Syllabus of B. Sc. in Culinary Science
(Effective for 2020-2021 Admission Session)
Choice Based Credit System
140 Credit (3-Year UG) MAKAUT Framework
w.e.f 2020-21

5th Semester

			Credit	Cı	redit Distrib	ution	Mod	le of Deliv	ery	
Subject Type	Course Name	Course Code	Points	Theory	Practical	Tutorial	Offline #		Proposed MOOCs	
CC 11	Kitchen Facility Planning	BSCA 501	6	5	0	1	√			
	Advanced Bakery and	BSCA(T) 502		4	0	0	\checkmark			
CC 12	Confectionery	BSCA 592	6	0	2	0	√			
DSE 1	Basics of Cloud Kitchen and Operations	BSCA 503(A)	6	5	0	1	√			As per
(Any One)	Institutional and Industrial Catering	BSCA 503(B)	6	5	0	1	√			MAKAUT notification
DSE 2	Global Events and Festivals	BSCA 504(A)	6	5	0	1	√			
(Any One)	Menu Functions and Material Management	BSCA 504(B)	6	5	0	1	√			
S	emester Credit		24							

Syllabus of B. Sc. in Culinary Science (Effective for 2020-2021 Admission Session) Choice Based Credit System 140 Credit (3-Year UG) MAKAUT Framework w.e.f 2020-21

CC 11: Kitchen Facility Planning

Course Code: BSCA 501

Credits: 6

Contact Hours: 5(L) + 1(T)

Course Objective: The course has been designed to provide a advanced knowledge and evaluate the complexity of food facility in an organization performing specialized function in the manufacture, Sales, and services of food.

COURSE OUTCOMES (CO):

Sl	Course Outcome	Mapped modules
1	Analyse about the concept and complexity of	M1, M2
	facility planning and service, and the flow of work	
	to conclude the project.	
2	Analyse and evaluate the salient points of kitchen	M1 ,M2
	designing and their logical implementations'.	
3	Outline and illustrate the food service planning &	M2, M3
	design and space calculations.	
4	Identify & Create the space for kitchen and store,	M4, M5, M6
	Planning and Design.	
5	Evaluate & demonstrate energy management	M1 ,M4, M5, M6
	system and its objectives.	
6	Application of Perishables and Non-Perishables;	M2, M4, M5 ,M6
	Hot and Cold Servings	

Module	Content	Total Hours	%age of questions	Blooms Level
M 1	Introduction to the Kitchen facility planning	4	10	3,4
M 2	Apply and assess the salient points and their logical implementations	12	25	4,5
M 3	Outline and illustrate the food service planning & design and space calculations	12	20	3,4,5
M 4	Identify & Create the space for kitchen and store, Planning and Design	12	15	4,5
M 5	Analyse & demonstrate energy management system and its objectives	10	20	4,5
M 6	Application of Perishables and Non- Perishables; Hot and Cold Servings	10	10	3,4
		60	100	

Syllabus of B. Sc. in Culinary Science (Effective for 2020-2021 Admission Session) Choice Based Credit System 140 Credit (3-Year UG) MAKAUT Framework w.e.f 2020-21

Tutorial	16	

Module 1 – Introduction to the facility planning: Concept of facility planning, Distinguishing the facility & Service, facilities & services require for various type of commercial kitchen, Work Flow (4 Hours)

Module 2 – BUILDING AND EXTERIOR FACILITIES: Salient point of commercial kitchen design, Roof, exterior walls, windows and doors, structural frame, foundation elevators, water drainage systems, utilities, landscaping and grounds (12 Hours)

Module 3 – FOOD SERVICE PLANNING AND DESIGN: concept development, feasibility, regulations, planning layout, receiving areas, storage areas, kitchen, office space, sample blue print (12 Hours)

Module 4 – KITCHEN AND STORES PLANNING AND DESIGN: development process, feasibility studies, space allocation programme, operational criteria, budget, preliminary schedule, site design, , food and beverage outlets, function areas, recreational facilities, back of the house areas (12 Hours)

Module 5 – ENERGY MANAGEMENT: background, energy pricing, energy cost control and building systems, reducing food and beverage production and service energy costs, reducing boiler and chilling energy costs, energy management and conservation systems (10 Hours)

Module 6 - Perishables and Non-Perishables; Hot and Cold Servings, Field Survey, Procurement, Presentation, Preparation, Process Improvement, Production (10 Hours)

