SCHOOL OF COMPUTATIONAL SCIENCES AND INFORMATION TECHNOLOGY

MASTER OF COMPUTER APPLICATIONS

SEMESTER IV

PROJECT-REPORT WRITING & TECHNICAL COMMUNICATION

COURSE CODE: 05BMCAR17461 **CREDITS: 4**

UNIT I – I

Introduction to Technical report writing: Structure: Title page, summary, contents, Introduction, Objectives, Methodology, Experimental procedure, Results or summary of results, Discussions, references, bibliography, acknowledgements,
appendices.

UNIT II

Stages of report preparation: Gathering the data, analyzing & sorting results, outlining the results. Report style: Requirements for report: Clarity, conciseness, continuity, objectivity, Writing style: writing naturally, guiding the reader, getting to the point, emphasizing major ideas, separating the fact from opinion

UNIT III

Data presentation: Figures, graphs, Drawings, Photographs, Tables, computer programs, spellings, numerals, Rough draft typing **,** Experimental and analysis descriptions: Format of experiment descriptions, apparatus sections Instrumentation section, material section, test procedure section. Format of analysis descriptions, symbols section error and precision.

UNIT IV

Result and discussion: Organization of section, presentation of results, Concluding and supporting sections: Concluding sections: summary of results, conclusions, concluding remarks, Summary section: Abstract title, Acknowledgements, Appendixes, references.

Documents for further study

1. Technical Writing Process and Product,Third Edition PEARSON Education, Sharon J.Gerson & Steven M.Gerson.

2. MLA text book for Report Writing.

8.3 Magazines and Journals

- Springer International Journal of Computer Science
- Elsevier International Journal of Information Sciences
- ACM Transactions on Computer Science Applications
- IEEE Transactions on Computer Science Applications
- International Journal on Intelligent Systems, Wiley
- Digit Magazine
- Computer World
- Developer IQ

8.4 E-learning

- www.monash.edu.au/lls/llonline/writing/engineering/technical-report/index.xml
- www.mech.utah.edu/~rusmeeha/references/Writing.pdf
- https://www.slideshare.net/sajnigroup/technical-report-writing-20531553
- https://unilearning.uow.edu.au/report/3b.html

SEMESTER IV

PROJECT-REPORT WRITING & TECHNICAL COMMUNICATION – PRACTICE

COURSE CODE: 05BMCAR17462 **CREDITS: 2**

LIST OF LAB EXERCISES:

1. Listening comprehension – Achieving ability to comprehend material delivered at relatively fast speed; comprehending spoken material in Standard Indian English, British English, and American English; intelligent listening in situations such as interview in which one is a candidate.
2. Vocabulary building, Creativity, using Advertisements, Case Studies etc.
3. Personality Development: Decision-Making, Problem Solving, Goal Setting, Time Management & Positive Thinking
4. Cross-Cultural Communication: Role-Play/ Non-Verbal Communication.
5. Group Discussion – dynamics of group discussion, Lateral thinking, Brainstorming and Negotiation skills
6. Interview Skills – formal & informal interviews, concept and process, pre-interview planning, opening strategies, answering strategies, interview through tele and video-conferencing
7. Writing Skills - Business Communication, Essays for competitive examinations.
8. Technical Report Writing/ Project Proposals – Types of formats and styles, subject matter – organization, clarity, coherence and style, planning, data-collection, tools, analysis. -Feasibility, Progress and Project Reports.

REFERENCES:

1. Simon Sweeny, “English for Business Communication”, CUP,First South Asian Edition, 2010.
2. M. Ashraf Rizvi, “Effective Technical Communication”, Tata McGraw-Hill Publishing Company Ltd. 2011.
3. Dr A Ramakrishna Rao, Dr G Natanam& Prof SA Sankaranarayanan, “English Language Communication: A Reader cum Lab Manual”, Anuradha Publications, Chennai, 2010.
4. Dr. ShaliniVerma, “Body Language- Your Success Mantra”, S. Chand, 2006.
5. Andrea J. Rutherford, “Basic Communication Skills for Technology”, 2nd Edition, Pearson Education, 2007.
6. Sunita Mishra & C. Muralikrishna, “Communication Skills for Engineers”, Pearson Education, 2014.

