



Hemchandracharya North Gujarat University, Patan

PH.D. COURSE WORK SYLLABUS

SUBJECT : LIBRARY & INFORMATION SCIENCE

Scheme & Course

Sr.	Paper	Nomenclature	Credits	Marks
1.	Paper-I-LIB_SCI-CW-101	Research Methodology	04	70+30
2.	Paper-II-LIB_SCI-CW-102	Advance Course in Library & Information Science	04	70+30
3.	Paper-III-LIB_SCI-CW-103	Computer Applications in the subject	04	70+30
4.	Paper-IV-LIB_SCI-CW-104	Review of published research in the relevant field	04	70+30
5.	Paper-V-LIB_SCI-CW-105	Comprehensive Viva	04	100

Notes:

1. The candidate has to obtain a minimum of 55% of marks or its equivalent grade points in aggregate in the course work in order to be eligible to continue in the Ph.D. programme.
2. If candidate obtains 'F' or 'Ab.' grade in the course/ subject. He/ she will be treated to have failed in that course. He/ She has to reappear in the examination in the next semester.

Paper-I LIB_SCI-CW-101 Research Methodology Credit-4 (70+30)

UNIT -I Fundamental of Research

- Research - Definition need and types.
- Qualities of researcher.
- Research methods - Historical, Descriptive, Survey, Experimental, Case study, Scientific, Spiral of scientific Method.
- Application of Research Methods to LiSc.

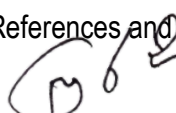
UNIT -II Research Design

- Meaning, definition need and steps of Research Design.
- Identification and formulation of a problem.
- Review of Literature and its importance.
- Hypothesis design.
- Data collection technique.
- Sampling and types of samples.
- Primary and secondary Data and sources, Tabular and graphical representation of data

UNIT - III Research Writing and Documentation

- Research Report writing
- Research paper writing
- Documentation : Preface, Chapters, Appendices
- Quotation -Citation Analysis, Bibliography, References and Ending notes.




Vc. Registrar
Hemchandracharya
North Gujarat University, Patan

UNIT-IV Statistical Methods and tools, Bibliometrics and Webometrics -

- Measures of Central tendency , mean-mode-medium
- Statistical Research methods
- Bibliometrics and Webometrics : concept and definition
- Bibliometrics Factor
- Statistical tools in Research.

UNIT- V Research Ethics

- Research Ethics: definition, significance and issue.

Paper-II LIB_SCI -CW-102 Advance Course in Library & Information Science Credit-4 (70+30)

UNIT-I Ordinary Differential Equations, Numerical Method, Single Step Method, Multi-Step Methods, Predictor, Corrector Methods, Stability Analysis, Boundary Value Problems, Initial Value Methods, Finite Difference Methods.

UNIT-II Improvement of the Initial Solution by Using Method of Bisection, Regula Falsi and Newton-Raphson Method of Fixed Point Iterative Schemes. System of Linear Algebraic Equation and Eigen Value Problem and Errors.

UNIT-III Theory of Automata, Description of a Finite Automaton, Transition System, Properties of Transition Function, Acceptability of a String by a Finite Automaton, Non Deterministic Finite State Machines.

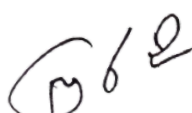
UNIT-IV Markov Analysis Introduction, Stochastic (Random) Process, Markov Process, Transition Probability, Transition Probability Matrix, First Order and Higher Order Markov Process, N-Step Transition Probabilities, Markov Chain, Steady State (Equilibrium) Condition, Markov Analysis (Illustrative Example).

Decision Theory: Introduction, Type of Decisions, Component of Decision Making, Decision Models, Types of Environment, The Expected Monetary Value (EMV), Steps for Calculating EMV, The Expected Value of Perfect Information (EVPI), The Expected Opportunity Loss (EOL), Decision Making Under Uncertainty, Decision Making Under Conflict, Decision Tree Analysis, Decision Making Under Utilities: Utility Function, Utility Curve, Construction of Utility Curve. Posterior Probabilities and Bayesian Analysis.

UNIT-V Sensitivity Analysis Introduction, An Important Lemma, Changes in the Coefficients 'Cj' of the Objective Function, Illustrative Example, Change in the Component 'bi' of Vector. New Variable, Deletion of Existing Variable, Addition of New Constraint, Deletion of Existing Constraint.

