



Guru Gobind Singh  
Indraprastha University

UNIVERSITY SCHOOL OF MANAGEMENT STUDIES  
GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY  
DWARKA, SECTOR 16-C, DELHI 110078

Ref: GGSIPU/USMS/Ph.D/BOS/2020-21/

Date: 12<sup>th</sup> October 2021

MINUTES OF THE MEETING

A meeting of Board of Studies of the School was held on 12<sup>th</sup> October 2021 at 4.00 pm in the online mode (ggsipu.webex.com).

The following members attended the meeting.

1. Prof Anil Kumar Saini (Chairperson)
2. Prof Neena Sinha (Member)
3. Prof Uditaneja (Member)
4. Prof Meenakshi Handa (Member)
5. Prof Vijita S Aggarwal (Member)
6. Prof Puja Khatri (Member)
7. Prof. Sanjay Dhingra (Member)
8. Dr/ Gagandeep Sharma
9. Mr Amit Sharma (Member)
10. Ms Bharti (Member)
11. Dr N Malati (Member)
12. Dr Shamsheer Singh (Member)
13. Dr C Jayakumar (Member)
14. Mr Amit Gupta (Member)

The following members could not attend the meeting:

1. Prof Shalini Garg (Member) – On CC leave
2. Dr D P Goyal (Member)
3. Dr Kavita Singh (Member)
4. Mr. Sukhjit S Pasricha (Member)

The following agenda was transacted and decisions taken.

**Item-1:** Confirmation of the minutes of BOS held by circulation on 16/3/2021.

The minutes of the meeting of the Board of Studies held by circulation were confirmed.

**Item-2:** Approval of the Scheme and Syllabus of the 1st year (Semester 1 and Semester 2) of following Programs for Academic Session 2021-22. MBA, MBA (Financial Analysis), MBA (International Business), MBA (Financial Management), BBA, BBA (Banking and Insurance), BBA (CAM), and B.Com. (H).

Chairperson explained the process followed for the design and development of various program schemes to the members of the Board. The complete participation of all stakeholders was ensured.

The program coordinators under the mentorship of a Professor Incharge from USMS held discussions about the scheme. This was done in the light of the feedback received from stakeholders including Teachers, students, alumni and employers as well as the

requirements of NEP 2020. Based on this after thorough discussions two times with the senior faculty, a framework was developed to keep uniformity across similar kind of programs. The entire scheme was designed with Outcome Based Education (OBE) approach and the Program Outcomes and Program Specific Outcomes were revisited and improved and the scheme of programmes was designed. These were shared with all affiliated colleges and suggestions were invited. Based on this, the scheme of all programs was finalised.

However in view of non-availability of complete clarity on 3 years and 4 years UG program as well as 2 year PG program, the scheme and detailed course content was developed only for 3 years UG and 2 years PG programmes. The provision of skill based, entrepreneurship oriented, and CBCS courses were considered. The scheme also included compulsory courses as per the decision of the Academic Council for UG and PG programmes such as: Entrepreneurial Mindset, Environmental Studies and NCC/NSO etc.

The course contents were then developed by the Program Coordinators for the Ist and IInd Semesters only with the help of various faculty members. Course outcomes were defined with proper mapping on the POs and PSOs.

The complete scheme and syllabus of all programs were again circulated to colleges conducting the programmes through the nominated faculty of colleges as well as senior faculty of USMS. On the basis of the feedback received by due date,, the draft scheme and syllabus have been finalised.

The scheme and syllabus for all programmes were presented to the members.

Dr Malti requested to send some more suggestions in the contents of certain subjects for consideration in the syllabus.

The members approved the scheme for the entire program and syllabus for Ist and IInd semesters for MBA, MBA (Financial Analysis), MBA (International Business), MBA (Financial Management), BBA, BBA (Banking and Insurance), BBA (CAM), and B.Com. (H).

The chairperson assured members to send the final formatted copy of the scheme and syllabus for information to all the members.

**Item-3:** Approval of the Scheme and Syllabus of the Ph.D. Course work for Academic Session 2021-22.

The chairperson briefed the members that the scheme of Ph.D. course work was prepared and discussed in the SRC meeting held on 8<sup>th</sup> October 2021. The SRC members approved the proposed scheme as well as the detailed syllabus for the subjects.

The modified scheme was placed for approval by the members for implementation we.f academic session 2021-22.

The members approved the Ph.D. course work scheme and syllabus we.f academic session 2021-22.



**Item-4:** Approval of the panel of examiners for the programmes being offered by USMS and/or affiliated colleges.

The panel of examiners for the programmes being offered by USMS and/or affiliated colleges have been prepared and constantly reviewed by respective school level committees. However the process of identifying the examiners and the requirements of preparing MCQ based question papers require more paper setters to be included.

The members authorised the Dean and empowered him to approve the panel on behalf of the BOS as well as adding more names to meet the exigencies in case additional examiners are required, by the Examination branch.

**Item-5: Any Other Matter**

a) Approval of the Co-Supervisors in respect of Ph.D. Scholars under Prof Sanjiv Mittal.

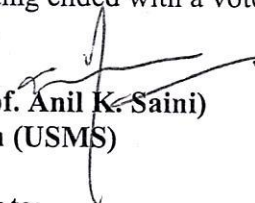
The members were apprised about the need for allocating Joint Supervisor in respect of three Scholars, on account of Prof. Sanjiv Mittal proceeding on long leave. This has been done as per the Ph.D. Ordinance and approved by SRC.

Scholar Name	Supervisor Name	Joint Supervisor Name
Ms. Aarti Dhanrajani	Prof. Sanjiv Mittal	Dr. Deepti Prakash
Ms. Nishat Athesham	Prof. Sanjiv Mittal	Prof. Sanjay Dhingra
Ms. Nitika Aggarwal	Prof. Sanjiv Mittal	Prof. Sanjay Dhingra

The members approved the allocation of Joint Supervisors in the above cases.

b) Prof. A K Saini requested the industry members to kindly advise some prominent names for strengthening of the Industry Interaction Cell of the School to help both the students and the faculty. Dr Jayakumar assured to extend help in this regard by suggesting few references.

Meeting ended with a vote of thanks to the Chair.

  
(Prof. Anil K. Saini)  
Dean (USMS)

Copy to:

1. All BOS members for information, please.

**GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY**  
**DWARKA, NEW DELHI-110078**

# **MBA**

## **Scheme and Syllabus** **2021-22 onwards**

**Entrepreneurship | Employability | Skill Development**

## **Background Note:**

### **Need for Syllabus Revision:**

The last revised MBA program scheme was launched by University from 2017-18. The program was quite contemporary and aimed at preparing individuals to serve the business needs at various levels of management in different functional areas. As per the feedback of students, alumni, teachers and Employers, a need was felt to update the curriculum of the MBA program to make it more focused and industry ready. In addition, with New Education Policy 2020, the curriculum of MBA was required to incorporate the features such as: CBCS, Multi-entry and Multi-exit, Academic Bank of Credits, etc. The current syllabus and scheme has been worked out for 2 years with flexible entry and exit.

The whole syllabus of MBA is divided into following types:

- a) Core Papers
- b) Ability Enhancement Papers
- c) Skill Enhancement Papers
- d) Discipline Specific Elective Papers
- e) NUES
- f) Projects
- g) MOOC Courses

## **Master of Business Administration**

### **Programme Outcomes (POs)**

On completing the programme students should be able to:

**PO1:** Demonstrate an understanding of management concepts, principles and theories, and apply them in the context of organizational work practices.

**PO2:** Apply analytical and critical thinking skills to analyze the dynamic business environment and identify entrepreneurial and business opportunities and risks.

**PO3:** Prepare business strategies, develop concomitant functional and operational strategies and implement them in an integrated manner to efficiently and effectively achieve the functional goals and the business objectives.

**PO4:** Demonstrate an understanding of decision making processes at various levels of the organization with respect to resources mobilization and their efficient deployment and use to achieve the set goals.

**PO5:** Demonstrate the ability to analyze management problems, to identify and collect relevant data and to apply a creative problem-solving approach.

**PO6:** Identify and recommend the information technology based interventions to achieve organizational goals

**PO7:** Benchmark organizational and managerial practices against the principles of good governance, ethical conduct, corporate social responsibility and the imperatives of long-term societal welfare.

**PO8:** Demonstrate effective communication and interpersonal skills as well as the ability to work with and lead teams.

**PO9:** Develop a lifelong learning approach manifested in their attitude to learn, unlearn and relearn and in their pursuit of excellence in professional, personal and social life.

**SCHEME OF EXAMINATION**

**&**

**SYLLABI**

**of**

**MASTER OF BUSINESS ADMINISTRATION**

**for**

**First and Second Semesters**

**(w.e.f. 2021 – 2022 Academic Session)**



**GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY  
DWARKA, NEW DELHI-110078**

**GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, NEW DELHI  
MASTER OF BUSINESS ADMINISTRATION (MBA)**

**SCHEME OF EXAMINATIONS**

**Criteria for Internal Assessment**

All theory courses have internal assessment of 25 marks and 75 marks for external examination. For the courses related to labs, summer training and projects, internal assessment is 40 marks and external examination is 60 marks.