SEMESTER IV

COURSE TITLE: SOFT COMPUTING

COURSE CODE: 05BMCAR17463 **CREDITS: 4**

Unit I SOFT COMPUTING & ARTIFICIAL INTELLIGENCE:

Introduction to soft computing, soft computing vs. hard computing, various types of soft computing techniques, applications of soft computing Introduction, Various types of production systems, characteristics of production systems, breadth first search, depth first search techniques, other Search Techniques like hill Climbing. Best first Search, A* algorithm, AO* Algorithms and various types of control strategies. Knowledge representation issues, Prepositional and predicate logic, monotonic and non-monotonic reasoning, forward Reasoning, backward reasoning, Weak & Strong Slot & filler structures, NLP

UNIT II NEURAL NETWORK:

Structure and Function of a single neuron: Biological neuron, artificial neuron. definition of ANN, Taxonomy of neural net, Difference b/w ANN and human brain, characteristic and applications of ANN, single layer network Perception training algorithm, linear separability, Window& Hebb's learning rule/Delta rule, ADALINE, MADALINE. AI v/s ANN. Introduction of MLP, different activation functions, Error back propagation algorithm, derivation of BBPA, momentum, limitation, characteristics and application of EBPA.

UNIT III COUNTER PROPAGATION NETWORK AND FUZZY SYSTEMS:

Architecture, functioning & characteristics of counter Propagation network, Hop field/ Recurrent network, configuration, stability constraints. Associative memory, and characteristics, limitations and applications. Hopfield v/s Boltzmann machine. Adaptive Resonance Theory. Architecture, classifications, Implementation and training. Associative Memory. Fuzzy set theory, Fuzzy set versus crisp set, Crisp relation & fuzzy relations, Fuzzy systems. Crisp logic, fuzzy logic, introduction & features of membership functions

UNIT IV FUZZY RULE SYSTEMS &GENETIC ALGORITHM:

Fuzzy propositions, formation, decomposition & aggregation of fuzzy Rules, fuzzy reasoning, fuzzy inference systems, fuzzy decision making & Applications of fuzzy logic, Fundamental, basic concepts, working principle, encoding, fitness function, reproduction Genetic modeling: Inheritance operator, cross over, inversion & deletion, mutation operator, Bitwise operator, Generational Cycle, Convergence of GA, Applications & advances in GA, Differences & similarities between GA & other traditional methods.

Documents for further study

1. S.N. Sivanandam & S.N. Deepa, Principles of Soft Computing, Wiley Publications, 2nd Edition, 2011.

2. S, Rajasekaran & G.A. Vijayalakshmi Pai, Neural Networks, Fuzzy Logic & Genetic Algorithms, Synthesis & applications, PHI Publication, 1st Edition, 2009.

3. N.K.Bose, Ping Liang, *Neural Network fundamental with Graph, Algorithms & Applications*, TMH, 1st Edition, 1998.
4. Bart Kosko, *Neural Network & Fuzzy System*, PHI Publication, 1st Edition, 2009.
5. Rich E, Knight K, *Artificial Intelligence*, TMH, 3rd Edition, 2012.
6. George J Klir, Bo Yuan, *Fuzzy sets & Fuzzy Logic,* Theory& Applications, PHI Publication, 1st Edition, 2009.

8.3 Magazines and Journals

- IEEE Journals Computer Science and Research
- Springer Journals of Computer Science
- Scopus Journals Computer Science and Engineering
- Journals of WOS for Computer Science and Information Technology

8.4 E-learning

- http://www.iitk.ac.in/kangal/codes.shtml
- http://www.springer.com/in/book/9783790814361
- http://mlsc.disi.unige.it/
- https://www.ellibs.com/fi/book/9783540323914/soft-computing-as-transdisciplinary-science-and-technology