1. Kanti Swarup, Gupta, P.K. and Manmohan: Operations Research, Sultan Chand & Sons, New Delhi, India.
2. Sharma, S.D. (2003): Operations Research, Kedarnath Ram Nath & Co. Fourteen edition, Meerut, Indian
3. M.K. Jaio, R.R.K. Iyenger. R.K. Jain: Numerical Methods for Scientific and Engineering Computation, New Age International (P) Ltd.
4. K.L.P. Mishra, N. Chandrashekharan: Theory of Computer Science, PHI-EEE.
5. V. Rajaraman, Computer Oriented Numerical Methods, Printice Hall of India Pvt. Ltd, Delhi.
6. D.S. Heera and P. K. Gupta, Operations Research and Introduction, Sultan Chand & Sons, Delhi.
7. H. A. Taha, Operations Research-An Introduction, Macmillan Publishing Co.




Vc. Registrar
Hemchandracharya
North Gujarat University, Patan

Paper-III	LIB_SCI -CW-103	Computer Applications in the subject	Credit-4	(70+30)
------------------	------------------------	---	-----------------	----------------

UNIT-I	Introduction to Computer fundamental, Characteristics of Computers, Evolution of computers, Computer memory, computer generations, Basic computer organization; System software, Application software, introduction to operating system, single user, multi-user, multi-tasking single tasking, application of computer for business and research, MS-windows.
UNIT-II	MS-Office and its application, File handing in window, various versions of MS-Office, Research publishing tool- MS-Word, Adobe acrobat, Graphics tool- MS-Excel, MS-POwer Point.
UNIT-III	History of C Language, Identifiers in C, Variables and Data Types, Constants, Printf and Scanf, Control Flow - Conditional Branching, the Switch Statement. looping.nested loops, The Break and Continue statement . the goto statement infinite loops. Operators and Expressions: Precedence and associativity. Unary plus and Minus operators. Binary Arithmetic operators arithmetic assignment operators. Increment and decrement operators. Comma Operator, Relational operators, logical operators, bit-Manipulation operators, Bitwise assignment operators. Cast operators size of Operators, Conditional Operators, Memory Operators.
UNIT-IV	Introduction:- Latex and open office, Writing of simple article, letters and applications, Mathematical symbols and commands, arrays, formulas and equations, Spacing, Borders and Colors,Creating different templets, Writing of research article, repots etc. Preparation of templets of thesis and books. Preparation of ppt. poster, etc., Pictnres and Graphics.
UNIT-V	MATLAB introduction: Arithmctic, functions,Jotting the of different functions, Matrix operations, finding roots of an equation, Finding roots of a system of equations, Solving differential eqnations. Basic 2-D plots and 3-D plots.

Recommended Books:

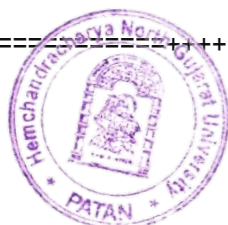
1. Balaguruswami, E.: Programming in C, Tata Mcgraw Hill. (2012)
2. Peter A Darnell and Philip E. Margolis, CA Software Engineering Approched narosa Publishing House (Springer International Student Edition) 1993.
3. Pratap, R.: Getting started with MATLAB, Oxford University Press, 2010.
4. Lynch,S.: Dynamical Systems with Applications using MATLAB, Birkhiuser, 2014.
5. Lamport, L.W.: LaTeX:A document Preparation Systems,Addison-Wesley Publishing Company, 1994.
6. Kopka, Daly, P.W.: Guide to LATEX, Fourth Edition, Addison Wesley, 2004

Paper-IV	LIB_SCI-CW-104	Review of published research in the relevant field	Credit-4	(70+30)
-----------------	-----------------------	---	-----------------	----------------

For this paper candidates will have to review literature in an area of research, prepare a research proposal and submit a report to the University at the end of the course work. The selection of the problem and preparation of the proposal will be in consultation with research guide.

Paper-V	LIB_SCI-CW-105	Comprchensive Viva Voce	Credit-4	(100)
----------------	-----------------------	--------------------------------	-----------------	--------------

Candidate will face a Comprehensive Viva-Voce of 4 credits on the subject of Research Methodology, Advanced Course in Library & Information Science and literature review report submitted to the university. The Presentation will have to be made by the candidate and it will need to be prepared in consultation with research guide.



=====

(Signature)
 Hc. Registrar
 Hemchandracharya
 North Gujarat University, Patan