case studies in data analysis. New York: Springer-Verlag.
12. Mischler, E.G. (1986). Research interviewing: Context and narrative. Cambridge, MA: Harvard University Press.

STATISTICS

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- 2 Gephart, R.P. (1988). Ethno statistics: Qualitative foundation for quantitative research. Newbury park, CA: Sage
- 3 Reid. S. (1987). Working with statistics: an introduction to quantitative methods for social scientists. Totowa, N.J.: Rowman & Littlefield.