Semester II

(Structure-I and Structure-II of Two-Year PG Program in Operational Research)

SKILL BASED COURSE
SBC - 2(b): BUSINESS COMMUNICATION AND COMPUTATIONAL ANALYSIS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Business Communication and Computational Analysis (SBC - 2(b))	**2**	**1**	**0**	**1**	**Graduation**	**Nil**

Learning Objectives:

The Learning Objectives of this course are:
- To develop strong business communication competencies.
- To impart hands-on computational skills using MATLAB for analytical tasks.

Learning Outcomes:

Upon successful completion of this course, students will be able to:
- Communicate effectively in academic and professional contexts through structured documents, reports, summaries, and presentations using appropriate digital tools.
- Interpret and articulate computational results clearly in written form to support analytical reasoning.
- Integrate communication and computational skills to produce coherent, data-informed outputs for business and academic applications.

Syllabus of SBC-2(b):

Unit I: Business Communication & Presentation Tools (7 hours)
Introduces foundational communication principles for professional and academic needs. Includes verbal, non-verbal, and written communication, communication barriers, ethics, and tone. Hands-on writing practice: emails, notices, minutes, resumes, and cover letters. Speaking modules: interviews, meetings, and group discussions. MS Word/Google Docs for report structuring, formatting, citations, visualization, proofreading, and collaboration. Guidelines for preparing proposals, policy briefs, and executive summaries. Presentation design using MS PowerPoint/Google Slides.

Unit II: MATLAB for Computational Analysis & Reporting (8 hours)

Introduction to MATLAB interface: Command Window, Editor, Workspace. Variables, arrays, matrices, logical operations, vectorization. Loops, conditionals, scripts, functions, and data import/export. Descriptive statistics, data cleaning, and simple analytical workflows. 2D/3D plotting, histograms, contour plots, surface plots. Basic optimization, curve fitting, and result interpretation. Integrating MATLAB outputs into business-style reports and presentations.

Practical component: (30 hours)

Students shall indulge in performing Practical in Computer Lab according to the above theory syllabus.

1. Writing a professional email for academic or business communication.
2. Minutes Writing: Recording minutes of a mock meeting or group discussion.
3. Creating a job-ready CV, and customized cover letter.
4. Preparing a one-page executive summary of a given case study.
5. Creating professional presentation using visual hierarchy, charts, and infographics.
6. Exploring the MATLAB interface; creating variables, arrays, and matrices.
7. Writing simple scripts and user-defined functions in MATLAB.
8. Importing datasets (CSV/Excel) into MATLAB and exporting results.
9. Writing MATLAB programs using loops and conditionals.
10. Computing means, median, mode, variance; handling missing values.
11. Creating 2D/3D plots, histograms, contour plots, and integrating them into a report.

Essential Readings:

1. Ober, S., & Newman, A. (2015). *Communicating in business*. Cengage Learning.
2. Hunt, B. R., Lipsman, R. L., & Rosenberg, J. M. (2017). *A guide to MATLAB for Beginners and Experienced Users.* Cambridge University Press.
3. Raman, M., & Sharma, S. (2015). *Technical communication: Principles and Practice.* Oxford University Press.
4. Guffey, M. E., & Loewy, D. (2022). *Business communication: Process and Product*. Cengage Learning.

Suggested Readings:

1. Anderson, P. V. (2014). *Technical communication: A reader-centered approach*. Wadsworth.
2. Barnes, B., & Fulford, G. (2015). *Mathematical modelling with case studies*. CRC Press.
3. Locker, K. O., & Kaczmarek, S. (2013). *Business communication*. McGraw-Hill.
4. Williams, T. (2017). *MATLAB for engineers*. Pearson.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.