



# Programme Specifications

B.Voc. Programme

Programme:  
Product Design and Modelling

Faculty  
Faculty of Art and Design

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

<b>1.</b>	<b>Title of the Awards</b>
	Vocational Diploma in Product Design and Modelling Vocational Advanced Diploma in Product Design and Modelling Bachelor of Vocational Degree in Product Design and Modelling
<b>2.</b>	<b>Modes of Study</b>
	Full-Time <input checked="" type="checkbox"/>
<b>3.</b>	<b>Awarding Institution /Body</b>
	M.S. Ramaiah University Of Applied Sciences – Bangalore, India
<b>4.</b>	<b>Joint Award</b>
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<b>5.</b>	<b>Teaching Institution</b>
	Directorate of Training and Lifelong Learning M S Ramaiah University of Applied Sciences - Bangalore, India
<b>6.</b>	<b>Date of Course Specifications</b>
	May 2016
<b>7.</b>	<b>Date of Course Approval by the Training and Lifelong Learning Council of MSRUAS</b>
	May 2016
<b>8.</b>	<b>Course Benchmark</b>
	UGC Guidelines
<b>9.</b>	<b>Rationale for the Course</b>
	<p>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.</p> <p>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&amp;D and Design centers 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 labor in this ever growing sector.</p> <p>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&amp;D and Design centers in India and abroad. Bangalore with its industrial areas located in various locations such</p>

	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.	<p><b>Course Aim</b></p> <p>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.</p>
11.	<p><b>Course Objectives</b></p> <p>The objectives of the course are:</p>
	<ol style="list-style-type: none"> <li>1. To impart knowledge on general education including material science, mechanics, electrical and electronics, computer applications, economics and sociology</li> <li>2. To impart training on effective application of the elements of design to build forms and structures to communicate ideas of products and systems</li> <li>3. To use appropriate materials to realize intended design ideas</li> <li>4. To impart training on physical and virtual tools to accurately model and build a design concept to meet client requirements</li> <li>5. To impart knowledge on managerial subjects and general subjects like principles of management, accountancy, customer relationship, behavioral skills, communication skills, for successful operation of product model making business</li> </ol>

12.	<b>Intended Learning Outcomes of the Course</b>	
	<p>The Intended Learning Outcomes (ILOs) are listed under three headings:</p> <p>1. Knowledge and Understanding 2. Practical Skills and 3. Capability/Transferable Skills.</p>	
	<b>12.1</b>	<b>Knowledge and Understanding</b>
		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

	<b>12.2</b>	<b>Practical Skills</b>
		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
	<b>12.3</b>	<b>Capability/Transferable Skills</b>
		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

<b>13.</b>	<b>Course Structure</b>
	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**19 **Programme Structure****Vocational Diploma****Semester-1**

<b>General Education: 12 Credits, 180 Hours</b>				
<b>S. No.</b>	<b>Code</b>	<b>Module Title</b>	<b>Credit</b>	<b>Hours</b>
1	VGE017	Communication skills-1	4	60
2	VGE021	Computer Applications - 1	4	60
3	VGE008	Basic Electrical Systems	4	60
<b>Vocational Education: 18 Credits, 270 Hours</b>				
<b>S. No.</b>	<b>Code</b>	<b>Module Title</b>	<b>Credit</b>	<b>Hours</b>
1	VPD001	Foundation Sketching	6	90
2	VPD002	Manual Rendering	6	90
3	VPD003	Physical Form Exploration	6	90

**Semester-2**

<b>General Education: 12 Credits, 180 Hours</b>				
<b>S. No.</b>	<b>Code</b>	<b>Module Title</b>	<b>Credit</b>	<b>Hours</b>
1	VGE033	Engineering Mechanics	4	60
2	VGE022	Computer Applications - II	4	60
3	VGE034	Environmental Science	4	60
<b>Vocational Education: 18 Credits, 270 Hours</b>				
<b>S. No.</b>	<b>Code</b>	<b>Module Title</b>	<b>Credit</b>	<b>Hours</b>
1	VPD004	Materials for Product Modelling	6	90
2	VPD005	CAD Drawing	6	90
3	VPD006	Physical Model Making I	6	90

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**Programme Structure****Vocational Advanced Diploma****Semester-1**

