

Programme Specifications



Programme: Bachelor in Vocational Degree

Course: Product Design & Modelling

Faculty: Faculty of Art & Design

Directorate of Training & Lifelong Learning
M. S. Ramaiah University of Applied Sciences

University House, New BEL Road, MSR Nagar, Bangalore – 560 054

www.msruas.ac.in

Programme Specifications and Syllabus for awards

Vocational Diploma, Vocational Advanced Diploma, Bachelor of Vocational Degree in Product Design and Modelling

1. Title of the Awards

Vocational Diploma in Product Design and Modelling
Vocational Advanced Diploma in Product Design and Modelling
Bachelor of Vocational Degree in Product Design and Modelling

2. Modes of Study

Full-Time

3. Awarding Institution /Body

M.S. Ramaiah University Of Applied Sciences – Bangalore, India

4. Joint Award

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5. Teaching Institution

Directorate of Training and Lifelong Learning
M S Ramaiah University of Applied Sciences - Bangalore, India

6. Date of Course Specifications

May 2016

7. Date of Course Approval by the Training and Lifelong Learning Council of MSRUAS

May 2016

8. Course Benchmark

UGC Guidelines

9. Rationale for the Course

Indian Engineering and Design sector has witnessed a combined growth rate of about 15 percent touching US\$ 26.4 billion over the last year driven by increased national and global demand for its produce. India is on the quest to showcase its development power globally while promoting locally designed and developed products with its Make in India campaign.

Many local and international firms such as TATA Motors, GMR, Suzuki, Hyundai, TVS, GE, Ford, Samsung, Godrej, Royal Enfield, to name a few have set up R&D and Design centres in India to develop innovative products and offerings. To cater to these industries, helping them visualize their conceptual ideas physically, skilled model makers are required. There is remarkable potential for model makers in the industry today as there is an enormous dearth of skilled labour in this ever growing sector.

This course provides the prospective students with a strong foundation of the art of creating scaled models and prototypes of the concepts envisioned by prestigious R&D and Design centres in India and abroad. Bangalore with its industrial areas located in various locations such as Peenya, Dobaspet, Bidadi, Harohalli, Jigani, Bommasandra, Electronic City, Whitefield and Hebbal provide an ideal platform for students to learn and work in an Industrial environment.

10. **Course Aim**

The aim of the course is to develop skilled professionals who can create models of product concepts based on the requirements of the Engineering and Design Industry.

11. **Course Objectives**

The objectives of the course are:

1. To impart knowledge on general education including material science, mechanics, electrical and electronics, computer applications, economics and sociology
2. To impart training on effective application of the elements of design to build forms and structures to communicate ideas of products and systems
3. To use appropriate materials to realize intended design ideas
4. To impart training on physical and virtual tools to accurately model and build a design concept to meet client requirements
5. To impart knowledge on managerial subjects and general subjects like principles of management, accountancy, customer relationship, behavioural skills, communication skills, for successful operation of product model making business

12. **Intended Learning Outcomes of the Course**

The Intended Learning Outcomes (ILOs) are listed under three headings:

1. Knowledge and Understanding
2. Practical Skills and
3. Capability/Transferable Skills.

12.1 **Knowledge and Understanding**

After undergoing this course, the student will be able to :

1. Explain the principles involved in general education
2. Describe the application of design elements for creating three dimensional forms
3. Describe the tools and techniques for creating virtual and physical models using appropriate materials
4. Read and understand various safety regulations, labour laws connected with model making and manufacturing Industry

12.2 Practical Skills

After undergoing this course, the student will be able to :

1. Prepare and interpret 2D drawings to create representational physical models
2. Practice construction of various 3D forms and structures
3. Operate various equipment and machinery involved in cutting and finishing raw materials for model making
4. Build mock up models and prototypes using appropriate material and surface finishes

12.3 Capability/Transferable Skills

After undergoing this course, the student will be able to :

1. Develop a project report to set up a model making studio
2. Manage operations, finances, accounting and tax calculations
3. Communicate effectively with suppliers and customers
4. Build team and manage team
5. Use modern ICT tools for efficient operation of the model making business

13. Course Structure

A student is required to successfully complete the following modules for the award of the degree. The course is delivered as per the Time-Table for every batch.

