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## INTERNATIONAL MASTERS' DEGREE FOR THE FURNITURE & WOOD WORKING SECTOR

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The aim of **“IM-FUTURE”** is to develop the content for an International Masters' Degree in the furniture sector and this document has been put together to support feedback received from the industry as a discussion document for the partners.

This document compliments the *'Report on the Furniture and woodworking Industry: academic programmes'* produced by the University of Murcia

This document contains competences and outcomes for the main functions within organisations in the furniture & wood sector. The ultimate aim is to reduce the content - based on industry feedback - to the needs of the sector. The course would then allow students to acquire the capability to apply or use a set of related knowledge, skills, and abilities required to successfully perform 'critical work functions' or tasks in defined work settings.

## QUALIFICATIONS REQUIRED TO UNDERTAKE COURSE

A postgraduate degree or demonstrable experience in a management position or other critical role in a furniture or woodworking organisation. The applicant must demonstrate good communications skills and understanding of mathematics & data analysis.

## PROFESSIONAL COMPETENCES

**Students will cover the following competences and demonstrate they have acquired skills and knowledge in each of the outcomes.**

### COMPETENCE - PRODUCTION ENGINEERING

represents the knowledge, skills, and abilities needed for a production engineer

OUTCOMES – TO DEMONSTRATE AN UNDERSTANDING OF:

- Material properties, construction, product development including proto-types
- Production technology, production optimisation
- Production organisation and business administration
- Mechanical engineering and automation
- Maintenance management and tracking programs
- Eco-sustainability including 'design-for-life'

### COMPETENCE - PRODUCTION SCHEDULING & PLANNING

**represents the knowledge, skills, and abilities needed for a production scheduler and planner**

OUTCOMES – TO DEMONSTRATE AN UNDERSTANDING OF:

- Master planning
- Production planning
- Planning processes
- Sales and operations planning
- Demand management and forecasting
- Strategic sourcing and purchasing
- Capacity management
- Scheduling techniques and control
- Master production schedule and final assembly schedule
- Risk management

## COMPETENCE - OPERATIONS MANAGEMENT & PROCESS IMPROVEMENT

represents the knowledge, skills, and abilities needed for operations management and process improvements

OUTCOMES – TO DEMONSTRATE AN UNDERSTANDING OF:

- Operations strategy
- Manufacturing & finishing process environments
- Standards (time measurement)
- Process improvement and six sigma (statistical analysis tool)
- Lean management
- General sustainability
- Identifying & eliminating causes of quality & process variations
- Optimisation - systematic approaches to close process/system performance gaps
- Continuous improvement - establishing key performance measurements, benchmarking metrics
- Recycling opportunities

## COMPETENCE - LOGISTICS, WAREHOUSE, DISTRIBUTION & SUPPLY CHAIN MANAGEMENT

represents the knowledge, skills, and abilities needed for logistics operations, warehousing, distribution and management of the supply chain

OUTCOMES – TO DEMONSTRATE AN UNDERSTANDING OF:

- Transportation, distribution, logistics
- Warehousing
- Distribution requirements planning, Inventory management
- Demand management and forecasting
- Enterprise resources planning and manufacturing resource planning
- Security and hazardous materials regulations
- Dispatching
- Risk management
- Warehouse management systems
- Supply chain management and synchronisation
- Vendor managed inventory
- International regulations
- Locating facilities
- Strategic sourcing and purchasing
- Business and supply chain strategy
- Applying lean and six sigma tools

## COMPETENCE – MATERIALS MANAGEMENT

represents the knowledge, skills, and abilities needed for managing materials and interfacing with suppliers and in-house personnel

OUTCOMES – TO DEMONSTRATE AN UNDERSTANDING OF:

- Converting demand requirements into schedules for inventory acquisition
- Calculate key inventory performance metrics
- Inventory management
- Communications with suppliers and with company departments
- Sustainability

## COMPETENCE – QUALITY CONTROL

represents the knowledge, skills, and abilities needed for controlling quality

OUTCOMES – TO DEMONSTRATE AN UNDERSTANDING OF:

- Principles of Total quality management (TQM) – customer – supplier interface
- Quality improvement tools - six sigma/ flowcharts/ Pareto charts/cause-and-effect diagrams/control charts/check sheets/scatter diagrams/histograms
- Continuous improvement
- Statistical techniques
- Standards registration

## COMPETENCE - PURCHASING

represents the basic knowledge needed to understand the purchasing function

OUTCOMES – TO DEMONSTRATE AN UNDERSTANDING OF:

- Internal demand analysis
- Market analysis
- Strategy development
- Supplier analysis
- Negotiation
- Contract management
- Supplier assessment
- Supplier development
- Change management
- Optimization of purchasing process
- Network building



## COMPETENCE – BUSINESS FINANCE

represents the basic knowledge needed understanding the business finance function

OUTCOMES – TO DEMONSTRATE AN UNDERSTANDING OF:

- Financial Accounting and Reporting
- Cost Accounting and Management
- Business Planning
- Management and Reporting Analysis
- Accounting Information Systems
- Tax Accounting

## COMPETENCE – SALES

represents the basic knowledge needed to understand the sales function

OUTCOMES – TO DEMONSTRATE AN UNDERSTANDING OF:

- Develop, assess and implement national international sales strategies
- Analyse, assess and apply methods and tools to support the sales performance
- Assess the competitive position of a business
- Substantiate and communicate the chosen strategies into a sales plan
- Create a motivating environment