- 1. Hospitality Facilities management and Design By: David M. Stipanuk, Harold Roffmann Published: Educational Institute, AHMA
- 2. How things work-The Universal Encyclopedia of Machines, Volume 1&2
- 3. The Management of Maintenance and Engineering Systems in the Hospitality Industry By: Frank D. Borsenik & Alan T, Stutts Published: John Willey & Sons Inc. NY
- 4. Air Conditioning Engineering By: W.P.JonesPublished: English Language Book Society/Edword Arnold

Syllabus of B. Sc. in Culinary Science (Effective for 2020-2021 Admission Session) Choice Based Credit System 140 Credit (3-Year UG) MAKAUT Framework w.e.f 2020-21

CC 12: Advanced Bakery and Confectionary

Code- BSCA 502/592

Credits: 6

Contact Hours: 4(L) +2(P)

Course Objective: The course has been designed to provide a detailed knowledge and to assess the complexity of advanced bakery & confectionery, chocolaterie and sugar craft manufacturing. The aim is to enable students to further develop their knowledge, skills and abilities in bakery and to make use of the necessary techniques.

Sl	Course Outcome	Mapped modules
1	Analyse about the concept of Confectionary, their Technology & Principals applied.	M1
2	Demonstration of custard, ice cream, pudding, mousse, soufflés, frozen dessert, fruit dessert and dessert presentation.	M1 ,M2
3	Demonstrate & apply different types of chocolates, effect of chocolate on health, techniques of working with chocolate, chocolate decoration.	M2, M3
4	Evaluate and analyse the Various types of sugar, isomalt used in sugar work, model of sugar work.	M4,
5	Create Bakeshop production like choux pastry, laminated pastry.	M5
6	Demonstrate, analyse & evaluate Celebration cake and different types icing.	M5, M6

Module Number	Content	Total Hours	%age of questions	Blooms Level
M 1	Analyse and illustrate about the concept of Confectionary, their Technology & Principals applied.	5	20	3,4
M 2	Demonstration of Custard, Pudding, Mousse, Soufflés, Frozen Dessert, Fruit Dessert and Dessert Presentation.	10	25	4,5
M 3	Apply & demonstrate different types of chocolates, Effect of chocolate on health, Techniques of working with chocolate, Chocolate decoration.	10	20	3,4
M 4	Apply, illustrate and Analgise the Various types of sugar, isomalt used in sugar work, model of Sugar work.	13	20	4,5,6
M5	Demonstrate & analyse Bakeshop production.	5	5	4,5

Syllabus of B. Sc. in Culinary Science (Effective for 2020-2021 Admission Session) Choice Based Credit System 140 Credit (3-Year UG) MAKAUT Framework w.e.f 2020-21

M6	Demonstrate & discuss Celebration	5	10	4,5
	cake and different types icing.			
		48	100	

Detailed Syllabus

Contacts Hours / Week: 4(L) + 2(P)

Credit: 4

Module 1: Introduction to structure and physical properties of primary ingredients and their chemistry. Role of Ingredients in Bakery & Confectionary, Basic syrup, Cream & Sauce, Custard, ice cream, Pudding, Mousse & Soufflés, Frozen Dessert, Fruit Dessert, Dessert Presentation. (4 Hours)

Module 2: Equipment's used and Technology & Principals applied in Bakery & Confectionary, Classification Categorization of equipments, Industrial production and practice (12 Hours)

Module 3: Chocolateries: History, Production of Chocolate, Types of Chocolate, Effect of chocolate on health, Techniques of working with chocolate, Chocolate decoration. (12 Hours)

Module 4: Sugar craft: Fundamentals, Tools for Sugar work, various types of sugar used in sugar work, boiling syrups for sugar works, Spun Sugar & Caramel Decorations, Poured Sugar, Pulled sugar and Blown sugar, Use of Isomalt. (12 Hours)

Module 5: Demonstrate & analyse Bakeshop production like choux pastry, laminated pastry., innovation, process improvement, quality assurance-small, margin, large(10 Hours)

Module 6: Demonstrate & analyse Celebration cake and different types icing. (10 Hours)

Note: Module 5 & 6 are also considered for Practical Evaluation.

Suggested Readings:

Professional Baking by Wayne Gisslen (Fourth Edition).

Professional Baking- American Culinary Institute.

A professional text to Bakery & Confectionary by John Kingslee.

Theory of bakery & patisserie by Bali Parvinder S.