Vocational Diploma**Semester-1**

General Education: 12 Credits, 180 Hours				
S. No.	Code	Module Title	Credit	Hours
1	VGE075	General Communication - English	4	60
2	VGE041	Computer Applications - 1	4	60
3	VGE060	Environmental Science	4	60
Vocational Education: 18 Credits, 270 Hours				
S. No.	Code	Module Title	Credit	Hours
1	VPD001	Foundation Sketching	6	90
2	VPD002	Manual Rendering	6	90
3	VPD003	Physical Form Exploration	6	90

Semester-2

General Education: 12 Credits, 180 Hours				
S. No.	Code	Module Title	Credit	Hours
1	VGE057	Engineering Mechanics and Mechanisms	4	60
2	VGE042	Computer Applications - II	4	60
3	VGE051	Electrical Technology	4	60
Vocational Education: 18 Credits, 270 Hours				
S. No.	Code	Module Title	Credit	Hours
1	VPD004	Materials for Product Modelling	6	90
2	VPD005	CAD Drawing	6	90
3	VPD006	Physical Model Making I	6	90

Vocational Advanced Diploma**Semester-1**

General Education: 12 Credits, 180 Hours				
S. No.	Code	Module Title	Credit	Hours
1	VGE052	Electronic systems	4	60
2	VGE050	Economics	4	60
3	VGE115	Sociology	4	60
Vocational Education: 18 Credits, 270 Hours				
S. No.	Code	Module Title	Credit	Hours
1	VPD007	Elements of Design	6	90
2	VPD008	Digital Product Illustration	6	90
3	VPD009	Physical Model Making II	6	90

Semester-2

General Education: 12 Credits, 180 Hours				
S. No.	Code	Module Title	Credit	Hours
1	VGE094	Legal Aspects of Business	4	60
2	VGE011	Accountancy	4	60
3	VGE081	Human Resource Management	4	60
Vocational Education: 18 Credits, 270 Hours				
S. No.	Code	Module Title	Credit	Hours
1	VPD010	3D Virtual Modelling	6	90
2	VPD011	Model Machining Processes	6	90
3	VPD012	Physical Model Detailing and Surface Finishing	6	90

Vocational Degree**Semester-1**

General Education: 12 Credits, 180 Hours				
S. No.	Code	Module Title	Credit	Hours
1	VGE106	Principles of Management	4	60
2	VGE020	Banking & Taxation	4	60
3	VGE097	Materials for Product Development	4	60
Vocational Education: 18 Credits, 270 Hours				
S. No.	Code	Module Title	Credit	Hours
1	VPD013	Design Essentials	6	90
2	VPD014	3D Surface Modelling	6	90
3	VPD015	Reverse Engineering and Rapid Prototyping	6	90

Semester-2

General Education: 12 Credits, 180 Hours				
S. No.	Code	Module Title	Credit	Hours
1	VGE045	Customer Relation Management	4	60
2	VGE029	Behavioral Skills	4	60
3	VGE031	Business Communication	4	60
Vocational Education: 18 Credits, 270 Hours				
S. No.	Code	Module Title	Credit	Hours
1	VPD016	Work Portfolio	6	90
2	VPD017	Safety Regulations and Labor Laws in Industry	2	30
3	VPD018	Project	10	150

14. Delivery Structure

The course is in a semester pattern with an average of 30 hours of interactions per week and 15 weeks per semester

15. Teaching and Learning Methods

The module delivery comprises of a combination of few or all of the following:

1. Face to Face Lectures using Audio-Visuals
2. Demonstrations
3. Laboratory/Field work/Workshop
4. Industry Visit
5. Group Exercises
6. Project Exhibitions
7. Technical Festivals

16. Assessment and Grading

Each module is assessed for a total of 100 marks with two tests each of 25 marks and a final examination of 50 marks for general education modules and similar pattern is followed for vocational based modules with emphasis on skills. A candidate is required to score a minimum of 40% overall in each of the modules.

17. Failure

If a student fails in a module, he/she is required to take up the make-up examination.

18. Attendance

A student is required to have a minimum attendance of 75% in each of the modules.

19. Award of Class

As per the Academic Regulations for Vocational Programme.

20. Student Support for Learning

Student are given the following support:

1. Module notes
2. Reference books in the library
3. Magazines and Journals
4. Internet facility
5. Computing facility
6. Laboratory facility
7. Workshop facility
8. Staff support
9. Lounges for discussions
10. Any other support that enhances their learning

21. Quality Control Measures

Following are the Quality Control Measures:

1. Review of module notes
2. Review of question papers
3. Student feedback
4. Moderation of assessed work
5. Opportunities for the students to see their assessed work
6. Review by external examiners and external examiners reports
7. Staff student consultative committee meetings
8. Student exit feedback
9. Subject Assessment Board
10. Programme Assessment Board