The internal assessment of the students (out of 25 marks) shall be as per the criteria given below:

- 1. Class Test** - **15 marks**  
Written Test Compulsory (to be conducted as per Academic Calendar of the University)
  
- 2. Individual Assignments/Presentation/Viva-Voce/Group Discussion/Class Participation** - **10 marks**

**Note: Record should be maintained by faculty and made available to the University, if required.**

**The student will be evaluated continuously during the semester as part of internal assessment.**

**MAXIMUM & MINIMUM CREDITS OF THE PROGRAM**

The total number of the credits of the MBA Programme is **108**.

Each student shall be required to appear for examination in all courses. However, for the award of the degree a student should secure at least **102** credits.



## SCHEME OF EXAMINATION

**GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, NEW DELHI**

**MASTEROFBUSINESSADMINISTRATION**

**FIRST SEMESTER**

<b>Code No.</b>	<b>Paper</b>	<b>Type</b>	<b>L</b>	<b>T/P</b>	<b>Credits</b>
MS 101	Management Process and Organisational Behaviour	Core/Open Elective	3	-	3
MS 103	Quantitative Techniques	Core	3	-	3
MS 105	Managerial Economics	Core	3	-	3
MS 107	Accounting for Management	Core	3	-	3
MS 109	Information Technology Management	Skill Enhancement	3	-	3
MS 111	Marketing Management	Core/Open Elective	3	-	3
MS 113	Communication in Organizations	Ability Enhancement	2	1	3
MS-115	Legal Aspects of Business	Core/Open Elective	3	-	3
MS 117	Information Technology Management Lab	Skill Enhancement		2	1
	Total		23	3	25

### **Industrial Visit:**

There may be one Industrial Visit for the students in the 1<sup>st</sup> Year either in the First Semester or Second Semester. The students will be required to submit a report and present the same to their Industrial Visit In-Charge.

**GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, NEW DELHI**

**MASTER OF BUSINESS ADMINISTRATION (MBA)**

**SECOND SEMESTER**

<b>Code No.</b>	<b>Paper</b>	<b>Type</b>	<b>L</b>	<b>T/P</b>	<b>Credits</b>
MS 102	Technology and Innovation Management	Core/ Open Elective	3	-	3
MS 104	Financial Management	Core	3	-	3
MS 106	Business Research	Core	3	-	3
MS 108	Sustainable Operations Management	Core/Open Elective	3	-	3
MS 110	Management of Information Systems	Core	3	-	3
MS 112	Human Resource Management	Core/ Open Elective	3	-	3
MS 114	Minor Project	Ability Enhancement	-	-	4
MS 116	Professional Skill Development(NUES)	Skill Enhancement	2	1	3
MS-118	MOOC/Open Elective*	Ability Enhancement	3	-	3
	<b>Total</b>		<b>23</b>	<b>1</b>	<b>28</b>

**Note:**

\*The student is required to choose one MOOC course of 3 credits at PG level as per his or her preference/choice from Swayam portal or any other online educational platform approved by the UGC / regulatory body from time to time. After completing the course, the student has to produce successful course completion certificate for claiming the credit. The course chosen by the student should be intimated to the MOOC Coordinator of the respective institution. Alternatively, student can pursue any course at PG level offered in the campus by any USS/College with due intimation to the Program Coordinator/Dean/Director of the School/College.

The Student is required to undergo Summer Training of Six to Eight Weeks after the end-term exam of 2nd Semester and obtain a Certificate of Training from the organization as per the format prescribed.

**A Post-Graduate Diploma in Management will be awarded, if a student wishes to exit at the end of first year/second semester upon successful completion.**

**A Student having qualified in Post Graduate Diploma in Management from GGSIP University can join the MBA programme in 3<sup>rd</sup> Semester any time during the period. The procedure for depositing credits earned, its shelf life, redemption of credits, would be as per UGC (Establishment and Operationalisation) of Academic Bank of credits (ABC) scheme in higher education) Regulations 2021. The admission would be subject to availability of seats in the programme. Number of years spent for studies of this programme cannot be more than N+2 years.**

**GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, NEW DELHI**

**MASTER OF BUSINESS ADMINISTRATION (MBA)**

**THIRD SEMESTER**

<b>Code No.</b>	<b>Paper</b>	<b>Type</b>	<b>L</b>	<b>T/P</b>	<b>Credits</b>
MS 201	Summer Training Report	Ability Enhancement	-	-	4
MS 203	Management of International Business	Core	3	-	3
MS 205	Managing E-Business	Core	3	-	3
MS 207	Entrepreneurship Development & Startup	Core/ Open Elective	3	-	3
MS 209	Strategic Management	Core	3	-	3
MS 211	Business Analytics	Skill Enhancement	2	-	2
	<b>Specialization I</b>				
	Elective –I	Discipline Specific Electives	3	-	3
	Elective –II	Discipline Specific Electives	3	-	3
	<b>Specialization II</b>				
	Elective -I	Discipline Specific Electives	3	-	3
	Elective -II	Discipline Specific Electives	3	-	3
MS 263	MOOC/Open Elective*	Ability Enhancement	3	-	3
MS 265	Business Analytics Lab	Skill Enhancement	-	2	1
	<b>Total</b>		29	2	34

\*The student is required to choose one MOOC course of 3 credits as per his or her preference/choice from Swayam portal or any other online educational platform approved by the UGC / regulatory body from time to time. After completing the course, the student has to produce successful course completion certificate for claiming the credit. The course chosen by the student should be intimated to the MOOC Coordinator of the respective institution. Alternatively, student can pursue any course at PG level offered in the campus by any USS/College with due intimation to the Program Coordinator/Dean/Director of the School/College.

- The Students may undertake Education cum Industrial Tour to any station within India or Abroad (optional) with the prior permission of Dean/Director.
- For Project Dissertation to be done in 4<sup>th</sup> Semester, the allocation of Project Guide and selection of Topic will be done at the commencement of the 3<sup>rd</sup> Semester and notified.

- Students can choose/select atleast two papers of their choice from the two specialisation areas i.e. Dual Specialisation. For earning a specialisation, a student is required to study four papers from each specialisation stream. The two papers would be selected in III semester and two papers would be selected in IV semester. This will help a student to earn two specialisation streams i.e. Dual Specialisation.

## **ELECTIVES-I AND II**

### **Electives of Marketing**

<b>Code No</b>	<b>Paper</b>
MS -213	Consumer Behavior
MS-215	Sales and Distribution Management
MS -217	Services Marketing
MS -219	Customer Relationship Management

### **Electives of Finance**

<b>Code No</b>	<b>Paper</b>
MS -221	International Financial Management
MS -223	Financial Markets and Institutions
MS -225	Investment Analysis & Portfolio Management
MS -227	Financial Econometrics

### **Electives of HR**

<b>Code No</b>	<b>Paper</b>
MS -229	Management of Training, Learning and Development
MS -231	Managing Industrial Relations
MS -233	Talent Management
MS -235	Compensation and Performance Management

### **Electives of IT**

<b>Code No</b>	<b>Paper</b>
MS -237	Digitalization and E-Governance
MS -239	Artificial Intelligence & Machine Learning
MS -241	Database Management Systems
MS -243	Database Management Systems Lab
MS -245	Enterprise Systems

### **Electives of International Business**

<b>Code No</b>	<b>Paper</b>
MS -247	International Business Environment and Strategy
MS -249	Export, Import Policies, Procedures and Documentation
MS -251	International Financial Management
MS -253	International Business Negotiation

### **Electives of Operations & Analytics**

<b>Code No</b>	<b>Paper</b>
MS -255	Enterprise Systems
MS -257	Operations Strategy
MS -259	Logistics and Supply Chain Management
MS -261	Predictive Analytics & Big Data

## FOURTH SEMESTER

Code No.	Paper	Discipline	L	T/P	Credits
MS 202	Project Dissertation	Ability Enhancement	-	-	6
MS 204	Corporate Social Responsibility, Human Values & Ethics	Ability Enhancement	3	-	3
	<b>Specialization-I</b>				
	Elective -III	Discipline Specific Electives	3	-	3
	Elective -IV	Discipline Specific Electives	3	-	3
	<b>Specialization II</b>				
	Elective -III	Discipline Specific Electives	3	-	3
	Elective -IV	Discipline Specific Electives	3	-	3
	Total		15	-	21

- **Students can choose/select two papers of their choice from the two specialisation areas i.e. Dual Specialisation already selected by them in 3<sup>rd</sup> Semester.**
- **Students can choose/select two papers of their choice from the two specialisation areas i.e. Dual Specialisation. For earning a specialisation, student is required to study four papers from each specialisation stream. The two papers would be selected in III semester and two papers would be selected in IV semester. This will help a student to earn two specialisation streams i.e Dual Specialisation.**

### ELECTIVES-III AND IV

#### Electives of Marketing

##### **Code No Paper**

MS -206 Advertising & Brand Management

MS -208 Digital & Social Media Marketing

MS -210 Marketing Analytics

MS -212 Retail Management

#### Electives of Finance

##### **Code No Paper**

MS -214 Mergers, Acquisitions and Corporate Restructuring

MS -216 Financial Derivatives

MS -218 Behavioral Finance

MS -220 FinTech

**Electives of HR**

<b>Code No</b>	<b>Paper</b>
MS -222	Managing Organizational Development
MS -224	Leadership and Teamwork in Blended Organizations
MS -226	People Analytics
MS -228	Managing Diversity and Inclusion