Syllabus of B. Sc. in Culinary Science
(Effective for 2020-2021 Admission Session)
Choice Based Credit System
140 Credit (3-Year UG) MAKAUT Framework
w.e.f 2020-21

Practical – Advanced Bakery and Confectionary Credits – 2

Course Objective: The course is designed to provide a thorough knowledge and skills of advance Bakery and Confectionary, various plating techniques. It will also help the learners to acquire knowledge about store management.

Sl.	Course Outcome (CO)	Mapped
1	Analyse and apply the store management and their unique factors	1,2
	and skills involved.	
2	Evaluate and apply various advance equipment, tools and	1,2
	ingredients for food production and plating style.	
3	Design production and their display.	2,3
4	Develop choclateries, sugar craft products and pastries and icings	4

Module Number	Content	Total Hours	%age of questions	Bloom's Level
Module 1	Analyse and apply the store management and their unique factors and skills involved.	8	40%	3,4
Module 2	Evaluation & application of various advance equipment, tools and ingredients for food production and plating style.	7	25%	4,5
Module 3	Preparing various breakfast menus / buffet spread in quantity production and their display.	7	25%	4,5
Module 4	Preparation of choclateries, sugar craft products and pastries and icings	6	10%	5,6
		28	100	

Module 1 – To analyse and apply the store management and their unique factors and skills involved, inventory management and control, automation, optimization

Module 2 – Evaluation & application of various advance equipment, tools and ingredients for food production and plating style, categorization and classification of equipments, tools ingredients mapping.

Module 3 – Preparing various breakfast menus / buffet spread in quantity production and their display experimentation with new menu designs, local, regional and global breakfast menus as evaluation

Module 4 - Preparation of choclateries, sugar craft products and pastries and icings

Syllabus of B. Sc. in Culinary Science
(Effective for 2020-2021 Admission Session)
Choice Based Credit System
140 Credit (3-Year UG) MAKAUT Framework
w.e.f 2020-21

Suggested Readings:

Professional Baking by Wayne Gisslen (Fourth Edition).

Professional Baking- American Culinary Institute.

A professional text to Bakery & Confectionary by John Kingslee.

Theory of bakery & patisserie by Bali Parvinder S.

DSE 1: Basics of Cloud Kitchen and Operations

Code: BSCA 503(A)

Credits: 6

Contact Hours: 5(L) + 1(T)

Course Objective: The course is designed to provide a thorough knowledge and skills of Cloud Kitchen operations, various planning and implementing techniques. It will also help the learners to make use of about entrepreneurship opportunities.

Sl.No	Course Outcome	Mapped modules
1	Analyse and evaluate The Vision and Mission of a	M1, M2
	Cloud Kitchen Brand	
2	Evaluate and explain the Importance and Aspects of	M1 ,M2
	Budgeting	
3	Illustrate on the Location and the basis of its selection	M2, M3
4	Articulate and apply the compliance that needs to be	M4, M5, M6
	followed	
5	Demonstrate the model of Menu Engineering along	M1 ,M4, M5, M6
	with the importance of Pricing	
6	Application and association of Aggregators	M2, M4, M5 ,M6

Module Number	Content	Total Hours	%age of questions	Blooms Level
M 1	Vision and Mission of Brand	4	10	2,3,4
M 2	Importance and Aspects of Budgeting	8	10	2,3,4
M 3	Choosing of Strategic Location	10	25	3,4,5
M 4	Compliances	12	20	3,4
M 5	Costing and Menu Engineering	4	15	4,5,6
M 6	The importance of Pricing	14	10	4,5

Syllabus of B. Sc. in Culinary Science (Effective for 2020-2021 Admission Session) Choice Based Credit System O Credit (3-Vear UC) MAKAUT Framewor

140 Credit (3-Year UG) MAKAUT Framework w.e.f 2020-21

M7	Branding and Marketing	8	10	2,3
		60	100	
	Tutorial	16		

Module 1 – Vision and Mission of the Brand. Need of a Vision for a Cloud Kitchen, Importance of Mission for a Cloud Kitchen, The impact of Vison and Mission on Cloud Kitchen Success, How to Start a Business, Project selection and Market Survey. (4 Hours)

Module 2 – Budgeting: Budgeting and its importance before beginning the business, Aspects of Budgeting in a cloud kitchen (8 Hours)

Module 3 – Choosing of Strategic Location: Choosing of Location to keep the Budget in Place, Right Location to reduce Capital Investments, what to do which Location is Closed, Simultaneous work that need to be done, Choosing Contractor and Closing on the best deal. (10 Hours)