## COMPETENCE – MARKETING

represents the basic knowledge needed to understand the marketing function

OUTCOMES – TO DEMONSTRATE AN UNDERSTANDING OF:

- Advertising and Sales Promotion
- Branding and Positioning
- Content Marketing
- Customer Experience Management
- Customer Relationship Management
- Digital Marketing
- Event Management
- Integrated Marketing Communications

## COMPETENCE – INTERNATIONAL TRADE

represents the basic knowledge needed to understand exporting

OUTCOMES – TO DEMONSTRATE AN UNDERSTANDING OF:

- International Trade
- International Joint Ventures
- Legal Aspects of a Global Business
- Transportation Techniques and Management
- Strategic Marketing
- Research – identifying market & country
- Market entry
- The export plan
- Etiquette
- Local sources for help and support

## COMPETENCE – HUMAN RESOURCES & CONFLICT MANAGEMENT

represents the basic knowledge needed of the HR process and how to deal with conflict issues should they arise in an organizational setting

OUTCOMES – TO DEMONSTRATE AN UNDERSTANDING OF:

- People & negotiating skills
- Legal compliance
- HR Processes
- Conflict management and resolution

## COMPETENCE – TRAINING NEEDS

### ANALYSIS/MANPOWER/SUCCESSION PLANNING

represents the basic knowledge needed analysing training needs, setting manpower & succession plans

OUTCOMES – TO DEMONSTRATE AN UNDERSTANDING OF:

- Manpower Analysis
- Person Analysis – individuals and instructors
- Work analysis / Task Analysis
- Performance Analysis
- Content Analysis
- Training Suitability Analysis
- Cost-Benefit Analysis
- Succession planning of internal talent to meet those future needs
- Preparing plans to present to Directors

## COMPETENCE – FUNDAMENTALS OF DESIGN & FURNITURE DESIGN HISTORY

provides the individual with basic knowledge of design and the designer's role

OUTCOMES – TO DEMONSTRATE AN UNDERSTANDING OF:

- The fundamentals of design
- The design process
- Materials & making - themes in design history
- Role of designer within the manufacturing process
- Design systems (combined with fundamentals of enabling technologies and CAD)
- Modelling to test suitability (proto-types)

## COMPETENCE – FUNDAMENTALS OF MAKING & FINISHING

provides the individual with basic knowledge of the various making and finishing processes in the furniture and wood industry

OUTCOMES – TO DEMONSTRATE AN UNDERSTANDING OF:

- Tools and equipment used
- How and where components are used
- Appropriate equipment to cut materials within acceptable tolerances
- The principles of joints used in making hand-crafted furniture
- Uses and applications for veneers and laminates
- Finishes in the production process including stains, veneers, laminates etc.
- Sequence of assembly
- Measure and mark out materials to specification
- Grit sizes and the process of sanding
- Positioning of components and application of cramps
- Preparation and assembling components to specification
- Types, methods and processes involved in gluing
- Uses for jigs and templates for furniture production
- The edge banding process
- Fitting mechanical or electrical components to furniture
- Rectification or rework
- The various finishing processes – manual and machine
- Safe handling and storage

## COMPETENCE – FUNDAMENTALS OF STANDARDS – REGULATORY & TECHNICAL

provides the individual with basic knowledge of the various national and international standards and regulations that affect the industry

OUTCOMES – TO DEMONSTRATE AN UNDERSTANDING OF:

- The importance of standards & regulations and legal standing
- The particular local standards & regulations affecting the furniture & wood sectors
- The particular European and international standards & regulations affecting the furniture & wood sectors
- Sources for acquiring standards and regulations

## COMPETENCE – FUNDAMENTALS OF HEALTH / SAFETY / ENVIRONMENTAL LAWS

provides the individual with basic knowledge of the various national and international health, safety and environmental laws as they affect the industry

OUTCOMES – TO DEMONSTRATE AN UNDERSTANDING OF:

- The importance of health, safety and environmental laws
- The particular local health, safety and environmental laws affecting the furniture & wood sectors
- The particular European and international health, safety and environmental laws affecting the furniture & wood sectors
- Sources for acquiring health, safety and environmental laws
- Recognition & Evaluation of Risks
- Risk Control & Communication
- EHS Systems & Knowledge

## COMPETENCE – FUNDAMENTALS OF ENABLING TECHNOLOGIES

provides the individual with basic knowledge of the various Key Enabling Technologies that can improve production, process and administrative functions

OUTCOMES – TO DEMONSTRATE AN UNDERSTANDING OF:

- Materials requirements planning systems
- Manufacturing resource planning systems
- Sales Order Processing systems
- 3-D visualisation



- 3-D printing (proto types)
- Computer aided design (CAD)
- Computer Aided Manufacture including cutting optimisation systems
- Enterprise Resource Planning
- Production Management Information Systems
- Inventory Control Systems
- Warehousing and Distribution Systems
- Integrated Manufacturing and Distribution Systems
- Customer relationship management systems
- Integrated Accounting Systems

## PERSONAL COMPETENCES

### WORKPLACE AND LEADERSHIP COMPETENCIES

represent those skills and abilities that allow individuals to function in an organizational setting

- Problem solving and decision making
- Teamwork and collaboration
- Accountability and responsibility
- Customer focus (internal and external)
- Planning and organising
- Conflict management
- Supporting and training staff

### PERSONAL EFFECTIVENESS COMPETENCIES

represent motives and traits as well as interpersonal and self-management styles and generally are applicable to a number of industries at a national level

- Awareness of the needs of others
- Integrity
- Effective communication
- Interpersonal skills