**Electives of IT**

<b>Code No</b>	<b>Paper</b>
MS -230	Advanced Business Analytics & Predictive Modelling
MS -232	Information Security
MS -234	Data Modelling with Python
MS -236	Business Intelligence and Applications

**Electives of International Business**

<b>Code No</b>	<b>Paper</b>
MS -238	Global Competitiveness
MS -240	WTO and Intellectual Property Rights
MS -242	International Human Resource & Cross Cultural Management
MS -244	International Marketing

**Electives of Operations & Analytics**

<b>Code No</b>	<b>Paper</b>
MS -246	Business Process Management
MS -248	Advanced Business Analytics & Predictive Modelling
MS -250	Project Management
MS -252	Supply Chain Analytics

**Note:**           **Total Credits**                           **-108**  
                          **Minimum Credit Required - 102**

### Summary of Credits

<b>S. No.</b>	<b>Semester</b>	<b>Credits</b>	<b>Core</b>	<b>Skill Enhancement</b>	<b>Ability Enhancement</b>	<b>Discipline Specific Electives</b>	<b>Projects</b>	<b>Mooc</b>
1	I	25	18	4	3			
2	II	28	18	3	7		1	1
3	III	34	12	3	7	12	1	1
4	IV	21	0	0	9	12	1	
		108	48	10	26	24	3	2

# **SEMESTER- I**



**GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, NEW DELHI**  
**MASTER OF BUSINESS ADMINISTRATION (MBA)**

**Management Process & Organizational Behaviour**

**Course Code: MS-101**

**L-3 Credits-3**

**Objectives:** This course is designed to expose the students to fundamental concepts of management, its process and behavioral dynamics in organizations.

**Course Outcomes (COs)**

**CO1:** Enumerate, explain, compare and analyze the concepts, theories and principles that have evolved in specific historical contexts and informed both academic thinking and practices related to the field of management.

**CO2:** Identify and discuss the functions of management i.e. planning, organizing, leading and controlling, relate them with the roles of managers at different levels of the organization and classify the skills necessary for effective performance of their functions.

**CO3:** Apply the knowledge of management theory and of organizational behaviour to analyze managerial issues and take decisions consistent with the organizational objectives of efficiency and effectiveness.

**CO4:** Analyze the complexities of work organizations and develop a multidisciplinary approach to address interpersonal and intra organizational issues.

**Course Contents**

**Unit I**

Introduction to Management: Meaning and Nature of Management, Evolution of Management, Tasks and Responsibilities of a Professional Manager, Management by Objectives, Case Study.  
**(8 hours)**

**Unit II**

Process of Management: Planning- Concept, Process and Techniques, Directing – Definition, Principles and Process, Controlling - Definition, Process and Techniques, Decision Making – Concept, Importance and Models, Case Study.  
**(8 hours)**

**Unit III**

Fundamentals of Organizational Behaviour: Organizational Behaviour - Nature and Scope, OB Models – merits and demerits, Personality – concept and types, Perception and Attitude, Learning – concept and theories, Motivation – definition, importance and theories, Managing stress at Work – concept and techniques, Organization Structure – concept and types, Case Studies.

Organizational Processes and Structure: Organizational Design and Structure, Organizational Culture and Climate, Cross Cultural Organizational Behavior  
**(16 hours)**

**Unit IV**

Group and their Dynamics, Work Teams: Group and their dynamics – Concept and Types, Work Teams – definition and importance, Stages of team Building and its behavioral dynamics, Leadership - Concept, Importance and Styles, Organizational Justice - Concept, Importance and Types.  
**(10 hours)**

**Suggested Books: (All Latest Editions)**

1. Robbins. Judge, S.P., T.A., Vohra, N. Organizational Behaviour. Pearson Education
2. Nahavandi, A. et al., Organizational Behavior. Sage Publication
3. Greenberg, J. and Baron, R.A. Behaviour in Organization. Pearson Education
4. Stoner, J.A.F., Freeman, R.E., Kodwani, A.D., et.al. Management. Pearson Education.
5. Newstorm, J.W. & Davis, K. Organizational Behaviour Human Behaviour at Work, McGraw Hill Education
6. Koontz, H, Wehrich, H, Mark V, Cannice, M.V. Essentials of Management – An International Innovation and Leadership Perspective, MC.Graw Hill.

**GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, NEW DELHI**  
**MASTER OF BUSINESS ADMINISTRATION (MBA)**

**QUANTITATIVE TECHNIQUES**

**Course Code: MS-103**

**L-3 Credits-3**

**Objectives:** To provide understanding on relevance & need of quantitative methods for making business decisions, to have a sound knowledge of fundamentals of statistics and statistical techniques, be able to read and interpret statistical information, be able to perform statistical analysis for effective decision making in organizations.

**Course Outcomes (COs)**

**CO1:** Identify and differentiate between different statistical techniques and methods.

**CO2:** Explain the merits and limitations of various statistical techniques.

**CO3:** Demonstrate effective computational and spreadsheets skills for business analysis.

**CO4:** Analyse and interpret statistical information from the business data and reports.

**CO5:** Apply quantitative techniques to solve a variety of business problems.

**Course Contents**

**Unit I**

**Descriptive Statistics: Measures of central tendency, concept of dispersion, measures of dispersion: absolute and relative measures, skewness-meaning and measures, kurtosis-meaning and measures, bivariate analysis: concept of correlation, measures of correlation, regression meaning, regression lines, OLS regression: assumptions, computation of regression coefficients, standardized and unstandardised regression coefficients. Decision making based on Regression Analysis (12 hours)**

**Unit II**

**Probability Analysis – Concept and meaning of probability, theorems of probability: addition, multiplications, Bayes’theorem, probability distribution: Discrete and Continuous distribution-binomial, Poisson and Normal Distribution. Application of Probability in decision making. (10 hours)**

**Unit III**

**Linear Programming : Meaning, Assumptions, formulation of linear programming model: solution of linear programming problem: graphical and simplex method, Special types of linear programming problems- assignment modeling, solution of assignment problem with Hungarian assignment model, travelling salesman model, transportation model, applications, computation of initial feasible solution and testing its optimality, concept of trans-shipment. (10 Hours)**

**Unit IV**

**Decision theory: States of decision making, decision tree analysis, game theory: meaning concept and types of games, principles of dominance, solution of games with algebraic, graphical and simplex method (10 hours)**

**Suggested Readings: (All Latest Editions)**

1. Sharpe, N.R., De Veaux, R.D., and Velleman, P.F. Business Statistics, Pearson
2. Black, K. Business Statistics: For Contemporary Decision Making. India, Wiley Publication.
3. Vohra, N.D. Quantitative Techniques in Management. McGraw Hill Education.
4. Sharma, J. Operations Research: Theory and Application. India, Macmillan Publication.
5. Francis, Joseph J. Business Statistics, Cengage Publication
6. Aczel, Amir D., Sounderpandian, J.,& Saravanan P. Complete Business Statistics, India: McGraw Hill Education.

## Managerial Economics

Course Code: MS-105

L - 3, Credits - 3

**Objectives:** The course is aimed at building a perspective necessary for the application of modern economic concepts, precepts, tools and techniques in evaluating business decisions taken by a firm. The course will also look at recent developments in business in the context of economic theory.

### Course Outcomes (COs)

**CO1:** Examine various economic ideologies, economic theories and techniques of economic analysis and discuss their relevance for managerial decision making.

**CO2:** Identify and explain factors influencing supply and demand, analyze the dynamic role of markets in allocation of productive resources in a free market economy and offer critique of market based model from sustainable development perspective.

**CO3:** Examine various approaches and models that explain consumer choices and behaviour and apply them for analyzing the demand.

**CO4:** Discuss the theory of production and analyze the effects of technology and variations in input proportions on output, both in the short run and long run.

**CO5:** Identify and compare different market structures and analyze pricing and output decisions in different market forms.

**CO6:** Analyze business cycles, macro-economic conditions and policies and develop effective business strategies.

### Course Contents

#### Unit I

**Introduction:** Nature, Scope and Significance of Managerial Economics, its Relationship with other Disciplines, Role of Managerial Economics in Decision Making; Opportunity cost Principle, Incremental Concept, Cardinal and Ordinal Approaches to Consumer Behaviour: Equi-Marginal Principle, Law of Diminishing Marginal Utility, Indifference Curve Analysis.

(12 Hours)

#### Unit II

**Demand Analysis and Theory of Production:** Demand Function, Elasticity of Demand, Demand Forecasting, Applications of Demand Analysis in Managerial Decision Making; Theory of Production: Production Function, Short Run and Long Run Production Analysis, Isoquants, Optimal Combination of Inputs.