Module 4 – Compliances: Licenses Required, Food Safety, Personal Hygiene, FSSAI, Tackling Compliances Issues, Government Schemes and Concessions, Guideline for Project Report and Preparation for Loan. (12 Hours)

Module 5 – Costing and Menu Engineering: How to Calculate Costing, The Reverse Calculation for better Profits, choosing of a menu that minimizes wastages, Portioning Food. (4 Hours)

Module 6 – The importance of Pricing: What to include in Pricing, Importance of two different prices for customers, how to make profits with the help of Right Pricing (14 Hours)

Module 7 Branding and Marketing- Branding and Marketing, how does Branding Help, choosing a POS, dealing with Aggregators, why aggregators are important for building the brand. Choosing the right Food delivery options.

- How to start a Cloud Kitchen Business: Decoding the Cloud Kitchen Business Module? By Sebi Tharoor.
- Cloud Kitchen: Restaurant at the speed of internet by Daniel Guedes
- Secrets of Cloud Kitchen by Manvir Singh Anand
- New Indian Take Away: Cookbook and guide to start a modern Indian take away business by Bobby Geetha
- Catering your way to Financial Independence. By Manvir Singh Anand
- Food Delivery Restaurant Success: How to start or manage your Business in Hospitality by Nikki Yakin.
- How to start, run and grow a quick service Fast Food Restaurant by Robert Winfield.

Syllabus of B. Sc. in Culinary Science (Effective for 2020-2021 Admission Session) Choice Based Credit System 140 Credit (3-Year UG) MAKAUT Framework w.e.f 2020-21

DSE 1- Institutional and Industrial Catering

Code-BSCA 503(B)

Credits: 6

Contact Hours: 5(L) +1(T)

Course Objective: The course is designed to build the concept of Institutional and Industrial catering. Students will be able to make use of strategies and policies adopted for the outdoor catering, menu planning, problems associated with the type of catering and functions and types of menus followed in catering institutions.

Sl. No	Course Outcome	Mapped Module
1	Analyse the Intuitional and Industrial catering.	M1
2	Identify the Types of Institutional and Industrial Catering	M1, M2,M3
3	Analyse Problems associated with the type of catering	M2, M3,M4
4	Evaluate the scope for Growth and Development	M2, M3,M4,M5
5	Apply the Diet Menus and Nutritional Requirements	M2, M5
6	Analyse, evaluate and implement the production system of Intuitional and Industrial catering.	M5,M6

Module No.	Headline	Total % of Blooms Hours questions Level		
1	Concept of Intuitional and Industrial catering	10	20	3, 4
2	Types of Institutional Catering and Industrial Catering	5	10	3,4
3	Problems associated with the type of catering	15	25	3,4,5
4	Scope for Growth and Development	15	25	2, 3, 4
5	Diet Menus and Nutritional Requirements	10	10	3, 4,
6	Production system of Intuitional and Industrial catering	5	10	3, 4
		60		

Syllabus of B. Sc. in Culinary Science (Effective for 2020-2021 Admission Session) Choice Based Credit System 140 Credit (3-Year UG) MAKAUT Framework w.e.f 2020-21

	Tutorial	16		
				Ĺ

- Module 1: Concept of Intuitional and Industrial catering: Historic roots and importance of catering Industry, relation between Tourism and Catering, Importance of Institutional and Industrial Catering. (Total Hours: 10)
- Module 2: Types of Institutional Catering and Industrial Catering: School meals catering, Hostel meals catering, Industrial canteens / cafeteria, Hospital Catering, Mobile catering: Rail Catering, Airline catering. Sea Catering, Menu consideration, Menu fatigue. (Total Hours: 05)
- **Module 3: Problems associated with the type of catering:** Competition, Finances, Scarcity of Orders, Management., Training, Food Waste, dealing with Customers, Staying Organized. Disadvantages of catering. Factors affect the success of the hospitality & catering industry: customer satisfaction, leadership, human resource management, people results, and operating results. **(Total Hours: 15)**
- Module 4: Scope for Growth and Development: Salient features of Industrial and Institutional Catering Scope of Institutional and Industrial catering in India, career opportunities in catering industry. (Total Hours: 15)
- Module 5: Diet Menus and Nutritional Requirements: Volume feeding in India, Normal Diets or Full Diets, Breakfast, Lunch, Supper/Dinner menu. Balance Diet, Light diet, Liquid diet, Special diet. Diet Chart. (Total Hours: 10)
- **Module 6: Production system of Intuitional and Industrial catering**: Menu planning and Theme Parties, Production system, Central Production Unit, Reasons for considering central production units, Small Centralized Operations, Problems associated with off-premises catering

