

ANNEXURE - III

Model Curriculum - Job Code 3

Job Code: IBSC / BME / 03

Qualification Title: Biomedical Manufacturing

Occupation(s) to which the qualification give access: Production Manager

Syllabus:

MF01: Operations Management Functions and Strategies

MF02: Product Development, Testing, Evaluation, & Modification

MF03: Manufacture & Assembly (Design and process)

MF04: Materials Handling and Inventory Management

MF05: Service Delivery Management

Course Curriculum:

MF01 Operations Management Functions and Strategies

- Operations and Production Management, organizing to produce goods and services, operations in the service sector, new trends and operation and production management.
- Goods and services selection, generating new products, product development, issues for product design, time-based competition, defining the product, documents for production.
- Process strategies, process analysis and design, service process design, selection of equipment and technology, production technology, technology in service industry, environmentally friendly processes, business process reengineering.
- Functions of inventory, inventory management, inventory models.
- Project planning, project scheduling, project control, project management techniques.
- Quality & Strategy, defining quality, international quality standards, total quality management, tools of total quality management.

MR02 Product Development, Testing, Evaluation, & Modification

- Introduction to new product development, product development methodologies and organization, identifying market opportunities product planning, understanding customer and user needs, product specifications, product architecture, industrial design, user interface design, program management for product development.
- Design for manufacturing, product testing and reliability, simulation and design tools, design for the environment, product lifecycle management, product portfolio management, information technology, software development methodologies,
- New Product Testing & Evaluation, Documentation Development / Management. Product / Systems Quality Management, Device Modifications, Medical Device Design, Product Research and Development, Medical Device Concept Development / Invention, Other Product Development Responsibilities, Product Sales / Sales Support

MF03 Manufacture & Assembly (Design and process)

- An Introduction to Design for Manufacture and Assembly: Define manufacturing and describe how it is used to solve problems. Research the five general steps of manufacturing (preparation, processing, assembly, finishing and packaging).
- Design for assembly techniques: Assembly model, assembly drawing, manufacturing process plan, electromechanical assembly, test and troubleshoot electromechanical systems.
- Identify and describe a wide range of materials used in manufacturing: organic, inorganic, engineering (metallic, polymeric, ceramic, composite). And non-engineering (gases and liquids).

- Do's and don'ts in manual assembly, assembly time estimation, design for robotic assembly considerations.
- Design for Assembly: Boothroyd Dewhurst method, theoretical minimum number of parts, Xerox producibility index (XPI) method.

MF04 Materials Handling and Inventory Management

- Introduction to materials management, operating environment, the supply chain concept. Manufacturing planning and control system, sales and operations planning, manufacturing resource planning, enterprise resource planning, making the production plan.
- The essential activities of receiving materials, methods to determining the destination and direction of uploaded products, identify and demonstrate selecting the most appropriate and current packing material to package products.
- Government regulations related to hazardous materials handling, safe work practices for unloading and loading hazardous materials, safe work practices for transfer and storage of hazardous materials.
- Understand that modern practice discourages holding large quantities of inventory, the significance of controlling actual, on-hand inventory as both a physical object and as an intangible object.
- Understand the fundamental difference between finished goods inventories in the retail / distribution sectors and raw materials and work-in-process inventories found in the manufacturing environment.

MF05 Service Delivery Management

- Introduction to the service delivery management, service delivery system, delivering excellent services, understanding the service customer, customer

management, customer satisfaction: expectations and quality perception, creating customer equity, managing customer value.

- Service management issues, managing demand and resources, managing quality, pricing theory, pricing and revenue optimization. What are the key elements of Service, what operating decisions allow value proposition. The service frame work: the service model – service offering, funding mechanism, customer management system.
- Service contract management, equipment performance testing, maintenance, software administration, develop test / calibration / maintenance procedures, Parts / supply purchase and / or inventory management, technical library / service manuals management.

Career Graph for Certificate in Biomedical Manufacturing