(10 Hours)

#### Unit III

**Theory of Cost and Market Structures:** Theory of Cost in Short and Long Runs, Market Structures: Price-Output decisions under Perfect Competition, Monopoly, Monopolistic Competition and Oligopoly

(10 Hours)

#### Unit IV

**Introduction to Macro Economics:** Nature and Importance of Macro Economics; Market, Command, and Mixed Economies, The Invisible Hand. The economic role of government.; Economic Growth and Development; policy framework of money supply, inflation, and interest rates

(10 Hours)

### Suggested readings: (All Latest Editions)

1. Hirschey, M. Managerial Economics. Thomson South-Western. Salvatore, D. Managerial Economics in a Global Economy. McGraw-Hill.
2. Samuelson, W. F., & Marks, S. G. Managerial economics. John Wiley & Sons.

3. Truett, Dale B. and Truett J. Lila . Managerial Economics: Analysis, Problems, Cases, John Wiley & Sons.
4. Petersen, H. C., Cris, L W and Jain, S.K. Managerial Economics, Pearson Education
5. Satya P Das. Microeconomics for Business, Sage Publishing

**GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, NEW DELHI  
MASTER OF BUSINESS ADMINISTRATION (MBA)**

**Accounting for Management**

**Course Code: MS-107**

**L - 3, Credits - 3**

**Objectives:** The course aims at enabling students to understand the basic accounting principles and techniques of preparing & presenting the accounts for users of accounting information. The course also familiarizes the students with the basic cost and management accounting concepts and their applications in managerial decision making.

**Course Outcomes (COs)**

**CO1:** Demonstrate sound understanding of fundamental accounting principles, accounting standards and accounting techniques.

**CO2:** Construct financial statements by collecting, recording and classifying the financial information from divergent sources.

**CO3:** Critically analyse and interpret financial statements of a company.

**CO4:** Demonstrate the ability to extract and use meaningful financial information for managerial decision making.

**Course Contents**

**Unit I**

**Financial Accounting:** Scope and Nature of Accounting, Accounting concepts, Principles & Standards, Accounting Cycle, Journalisation, Subsidiary Books; Ledger Posting, Preparation of Trial Balance, Rectification of Errors. Capital and Revenue Expenditure & Income. Fixed Assets and Depreciation Accounting. Preparation of Final Accounts, Manufacturing Account; Trading Account, Profit and Loss Account; Balance Sheet (with adjustments) **(12 Hours)**

**Unit II**

**Cost Accounting:** Objectives, Classification of Cost, Preparation of Cost Sheet, Material Cost Accounting, Perpetual Inventory Control, Inventory Valuation, EOQ, ABC Analysis, Setting of Reorder Level, Maximum Level, Minimum Level, Labour Costing, Overhead Cost Allocations, Over and Under Absorption. **(10 Hours)**

**Unit III**

**Performance Evaluation Techniques:** Introduction to Budgeting and Budgetary Control; Performance Budgeting; Classification of Budget; Fixed and Flexible Budgets, Zero Based Budgeting, Standard Costing and Variance Analysis; Balanced Scorecard; Responsibility Accounting. **(10 Hours)**

**Unit IV**

**Decision Making Techniques:** Financial Statement Analysis, Ratio Analysis, Common Size Statements, Du Pont Analysis, Marginal Costing, Application of Marginal Costing in Decision Making, Cost Volume Profit Analysis; Profit Planning, Management Accounting for Decision Making and Control; EVA; Introduction to Activity Based Costing, Target Costing, Life Cycle Costing; Uniform Costing. **(10 Hours)**

**Suggested Readings: (All Latest Editions)**

1. Arora, M. N. Cost Accounting Principles & Practice. Vikas Publishing House.
2. Jawahar, L. Advanced Management Accounting. S. Chand & Company.
3. Periasamy, P. Financial, Cost and Management Accounting. Himalaya Publishing.
4. Khan, M.Y. & Jain, P.K. Management Accounting. McGraw Hill Education.
5. Maynard, Jennifer. Financial Accounting, Reporting & Analysis. Oxford University Press
6. Horngren, C.T., Foster, G., Datar, S.M. Cost Accounting: A Managerial Emphasis. Pearson Education

**GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, NEW DELHI**  
**MASTER OF BUSINESS ADMINISTRATION (MBA)**

**Information Technology Management**

**Course Code: MS-109**

**L - 3, Credits - 3**

**Objectives:** The primary objective of this course is to familiarize the student coming from diverse background with basic concepts of information technology, its components and their applications in business processes.

**Course Outcomes (COs)**

**CO1:** Recall the components of an Information Technology based system.

**CO2:** Identify the challenges in storage and retrieval of data.

**CO3:** Classify the software into various types on the basis of different criteria.

**CO4:** Create and analyze the database using SQL and spreadsheet tools.

**CO5:** Build an appropriate computer network as per the organizational needs

**CO6:** Develop web pages using HTML.

**CO7:** Contrast the information systems for managerial decision making

**CO8:** Understand the new and emerging technologies

**Course Contents**

**Unit I**

**Information Technology:** Components of IT systems, Characteristics and Classification of Computers. **Computer Architecture, Computer Memory:** Types of Memory, Storage devices, Mass Storage Systems. Concept of Cloud Computing, Data Centres and their challenges. **(06 Hours)**

**Unit II**

**Computer Software:** Types of Software. System Software: Introduction to Operating System, Need, Functions and Types of Operating systems. Introduction to GUI. Compiler, Interpreter and Assembler, Types of Computer Programming Languages.

Application Software and their uses. Features of Good Software and emerging trends in software development. Spreadsheet and Presentation Software. **Data Analysis using Excel.**

DBMS: Traditional File concepts and Database Environment, Database Management Systems Concepts, Types of Data Models, ER Modeling, Integrity Constraints, **SQL queries.**

**(14 Hours)**

**Unit III**

**Data Communication and Networks:** Concepts of Data Communication, Types of Data-Communication Networks, Communications Media, Concepts of Computer Networks, Primary Network Topologies, Network Architectures-The OSI Model, Inter-Networking devices. The Internet, Intranet and Extranets: Internet Services, World Wide Web, Creating Web Pages using HTML. **(12 Hours)**

**Unit IV**

**Functional and Enterprise Systems:** Data, Information and Knowledge Concepts, Decision Making Process, Concept and Classification of Information Systems. Security Issues in Information Technology, Emerging Trends in Information Technology: **Block Chain, Artificial Intelligence, Machine Learning, Internet of Things and their applications.** **(10 Hours)**



**Suggested readings: (All Latest Editions)**

1. ITL Education Solutions. Introduction to Information Technology, 2/e, Pearson Education.
2. Turban, Rainer and Potter. Introduction to Information Technology, John Wiley and Sons.
3. Behl R. Information Technology for Management, McGrawHill Education.
4. Joseph A. Brady and Ellen F Monk. Problem Solving Cases in Microsoft and Excel, homson Learning.
5. Mukta Sharma and Surabhi Shankar. Computer Applications, Galgotia Publishing Company.
6. Saini A.K. and Mukta Sharma, Web Technologies, GalgotiaPublishng Company.

**GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, NEW DELHI**  
**MASTER OF BUSINESS ADMINISTRATION (MBA)**

**Marketing Management**

**Course Code: MS 111**

**L -3 Credits-3**

**Objectives:** This course is aimed at enabling students to understand the basic marketing concepts, processes and techniques. It will help develop and prioritise appropriate marketing strategies to meet the organizations marketing objectives and address its marketing challenges

**Course Outcomes (COs)**

**CO1:** Discuss the importance of a customer-centric approach and critically evaluate marketing function, concepts and theories, processes and techniques.

**CO2:** Identify and explain the major forces in the macro and micro environment that impact marketing strategy development and implementation.

**CO3:** Apply key marketing concepts and tools to develop and prioritise appropriate marketing strategies to meet the organizations marketing objectives and address its marketing challenges

**CO4:** Explain the importance of synchronizing the elements of a customer- driven marketing strategy and apply IT based tools that provide for a seamless customer experience.

**COS:** Anticipate future challenges and devise marketing strategies to adapt to the imperatives of sustainable development.

**Course Contents**

**Unit I**

**Introduction to Marketing:** Meaning and Scope of Marketing; Marketing Philosophies; Concept of Customer Value and Customer Satisfaction, Marketing Management Process-An Overview; Concept of Marketing Mix; Understanding Marketing Environment; Consumer Buyer Behavior; Market Segmentation, Targeting and Positioning; Overview of Competitive Marketing Strategies. **(12 Hours)**

**Unit II**

**Product and Pricing Decisions:** Product Concept; Product Classifications; Product Levels; Product Differentiation; Product Mix; Product Line Decisions; Product Life Cycle-Concept & Strategies; Brand and Branding Strategies; New Product Development Process; Pricing-Pricing Objectives, Determinants of Price, Pricing Methods & Strategies. **(10 Hours)**

**Unit III**

**Promotion and Distribution Decisions:** Concept of Integrated Marketing Communication; Promotion Mix-Advertising, Personal Selling, Publicity, Direct Marketing and Sales Promotion; Channels of Distribution; Functions of Intermediaries; Channel Design Decisions, Selecting Channel Members; Channel Management; Emerging Channels of Distribution. **(10 Hours)**

**Unit IV**

**Contemporary Marketing Trends and Issues:** Consumer Adoption of Innovations; Rural Marketing, Social Marketing; Sustainable Marketing; Digital Marketing; Ethical Issues in Marketing; Introduction to Marketing Analytics. **(10 Hours)**

**Suggested Readings: (All Latest Editions)**

1. Kotler,P., Keller, K.L. , Marketing Management, Pearson Education.
2. Lamb, C.W, Hair, J.F, Sharma, D. & Mc Daniel C., Marketing- A South Asian Perspective Edition, Cengage India Pvt. Ltd, Delhi
3. Baines, P., Fill, C., Page, K., Sinha, P.K. , Marketing: Asian Edition, Oxford University Press, New Delhi.
4. Ramaswamy, V.S and Namakumari, S. , Marketing Management: A Strategic Decision Making Approach Global Perspective Indian Context Hill , Sage
5. Walker O. C., Mullins J. & Boyd Jr. H. W., Marketing Strategy: A Decision Focused Approach, Mc Graw Hill Education.
6. Etzel, M., Walker, B., Stanton, W. and Pandit, A., Marketing Management, McGraw Hill Education.

**GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, NEW DELHI**  
**MASTER OF BUSINESS ADMINISTRATION (MBA)**

**Communication in Organizations**

**Course Code: MS-113**

**L-2,T/P-1, Credits-3**

**Objectives:** The aim of the course is to train students to enhance their skills in written and oral communication. The course will help students develop competence in communication so that they can successfully handle the challenges of all types of communication in business environment.

**Course Outcomes (COs)**

**CO1:** Recognize the scope and significance of communication and its relevance for enhancing individual and organizational performance in the context of global business operations.

**CO2:** Explain the concepts, theories and principles of communication informing various communication strategies and practices aimed at effective communication with different stakeholders of the organization.

**CO3:** Identify and apply various tools and techniques for developing appropriate communications strategies aimed at positioning the organization and build brand image.

**CO4:** Exhibit the use of interpersonal communication skills and etiquettes for impactful business dealings and lasting relationship building reflected in dressing sense, listening skills, cultural sensitivity etc

**CO5:** Devise an effective communication strategy and protocols that can be successfully employed by the individuals and teams while participating in business negotiations.

**Course Contents**

**Unit I**

Introduction to Business Communication: Business communication – definition, importance. Forms and types of communication (Downward, upward, horizontal and lateral communication), Formal and informal communication network. Process of communication, Barriers and Gateways to communication. **(12 hours)**

**Unit II**

Written Communication and Application of Communication: Principles of Written Communication – 7C's Concept. Business and Commercial Letter (Request letters, Good News letters, Persuasive letters, Sales letters). Job application and Resume Writing. **(12 Hours)**

**Unit III**

Oral Communication: Principles of Oral Presentations, Factors Effecting Presentation, Video-conferencing and Skype, Non-Verbal Communication (Para language, Time, Space, Silence, Body language). Relating through Informative and Persuasive speeches, Listening. **(8 hours)**

**Unit IV**

Recent Trends in Business Communication: Online Communication and Personal Relationships, Handling Online Meetings, Business Communication via Social Network, Writing Social Blogs. Inter-cultural communication. Ethical and Legal Issues. **(10 hours)**

### **Suggested Readings (All Latest Editions)**

1. Courtland L. Bovée et. al., Business Communication Today, Pearson
2. Steve Duck and David T. McMahan, The Basics of Communication, Sage, South Asia
3. Lesikar R et.al., Business Communication: Connecting in a Digital World, McGraw Hill.
4. Murphy H et.al., Effective Business Communication, McGraw Hill.
5. Reddy C.R. Business Communication, Wiley Publications.
6. Chaturvedi M. Art and Science of Business Communication, Pearson.

**GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, NEW DELHI  
MASTER OF BUSINESS ADMINISTRATION (MBA)**

**LEGAL ASPECTS OF BUSINESS**

**Course Code: MS-115**

**L-3, Credits-3**

**Objectives:** Managing business activities requires some level of acquaintance with the laws and legal systems. Laws are enacted to regulate and govern the relationships between business and various stakeholders i.e government, customers, suppliers, employees and community. This course is intended to enable the students acquire a general understanding of the legal system in India and the laws relevant to business world so that they appreciate the legal implications of the business decisions.

**Course Outcomes (COs)**

**CO1:** Identify, define and explain the legal provisions governing general and special contracts, companies, competitive markets, consumers' protection and investors' protection.

**CO2:** Distinguish, examine and summarize legal communications and take actions consistent with the requirements of law

**CO3:** Analyze the decision-making context with due regard to the legal requirements and regulatory compliances

**CO4:** Evaluate and appraise the legal consequences of alternative choices proposed for decision making.

**CO5:** Assess various legal strategies or options available in the specific context of various legal disputes or issues that generally arise in the course of business.

**CO6:** Explain the mechanisms set-up under the relevant laws for handling legal disputes or addressing legal issues and prepare strategies for their expeditious and effective resolution.

**Course Contents**

**Unit-I**

**Introduction to Law and Legal Systems:** Basic concepts of Law, Classification of Laws and Legal Systems, Indian Legal System and Administration of Justice, Constitutional Courts and their jurisdiction, Subordinate Judiciary and their jurisdiction, Tribunals and their jurisdiction, An overview of Alternate Dispute Resolution Mechanisms, Constitutional provisions related to the freedom to do business in India and the reasonable restrictions permissible, Nature of government regulation of business and markets in market economy. **(8 Hours)**

**Unit-II**

**Laws Governing Contracts:** The Indian Contract Act, 1872- Definition and essential elements of a contract, Performance of a contract, Discharge of a contract, Breach of a contract, Remedies for breach under the Indian Contract Act, 1872; The Sale of Goods Act, 1930-Definitions of Sale, Agreement to Sell, Goods, Conditions and Warranties, Transfer of property, Rights if a seller and buyer, Rights of an Unpaid Seller.

**(12 Hours)**

### Unit-III

**Laws Governing Business Forms:** The Indian Partnership Act,1932: Formation of Partnership, Relationship between partners, Rights and liabilities of partners, Dissolution of partnership and partnership business

The Companies Act, 2013: Company and its features, Types of Companies, Incorporation of a Company, Memorandum of Association and Articles of Association, Board of Directors and their appointment, powers, duties and liabilities, winding up of a company, Overview of Insolvency and Bankruptcy Code, 2016.

The Limited Liability Partnership Act, 2008: Features of LLP, Incorporation of LLP, Effects of Registration of LLP, Designated partners and their liabilities, Conversion of other forms of business organizations into LLP. **(12 Hours)**

### Unit-IV

**Laws Governing Relations with various Stakeholders:**The Securities and Exchange Board of India Act, 1992: Objectives, Regulatory powers of SEBI, Regulations related to Public Offer of Shares and Debentures, Regulations related to protection of investors.

Consumer Protection Act, 2019: Objectives and salient features, Definition of consumer, complainant, defect, deficiency, restrictive trade practice, unfair trade practice, rights of the consumers, 3-Tier structure of dispute resolution commissions-Powers and functions  
Competition Act, 2002: Objectives and salient features, Definition of anti-competitive agreement, abuse of dominant position, combinations, role of Competition Commission of India in promoting competitive markets. **(10 Hours)**

### Suggested Readings: (All Latest Editions)

1. Albuquerque, Daniel. Legal Aspects of Business, Second Edition, OUP India
2. Pathak, Akhileshwar. Legal Aspects of Business, Mc Graw Hill Education
3. Kumar, Ravinder. Legal Aspects of Business, Cengage Learning India
4. [www.indiacode.nic.in](http://www.indiacode.nic.in)
5. [www.sebi.gov.in](http://www.sebi.gov.in)
6. [www.cci.gov.in](http://www.cci.gov.in)

**GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, NEW DELHI  
MASTER OF BUSINESS ADMINISTRATION (MBA)**

**Information Technology Management Lab**

**Course Code: MS-117**

**T/P-2 Credits-1**

Lab will be based on Paper MS-109 and will basically cover the following: Operating System Utilities, SQL Queries, Basic HTML Tags to create web pages. In addition the students are required to work on Spreadsheet exercises for basic operations and using data analysis tools such as What-If, Goal Seek, Problem Solver, Pivot Tables, etc.

Students are required to maintain a record of all the exercises done by them in a Lab file duly signed by the faculty.

**Course Outcomes (COs)**

**CO1:** Apply Operating system tools for IT resources.

**CO2:** Create and analyze the database using SQL.

**CO3:** Make use of Spreadsheet software such as MS-Excel as a data analysis tool.

**CO4:** Create and develop web pages using HTML.



# **SEMESTER- II**

**GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, NEW DELHI**  
**MASTER OF BUSINESS ADMINISTRATION (MBA)**

**Technology and Innovation Management**

**Course Code: MS-102**

**L3 Credits-3**

**Objectives:** This course is designed to help students to understand the importance of managing technology, innovation and change at the micro and macro level.