(Total Hours: 05)

- 1. A Handbook of Industrial and Institutional Catering Hardcover by W.H. Emery
- 2. CATERING MANAGEMENT: AN INTEGRATED APPROACH by M. Sethi and Surject Malhan
- 3. Successful Catering by Bernard Splaver
- 4. Food and Beverage Service by John Cousins, Dennis Lillicrap

Syllabus of B. Sc. in Culinary Science
(Effective for 2020-2021 Admission Session)
Choice Based Credit System
140 Credit (3-Year UG) MAKAUT Framework
w.e.f 2020-21

DSE 2: Global Events and Festivals

Code: BSCA 504(A)

Credits: 6

Contact Hours: 5(L) + 1(T)

Course Objective: The course is designed to explain and examine the evolution of mega events and festivals. Students will be able to make use of the strategies and policies adopted by host nations to deliver prestigious and costly events. As part of the coursework assignment, students will be able to have to assess wide range of case studies of contemporary events. The students will be able to organise special events and festivals.

Sl. No	Course Outcome	Mapped Module
1	Analyse the foundations of events	M1
2	Identify and evaluate the mega and special events	M1, M2
3	Analyse the impact of mega & special event on Socio-cultural perspective destinations development - Economic aspects	M2, M3
4	Evaluate events, festivals and markets	M2, M3, M4
5	Analyse and apply the strategic planning of events	M2, M3,M4,M5
6	Analyse, evaluate and implement the idea of, risk and OHS management	M5,M6

Module	Торіс	Total Hours	% of questions	Blooms Level
1	Conceptual foundations of events	10	20	3, 4
2	Key contributors to the evolution of mega and special events	5	10	2,3,4
3	Impact of mega & special event on stakeholders' Socio-cultural perspective destinations development - Economic aspects	15	25	3,4,5
4	Food events, festivals and farmers' markets	15	25	2, 3, 4
5	Strategic planning of events	5	10	3, 4,
6	Legal, risk and OHS management	10	10	3, 4

Syllabus of B. Sc. in Culinary Science
(Effective for 2020-2021 Admission Session)
Choice Based Credit System
140 Credit (3-Year UG) MAKAUT Framework
w.e.f 2020-21

	60	100	

Module 1: Conceptual foundations of events: Appreciate the historic roots of celebration Recognize and assess the demographic changes affecting the global events industry Analyze the psychographic changes affecting event length, purpose, and outcomes to improve performance (**Total Hours: 10**)

Module 2: Key contributors to the evolution of mega and special events: Event tourism: Definition, evolution, and research Mega events and tourism development: discussion of "legacy" (Total Hours: 5)

Module 3: Impact of mega & special event on stakeholders' Socio-cultural perspective destinations development - Economic aspects: Events and place identity. Events and social capital. Events and authorized transgression. Accessible tourism for all Environment. Community engagement & Mutual understanding Tourism infrastructure development, Visitor reception, Spreading benefits beyond the host city, Technology innovation, Human resource development, Mainstreaming tourism in the national agenda. (Total Hours: 15)

Module 4: Food events, festivals and farmers' markets: An introduction: History of festivals, feasts and culture Food events and the local food system: Marketing, management and planning issues. Event and festival research methods and approaches, Future issues and trends: Food events, festivals and farmers' markets. (Total Hours: 15)

Module 5: Strategic planning of events Conceptualizing festival-based culinary tourism in rural destinations, Food and wine festivals: Stakeholders, long-term outcomes and strategies for success. Event administration and event co-ordination. (Total Hours: 5)

Module 6: Legal, risk and OHS management Crowding out, Price inflation, Crisis communications, Safety and security, legal compliances, risk management associated regulations and policy (Total Hours: 10)

Suggested Readings:

Allen, J., O'Toole, W., Harris, R., & McDonnell, I. (2010). Festival and special event management (5th ed.). Australia: John Wiley & Sons, Inc.

Bladen, C., Kennell, J., Abson, E., Wilde, N. (2017). *Events Management: An Introduction* (2nd ed.). Routledge. ISBN 9781138907058

Bowdin,G., Allen, J., O'Toole, W., Harris, R. McDonald, I. (2011). Event Management (2nd ed.). Routledge. Third Avenue, New York, NY

Cooper, C., & Hall, C. M. (2016). *Contemporary tourism: An international approach*. ProQuest Ebook Central https://ebookcentral.proquest.com

Syllabus of B. Sc. in Culinary Science (Effective for 2020-2021 Admission Session) Choice Based Credit System 140 Credit (3-Year UG) MAKAUT Framework w.e.f 2020-21

Evans, N. (2019). *Strategic Management for Tourism, Hospitality and Events* (3rd ed.). Routledge. ISBN 9781138345942

Getz, D. (2018). Event evaluation: Theory and methods for event management and tourism. Goodfellow Publishers.

Getz, D., Van, N. M. (2019). Event stakeholders: Theory and methods for event management and tourism. ProQuest Ebook Central https://ebookcentral.proquest.com

Wagen, L.V.D., & Carlos, B.R. (2018). Event management: for tourism, cultural, business and sporting events. New Jersey: Pearson Education, Inc.

DSE 2: Menu Function and Material Management

Code: BSCA 504(B)

Credits: 6

Contact Hours: 5(L) +1(T)

Course Objective: After successful completion of this course, student will be able to estimate and explain material management and its interface with the operational aspect of Food and Beverage production department, along with food control cycle, and its relationship with materials management.

Sl	Course Outcome	Mapped modules
1	Analyse the concept, definition, relevance and	M1
	scope of Purchase & Cost Control	
2	Analyse and evaluate the foundation of food	M1 ,M2
	control cycle.	
3	Analyse, apply & illustrate the receiving control.	M1, M2, M3
4	Apply & illustrate storing and issuing control.	M2, M3, M4
5	Illustrate and Analyse the applications of	M2, M3, M4, M5.
	production control.	

Module	Content	Total Hours	%age of questions	Blooms Level
M 1	Introduction:	10	10	3,4
	Materials Management - Evolution,			
	Importance, Scope and Objectives.			
M 2	Integrated materials / store management	10	25	3,4
	- Scope and objective - Purchasing			
	management Vendor selection and rating -			
	Inventory Management.			
M 3	Material Requirement Planning -	15	25	3,4,5
	Advantages over conventional planning			
	(Order Point Method) – Input and output of			
	MRP system.			
M 4	Purchasing Management -	10	15	4,5
	Responsibilities of Purchase Department -			
	Purchase Cycle.			

Syllabus of B. Sc. in Culinary Science (Effective for 2020-2021 Admission Session) **Choice Based Credit System**

140 Credit (3-Year UG) MAKAUT Framework w.e.f 2020-21

M 5	Materials Handling - Principles of	15	25	3,4
	Materials Handling system - Materials			
	Handling Equipment's – Safety issues.			
		60	100	
	Tutorial	16		

Module 1-Introduction:

Materials Management - Evolution, Importance, Scope and Objectives - Interface with other functions. Concept of material Management - Objectives, Components, Significance - Supply Chain Management – Objectives, Components, Significance, Trade off Customer Service & Cost (10 hours)

Module 2- Integrated materials / store management - Scope and objective - Purchasing management Vendor selection and rating - Inventory Management - Types of Inventory -Inventory concept - Levels of Inventory - Store layout and planning - Storage system -Storing - Records and documents - Inventory verification - Stock adjustment - Inventory Management systems – software used (10 hours)

Module 3- Material Requirement Planning - Advantages over conventional planning (Order Point Method) – Input and output of MRP system - Forecasting – Overview of quantitative and qualitative methods of forecasting - Master Production Schedule - Bill of Materials – Material flow in MRP. MRP II. Concept of ERP. (Numerical expected on BOM Explosion, estimating Net requirements) (15 hours)

Module 4- Purchasing Management - Responsibilities of Purchase Department - Purchase Cycle - Negotiation & Bargaining - Vendor relations - Purchasing Methods - Global sourcing - Stores – Functions, Importance, Organization of stores & Stores layout. Stores procedure – documentation. - Inventory control & Cost Reduction techniques: Inventory turns ratios - Standardization – need and importance (10 hours)

Module 5 Materials Handling - Principles of Materials Handling system - Materials Handling Equipment's – Safety issues, Relevant case studies (15 hours)

- 1. Purchasing and Supply Management Dobler and Burt
- 2. Materials Management Dutta
- 3. Purchasing and Materials Management K S Menon
- 4. Handbook of Materials Management Gopalkrishnan
- 5. Materials & Logistics Management L.C.Jhamb
- 6. Introduction to Materials Management Arnold
- 7. Logistics & Supply Chain Management Martin Christophe