**Course Outcomes (COs)**

**CO1:** Understand the concept of technology and its usefulness for an organization

**CO2:** Develop technology development processes and strategies for a firm

**CO3:** Identify the emerging trends in technology development at national and global level

**CO4:** Classify the innovation on different criteria for adoption in organizations.

**CO5:** Examine the Innovation Strategies of various firms in a systemic manner.

**CO6:** Evaluate the role of innovation in organizational performance and transformation.

**CO7:** Understand and examine the factors affecting the technological change and its management

**CO8:** Build innovative organizations through climate and culture for innovation

**CO9:** Apply creative thinking for problem solving.

**Course Contents**

**Unit I**

**Technology Management:** Understanding Technology and its Relationship with Wealth of Nations. Technology Life Cycles, S- curve of Technology Evolution, Technological Planning and Forecasting, Technology Policy, Technology Strategy, Technology Generation and Development, Technology Acquisition and Absorption; Technology Transfer, Technology Exports and Joint Ventures. Global Trends in Technology Development and Management.

**(14 Hours)**

**Unit II**

**Innovations Management:** Concepts of Invention and Innovation; Classification and Types of Innovation, Frugal Aspects of Innovation, Social Innovation, Innovation Strategies and Models; Concurrent Engineering; Process Innovation, Product Innovation, Case Studies on Innovation.

**(12 Hours)**

**Unit II**

**Change Management:** Understanding the Nature, Importance, Forces, Types of Technological Change; Diagnosing Organizational Capability to Change Process, Change Strategy, Building Culture and Climate for Change and Innovation, Building, Managing and Sustaining Innovative Organizations: Nurturing Innovation, Role of Leadership. Case studies on Business Transformation.

**(10 Hours)**

#### **Unit IV**

**Creative and Lateral Thinking Management: Understanding Creative Thinking, Myths about Creativity; Factors affecting Creative Thinking, Creative Problem Solving: Approach and Process; Managing Lateral Thinking with Exercises. (6 Hours)**

#### **Suggested Readings: (All latest editions)**

1. Khalil, T. M. and Shankar, R. Management of Technology: The Key to Competitiveness and Wealth Creation, McGraw Hill Education
2. Narayanan, V. K. Managing Technology and Innovation for Competitive Advantage, Pearson Education.
3. Frederick Betz. Managing Technological Innovation: Competitive Advantage from Change, John Wiley & Sons, Inc., USA.
4. Tushman, Michael L and Anderson P. Managing Strategic Innovation and Change, Oxford University Press.
5. Khurana V. K. and Saini A.K. Management of Technology and Innovation for Competitive Advantage, Ane Books, New Delhi.
6. . Sanjiva Shankar Dubey. Technology and Innovation Management, Prentice Hall India.

**GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, NEW DELHI**  
**MASTER OF BUSINESS ADMINISTRATION (MBA)**

**Financial Management**

**Course Code: MS-104**

**L - 3, Credits - 3**

**Objectives:** The course is aimed to provide an understanding of the essential elements of financial management and the financial environment in which the business firm operates. The paper will examine the objective of shareholder wealth maximization which encompasses much of modern corporate finance and its implication for decision making in the present context.

**Course Outcomes (COs)**

**CO1:** Demonstrate the sound understanding of the concept, functions and importance of financial management for a business firm.

**CO2:** Analyze the convolutions associated with management of short-term and long-term funds in the corporate capital structure.

**CO3:** Demonstrate the ability to assess and manage financial risks and recommend an optimum capital portfolio for a firm.

**CO4:** Combine the knowledge of financial management and investment, financing, dividend policy and working capital decisions for ensuring optimum valuation of a firm.

**Course Contents**

**Unit I**

Financial Objectives; Impact of Financial and Economic Environment on Financial Management; Time Value of Money, Computation of EMI, Annuity, Annuity Due, Funds Flow Analysis, Cash Flow Statement and its Interpretation (AS-3). (10 Hours)

**Unit II**

Capital Structure: Net Income Approach, Net Operating Income Approach, Traditional Approach and MM Approach, Cost of Capital: Leverage Analysis, Operating Leverage, Financial Leverage, Combined Leveraged. EBIT- EPS Analysis, Capital Gearing. (10 Hours)

**Unit III**

Capital Budgeting, Conventional and DCF Methods, Risk Analysis-Certainty Equivalent Factor, Risk Adjusted Discounting Rate, Decision Tree, Independent and Dependent Risk Analysis, Replacement Decisions, Sensitivity Analysis. (10 Hours)

**Unit IV**

Dividend Policy: Walter Model, Gordon Model, MM Approach, Lintner Model; Working Capital Management: approaches, estimation; Management of Inventories; Management of Cash (Various Theoretical Models); Management of Receivables and Marketing Securities.

(12 Hours)

**Note: MS-Excel Functions and Formulas to be used.**

**Suggested Readings: (All Latest Editions)**

1. Brigham, E. F., & Houston, J. F. Fundamentals of Financial Management. Cengage Learning India Pvt Ltd.
2. Khan, M.Y., & Jain, P.K. Financial Management: Text & Problems. Tata McGraw Hill.
3. Prasanna, C. Financial Management: Theory and Practice. Tata McGraw Hill.
4. Van Horne, James, C. Principles of Financial Management, Pearson.
5. Pandey, I.M. Financial Management, Pearson Education.
6. Ravi Kishore. Financial Management, Taxmann's Publications.

**GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, NEW DELHI**  
**MASTER OF BUSINESS ADMINISTRATION (MBA)**  
**BUSINESS RESEARCH**

**Course Code: MS-106**

**L-3, Credits:3**

**Objectives:** To acquaint the student with the concepts of research, research design, research process concepts, tools and techniques of data analysis and the process of effective report writing to conduct research and analysis for effective decision making

**Course Outcomes (COs)**

**CO1:** Identify and differentiate between different types of research and research designs.

**CO2:** Formulate and articulate research questions and specify research objectives and hypothesis.

**CO3:** Critically analyze and evaluate the existing literature to identify the research gaps and prepare a research proposal for scientific study.

**CO4:** Design a sample study employing statistical tools and techniques, develop data collection instruments comprising scale items and test their validity and reliability.

**CO5:** Analyze quantitative data by identifying and applying various statistical tests and interpret the results for drawing generalizations.

**CO6:** Write a report and present the findings in a structured manner with coherent arguments in logically persuasive style and analyze the implications for both practice and future research.

**Course Contents**

**Unit I**

Meaning, Purpose and Nature of research; Research; Problem: Formulation; Research Objectives and Research Questions; Research Process; Hypothesis: Formulation. Constructs; Variables; Review of Literature: Purpose, Types and Techniques. **(12 Hours)**

**Unit II**

Research Design; Meaning, importance and types of research designs; Sampling: Defining target population, sampling frame, sampling units; Sampling Methods; Determining sample size; Considerations in sample design. Sampling & Non Sampling Errors. **(8 Hours)**

**Unit III**

Questionnaire: Meaning, purpose, structured vs. unstructured questionnaires, designing questionnaire. Measurement scale: meaning, types, steps in scale formulation, reliability and validity of a measurement scale. **(10 Hours)**

**Unit IV**

Data Analysis: Descriptive Statistics, Hypothesis Testing, Parametric and Non Parametric Tests: Analysis of Variance, Multiple and Logistic regression, Exploratory and Confirmatory Factor Analysis; Discriminant Analysis; Report Writing: Research Report Components, Process of Report Writing. **(12 Hours)**

**Note: Software Tools to be used for enhanced learning.**

**Suggested Readings: (All Latest Editions)**

1. Cooper, D. R. and Schindler P. S. Business Research Methods. Tata McGraw Hill Education Pvt. Ltd.
2. Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E. Multivariate Data Analysis. Pearson Education.
3. Montgomery, D.C. Design and Analysis of Experiments (International Student Edition). John Wiley & Sons.
4. Cochran, W.G. Sampling Techniques. John Wiley & Sons.
5. Johnson, R.A., & Wichern, D.W. Applied Multivariate Statistical Analysis New Delhi, Prentice Hall of India.
6. Zikmund, W.G. et al. Business Research Methods. New Delhi: Cengage Learning

**GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, NEW DELHI**  
**MASTER OF BUSINESS ADMINISTRATION (MBA)**

**Sustainable Operations Management**

**Course Code: MS-108**

**L - 3, Credit - 3**

**Objectives:** The course will enable students appreciate the strategic significance of operations management in a highly competitive global economy and to introduce various principles, concepts, tools and techniques in the area of operations management. Students are expected to gain a conceptual understanding of the subject and relate them to practical application in real life situation.

**Course Outcomes (COs)**

**CO1:** Define operations management and discuss its scope and its strategic significance for the organizations to achieve competitive advantage as well as the nation to enhance its productive efficiency.

**CO2:** Explain the major milestones and trajectory of evolution of operations management as a field of study, discuss the contribution of various individuals and organizations to the field of operations management.

**CO3:** Identify the major decision areas included in operations management and explain the principles, concepts, tools and techniques employed for decision making in each of the decision areas.

**CO4:** Identify the processes of product design and development, analyse various approaches • to product development, compare and classify manufacturing and service delivery processes and analyse the factors determining process selection.

**CO5:** Apply various tools and techniques and use operations analytics for operations planning and control and managing supply chains.

**CO6:** Design and implement quality management systems applying both traditional and Japanese management philosophies for sustainable operations management.

**Course Contents**

**Unit I**

**Introduction to Operations Management:** Nature and Scope of Operations Management, Historical Evolution of Operations Management, System Perspectives of Operations Management, and Relation of Operations Management with other functional areas, Operations Strategy, Recent Trends in the field of Operations Management, Sustainability in operations, Ecological Considerations by manufacturing and services firms. **(11 hours)**

**Unit II**

**Product Development & Process Selection:** Product Development Process, Concurrent Engineering, Tools and Approaches in Product Development, Quality Function Deployment, Design for Manufacturability, Quality Function Deployment, Design for Manufacturability, Design for Assembly, Design for Quality, Mass Customization, Process Selection, Facilities Layout, Determinant of Process Selection, Process Product Matrix, Types of Layout, Line Balancing, Facilities Location, Work Measurement and Job Design, Impact of IT on Productivity. **(11 hours)**

**Unit III**

**Operation Planning & Control:** Capacity & Resource Planning, Aggregate Production Planning, Material Requirement Planning, Scheduling, Theory of Constraints and Synchronous Manufacturing, Lean Management, Just in time production, Sustainable Supply Chain Management, Inventory Planning and Control. **(10 hours)**

#### **Unit IV**

**Quality Management:** Quality- Definition, Dimension and Costs of quality, Continuous Improvement (Kaizen), ISO (9000 & 14000 Series) , Quality Awards, Statistical Quality Control, Process Control , Control Chart (X, R , p, np and C Chart) , Acceptance Sampling, Operating Characteristics Curve (AQL,LTPD,  $\alpha$  &  $\beta$  risk), Total Quality Management, Japanese 5 S Concept, Business Process Reengineering, Introduction to Operation Analytics.(10 hours)

#### **Suggested Readings: (All Latest Editions)**

1. Jay Heizer& Barry Rende. Operations Management, Pearson Education.
2. Mahadevan B. Operations Management: Theory and Practice, Pearson Education.
3. Bedi, K.Production and Operations Management. Oxford University Press, New Delhi.
4. Russell, R. S. and Taylor, B.W. Operations and Supply Chain Management, Wiley, New Delhi.
5. Stevenson W. J. Operations Management, McGraw Hill Education
6. Gaither Norman and Frazier G, Operations Management, Cengage Learning India Pvt Ltd.

Note: Visits to a manufacturing plant and a service facility may be arranged for the students for giving them an opportunity to get a first hand experience of operations functions.



**GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, DELHI**  
**MASTER OF BUSINESS ADMINISTRATION (MBA)**

**Management of Information Systems**

**Course Code: MS 110**

**L-3, Credits-3**

**Objectives:** The objective of this course is to expose students to managerial issues relating to information systems planning, design, development, its linkage with business strategy, and to help them identify and evaluate various options in this regard.

**Course Outcomes (COs)**

**CO1:** Define, classify and explain information systems, analyze their functions and explain the strategic role of information systems in enhancing organizational performance.

**CO2:** Discuss the components of information systems, analyze their inter relationships and apply the knowledge to configure information systems that can be effectively integrated into the business strategy and business processes of the organization.

**CO3:** Explain the tools and techniques for information systems design and implementation and apply them appropriately to take leverage of enterprise systems for enhancing the effectiveness of decision making.

**CO4:** Evaluate the information systems in terms of their contribution towards improved decision making and optimum use of organizational resources.

**CO5:** Anticipate the risks associated with enterprise systems from economic, social, privacy and security perspectives and propose legal and ethical solutions consistent with sustainable development goals.

**Course Contents**

**Unit I**

**Meaning and Role of Information Systems:** Information Systems: Digital Enterprises, Role of Information Systems, Types of Information Systems: Operations Support Systems, Management Support Systems, Expert Systems and Knowledge Management Systems. Information Systems for Strategic Advantage: Competitive Strategy Concepts, Strategic Role of Information Systems. Integrating Information Systems with Business Strategy, Value Chain Analysis. **(10 hours)**

**Unit II**

**Planning for Information Systems:** Identification of Applications, Business Planning Systems and Critical Success Factors, Method of Identifying Applications, Risks in Information Systems. Resource Requirements for Information Systems: Hardware and Capacity Planning, Software Needs, Procurement Options – Make or Buy decisions, Outsourcing as an Option. Global Information Systems. **(10 hours)**

**Unit III**

**Building Information Systems:** Concepts of Systems Analysis and Design, SDLC Approach, Prototyping, Spiral method. Role of End User, Logical and Physical Design. Implementation Strategies of Information Systems. Evaluation of Information Systems. **(10 hours)**

#### **Unit IV**

**Emerging Concepts and Issues in Information Systems:** Enterprise Systems: Supply Chain Management, Customer Relationship Management, ERP, Knowledge Management, Benefits and Challenges of Enterprise Systems. Security, Social and Ethical Issues in Information Systems. Enhancing Decision Making: Introduction to Data Warehousing and Data Mining, Cloud Computing. **(12 hours)**

#### **Suggested Readings: (All Latest Editions)**

1. James A O'Brien, George M Marakas and Ramesh Behl. Management Information Systems, Latest Edition, Tata McGraw Hill Education, New Delhi.
2. Kenneth C. Laudon and Jane P. Laudon. Management Information Systems, Pearson, New Delhi.
3. Turban, E. and Linda Volonino. Information Technology for Management: Transforming Organizations in the Digital Economy, Wiley.
4. D.P.Goyal. Management Information Systems-Managerial Perspectives, Macmillan, New Delhi.
5. S.A.Kelkar. Management Information Systems-A concise Study, PHI Learning, New Delhi.
6. Sahil Raj. Management Information Systems, Latest Edition, Pearson Education, New Delhi.

**GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, NEW DELHI**  
**MASTER OF BUSINESS ADMINISTRATION (MBA)**

**Human Resource Management**

**Course Code: MS-112      L-3 Credits-3**

**Objectives:** The course shall enhance the understanding of varied practices and processes of managing human resource and their relevance and contribution in terms of not only organization but the other employees working therein, and also the society at large.

**Course Outcomes (COs)**

**CO1:** Explain the scope and strategic significance of the Human Resources Management function, discuss and differentiate between various models of HRM.

**CO2:** Apply the methods and techniques of human resources planning, job design, recruitment, selection and onboarding.

**CO3:** Develop performance management systems integrating performance appraisal, training and development, reward and recognition and other initiatives to create a high performance culture in organizations.

**CO4:** Evaluate Human Resources Management Systems and employ Human Resource Information Systems and data driven approach to improve the HR processes.

**CO5:** Identify contemporary issues and challenges in managing increasing diversity of workforce and apply the concepts of inclusion, employee engagement, positive psychology etc for promoting inclusive work spaces and enhancing employee engagement through positive employee experiences.

**Course Contents**

**Unit I**

**Introduction to Human Resource Management:** Concept of Human Resource Management, Nature, Scope, Functions of Human Resource Management (HRM), various Models of HRM, merits and demerits of different HRM models; Roles of Human Resource managers; Responsibilities of Human Resource managers. **(6 hours)**

**Unit II**

**Human Resource Planning:** Forecasting demand and supply of manpower, techniques of forecasting, Analysis of work, Designing Jobs – Job Analysis – job description and job specification, Job Evaluation – definition, objectives and methods.

HR Processes: Recruitment, Selection, Induction, Socialization. Recent Developments/

Emerging Trends in HR, Use of Digital Tools by HR managers, Competency based selection.

**(16 hours)**

**Unit III**

**Development and Career Management:** Training and Development-scope Importance, Types of training, Difference between raining and development, E-Learning, Development of Employees in Organization, Performance Appraisal & Performance Management – Definition Objective, Importance, Appraisal Process and Appraisal Methods, Employee Empowerment and Engagement.

**(10 hours)**

#### **Unit IV**

**Contemporary Issues in HR:** Work Life Balance – definition, importance and challenges, Human Resource Information Systems – definition, importance and scope, Happiness at work, Managing Protean career, moonlighting phenomenon, Managing Workforce Diversity – concept, benefits and challenges. **(10 hours)**

#### **Suggested Reading: (All Latest Editions)**

1. Dessler G. and Varkkey, B., Human Resource Management, Pearson Education
2. Denisi A. et al., HR: A South Asian Perspective, Cengage Learning
3. Ivancevich J.M., Human Resource Management, McGraw Hill Education
4. Aswathappa, Human Resource Management, McGraw Hill Education
5. Mathis et al., Human Resource Management: South Asian Perspective, Cengage Learning
6. Mondy W., Human Resource Management, Pearson Education

**GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, NEW DELHI  
MASTER OF BUSINESS ADMINISTRATION (MBA)**

**Minor Project**

**Course Code: MS- 114**

**Credits-4**

The Project must focus on the application of management concepts, management theory or techniques studied in the first and second semester to understand and address an organizational or social issue or challenge. The project may be based on secondary or primary sources of data. On completion of the project students are required to submit a project report.

**GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, NEW DELHI**  
**MASTER OF BUSINESS ADMINISTRATION (MBA)**

**Professional Skill Development (NUES)**

**Course Code: MS- 116**

**L-2 T-1, Credits-3**

**Objectives:** The course is designed to equip students with life skills such that they not only develop a holistic personality but, are also equipped to lead in the face of contemporary challenges. The students will be exposed to various techniques that help in self-management and effectively relating to others. The objective is to equip them with the requisite soft skills for smooth campus to corporate transition and enhance their digital readiness.

**Course Outcomes (COs)**

**CO1:** To recognize, identify and foster self-capabilities for corporate readiness

**CO2:** Develop life skills such as communication, cooperation, teamwork, and resilience

**CO3:** Develop understanding of appropriate conduct in professional environment

**CO4:** Develop corporate character and holistic personality

**Course Contents**

**Unit I**

**Life Skills:** understanding oneself (core self-evaluation, values, ethics, personality assessment), stress management, building positive mindset, time management, work life balance, Exercises on personality development and mindfulness. **(10 hours)**

**Unit II**

**Relating to others:** Interpersonal relationship assessment, management and transactional analysis, social intelligence, Johari window, Conflict management, Exercise on relationship management and active listening. **(11 hours)**

**Unit III**

**Campus to Corporate:** Success at group discussion, Resume writing and feedback on resumes, Success in personal interviews, Public speaking and extempore. **(11 hours)**

**Unit IV**

**Job Readiness:** Introduction to analytics using spreadsheets, Introduction to Data Visualization, Simulation exercises through online platforms, Dream job analysis. **(10 hours)**

**Suggested Readings: (All Latest Editions)**

1. Wadkar, Alka. Life Skills for Success. Sage Publications
2. Joshi, Gangadhar. Campus to Corporate: Tour Roadmap to Employability. Sage Publications
3. Daniel, K. Thinking, Fast and Slow, Pengu Psychology.
4. Covey, S. R. The 7 habits of highly effective people: Powerful lessons in personal change. Simon and Schuster.
5. Berne, E. Games people play: The basic handbook of transactional analysis. Tantor eBooks.
6. Narayana, D., Ranjan, S., & Tyagi, N. Basic Computational Techniques for Data Analysis: An Exploration in MS Excel. Sage Publications

**GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, NEW DELHI  
MASTER OF BUSINESS ADMINISTRATION (MBA)**

**Course Code: MS 118**

**Credits-3**

**MOOC/Open Elective**

To remove rigid boundaries and facilitate new possibilities for learners in education system, study webs of active learning for young aspiring minds is India's Nation Massive Open Online Course (MOOC) platform. Massive Open Online Courses (MOOCs) are online courses which are designed to achieve the three cardinal principles of India's education policy: Access, Equity and Quality. MOOCs provide an affordable and flexible way to learn new skills, career development, changing careers, supplemental learning, lifelong learning, corporate eLearning & and deliver quality educational experiences at scale and more.

A student is required to earn 3 credits by completing quality –assured MOOC programme offered on the SWAYAM portal or any other online educational platform approved by the UGC / regulatory body from time to time at PG level. Successful Completion Certificate should be submitted to respective institute for earning the course credit.

Alternatively, student can pursue any course offered in the campus by any USS/College at PG level with due intimation to the Program Coordinator/Dean /Director of the School/College.

## COs and POs Mapping - MBA Programme

Semester and Course Title	Subject Code	Course Outcomes (CO)	Program Outcomes (PO)								
			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
<b>Semester 1</b>											
Management Process and Organizational Behaviour	MS 101	CO1	3	2	2	2	1	2	3	3	2
		CO2	2	2	2	2	2	1	1	3	2
		CO3	3	3	3	3	2	2	1	2	2
		CO4	2	2	2	3	3	2	1	3	2
			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
Quantitative Techniques	MS 103	CO1	3	1	2	3	3	2	1	1	3
		CO2	3	1	2	2	3	2	1	1	3
		CO3	3	2	2	3	3	2	1	1	3
		CO4	3	2	2	3	3	2	1	1	3
		CO5	3	2	2	3	3	2	1	1	3
			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
Managerial Economics	MS 105	CO1	3	1	1	2	1	1	1	1	2
		CO2	3	3	3	3	3	1	2	1	3
		CO3	3	3	3	3	3	3	2	1	1
		CO4	3	3	2	3	2	1	2	1	2
		CO5	3	3	3	3	3	3	2	1	1
		CO6	3	2	2	2	2	1	2	2	2
			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
Accounting for Management	MS 107	CO1	3	1	2	2	1	1	1	1	2
		CO2	3	2	3	2	2	2			
		CO3	3	3	2	2	2	2	1	2	1
		CO4	3	2	3	3	3	1			
			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
Information Technology Management	MS 109	CO1	1	1	1	1	1	1	1		1
		CO2	1	1		2	2	3	1	2	2
		CO3	1	1	1	2	2	1	1	1	1
		CO4	2	1	1	2	1	1	2	1	1
		CO5	2	2	3	2	1	1	1	1	1
		CO6	1	2	2	1	1	1	1	1	1
		CO7	3	2	2	1	1	1	2	1	1
		CO8	1	1	1	2	1	1	1	1	1
			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
Marketing Management	MS 111	CO1	3	3	3	3	3	2	2	3	2
		CO2	3	3	3	3	3	2	2	3	2
		CO3	3	3	3	3	3	3	2	3	2
		CO4	3	3	3	3	3	3	2	3	2
		CO5	2	2	2	2	2	2	3	3	2
			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
Communication in Organizations	MS 113	CO1	2	3	3	2	2	1	1	3	2
		CO2	2	2	3	3	3	2	1	3	2
		CO3	2	3	2	2	3	3	2	2	1
		CO4	2	3	3	2	2	2	1	3	2
		CO5	2	3	3	3	3	2	1	3	2
			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
Legal Aspects of Business	MS 115	CO1	1	2	2	1	2	1	3	2	2
		CO2	1	2	2	2	2	1	3	3	2
		CO3	1	2	1	1	2	1	3	1	2
		CO4	1	2	1	1	2	1	3	1	2
		CO5	1	2	2	1	2	1	3	2	2
		CO6	1	2	2	1	2	1	3	1	2
			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
Information Technology Management - Lab	MS 117	CO1	1	1	1	2	2	1	1	1	1
		CO2	1	1	1	1	1	1	1	1	1
		CO3	2	2	2	2	2	2	2	1	1
		CO4	1	1	1	1	1		1		1
<b>Semester 2</b>			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
Technology and Innovation Management	MS 102	CO1	3	3	2	2	2	3	1	1	2
		CO2	2	3	3	3	3	3	2	2	2



		CO3	3	1	1	1	2	2	2	1	1
		CO4	2	3	3	3	2	2	2	1	1
		CO5	2	3	3	3	3	3	2	2	2
		CO6	2	3	3	2	3	3	2	3	3
		CO7	3	3	3	3	2	3	3	2	2
		CO8	2	3	3	3	3	3	2	1	2
		CO9	1	3	2	2	3	2	2	2	2
			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
<b>Financial Management</b>	<b>MS 104</b>	CO1	3	3	2	2	2		2		2
		CO2	3	3	3	3					1
		CO3	3	3	3	3	2				
		CO4	3	3	3	3	3				1
			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
<b>Business Research</b>	<b>MS 106</b>	CO1	3	3	3	3	2	1	2	1	2
		CO2	3	3	3	2	2	1	2	1	2
		CO3	3	3	3	3	2	1	2	3	3
		CO4	3	3	3	3	3	2	2	2	2
		CO5	2	3	2	3	3	3	3	3	2
		CO6	2	3	2	3	3	2	2	3	3
			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
<b>Sustainable Operations Management</b>	<b>MS 108</b>	CO1	3	3	3	2	2	2	3	1	2
		CO2	3	2	2	1	2	1	1	3	3
		CO3	3	3	2	3	2	3	2	2	2
		CO4	2	3	2	3	3	2	3	2	2
		CO5	1	3	2	2	2	3	2	2	2
		CO6	2	2	2	2	2	2	3	2	2
			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
<b>Management Information System</b>	<b>MS 110</b>	CO1	3	2	3	2	2	2	1	1	2
		CO2	2	3	3	2	2	2	1	1	1
		CO3	2	3	2	3	3	3	2	1	2
		CO4	1	3	3	3	2	3	3	1	2
		CO5	1	2	1	1	1	2	3	3	2
			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
<b>Human Resource Management</b>	<b>MS 112</b>	CO1	3	1	2	3	3	1	2	2	1
		CO2	2	2	3	3	3	3	1	2	1
		CO3	2	2	2	3	3	3	1	2	1
		CO4	2	2	3	3	3	2	1	2	1
		CO5	2	2	2	3	2	1	1	3	2
			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
<b>Minor Project</b>	<b>MS 114</b>	CO1	3	1	1	2	1	1	1	2	1
		CO2	2	3	3	3	3	1	1	1	1
		CO3	1	1	1	3	3	3	1	1	1
		CO4	1	1	3	2	3	1	1	1	3
			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
<b>Professional Skill Development (NUES)</b>	<b>MS 116</b>	CO1	2	3	1	2	2	1	1	2	2
		CO2	2	3	1	3	3	1	2	3	3
		CO3	3	3	2	2	3	2	3	3	3
		CO4	2	2	3	3	3	2	2	3	3