<b>General Education: 12 Credits, 180 Hours</b>				
<b>S. No.</b>	<b>Code</b>	<b>Module Title</b>	<b>Credit</b>	<b>Hours</b>
1	VGE027	Electronic systems	4	60
2	VGE066	Communication skills -2	4	60
3	VGE064	Elements of Social Science and Ethics	4	60
<b>Vocational Education: 18 Credits, 270 Hours</b>				
<b>S. No.</b>	<b>Code</b>	<b>Module Title</b>	<b>Credit</b>	<b>Hours</b>
1	VPD007	3D Virtual Modelling	6	90
2	VPD008	Digital Product Illustration	6	90
3	VPD009	Physical Model Making II	6	90

**Semester-2**

<b>General Education: 12 Credits, 180 Hours</b>				
<b>S. No.</b>	<b>Code</b>	<b>Module Title</b>	<b>Credit</b>	<b>Hours</b>
1	VGE005	Banking & Taxation	4	60
2	VGE013	Business Communication	4	60
3	VGE049	Materials for Product Development	4	60
<b>Vocational Education: 18 Credits, 270 Hours</b>				
<b>S. No.</b>	<b>Code</b>	<b>Module Title</b>	<b>Credit</b>	<b>Hours</b>
1	VPD010	3D Surface Modelling – I	6	90
2	VPD011	Model Machining Processes	6	90
3	VPD012	Physical Model Detailing and Surface Finishing	6	90

**Vocational Degree****Semester-1**

<b>General Education: 12 Credits, 180 Hours</b>				
<b>S. No.</b>	<b>Code</b>	<b>Module Title</b>	<b>Credit</b>	<b>Hours</b>
1	VGE059	Principles of Management	4	60
2	VGE069	Cost Estimation and Project Management	4	60
3	VGE070	Mechanism for Product Design	4	60
<b>Vocational Education: 18 Credits, 270 Hours</b>				
<b>S. No.</b>	<b>Code</b>	<b>Module Title</b>	<b>Credit</b>	<b>Hours</b>
1	VPD013	Design Essentials	6	90
2	VPD014	3D Surface Modelling – II	6	90
3	VPD015	Group Project -1	6	90

**Semester-2**

<b>General Education: 10 Credits, 150 Hours</b>				
<b>S. No.</b>	<b>Code</b>	<b>Module Title</b>	<b>Credit</b>	<b>Hours</b>
1	VGE047	Labour laws, occupational health and safety	4	60
2	VGE068	Entrepreneurship development	4	60
3	VGE056	Organizational Behaviour	4	60
<b>Vocational Education: 20 Credits, 300 Hours</b>				
<b>S. No.</b>	<b>Code</b>	<b>Module Title</b>	<b>Credit</b>	<b>Hours</b>
1	VPD016	Work Portfolio	6	90
2	VPD017	Reverse Engineering and Rapid Prototyping	6	90
3	VPD018	Group Project-2	6	90

<b>14.</b>	<b>Delivery Structure</b>
	The course is in a semester pattern with an average of 30 hours of interactions per week and 15 weeks per semester
<b>15.</b>	<b>Teaching and Learning Methods</b>
	The module delivery comprises of a combination of few or all of the following: <ol style="list-style-type: none"> <li>1. Face to Face Lectures using Audio-Visuals</li> <li>2. Demonstrations</li> <li>3. Laboratory/Field work/Workshop</li> <li>4. Industry Visit</li> <li>5. Group Exercises</li> <li>6. Project Exhibitions</li> <li>7. Technical Festivals</li> </ol>
<b>16.</b>	<b>Assessment and Grading</b>
	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. Compulsory attend the both the exams ( at least one test and exam )
<b>17.</b>	<b>Failure</b>
	If a student fails in a module, he/she is required to take up the make-up examination.
<b>18.</b>	<b>Attendance</b>
	A student is required to have a minimum attendance of 75% in each of the modules.
<b>19.</b>	<b>Award of Class</b>
	As per the Academic Regulations for Vocational Programme.
<b>20.</b>	<b>Student Support for Learning</b>
	Student are given the following support:



	<ol style="list-style-type: none"> <li>1. Module notes</li> <li>2. Reference books in the library</li> <li>3. Magazines and Journals</li> <li>4. Internet facility</li> <li>5. Computing facility</li> <li>6. Laboratory facility</li> <li>7. Workshop facility</li> <li>8. Staff support</li> <li>9. Lounges for discussions</li> <li>10. Any other support that enhances their learning</li> </ol>
<b>21.</b>	<b>Quality Control Measures</b>
	Following are the Quality Control Measures:
	<ol style="list-style-type: none"> <li>1. Review of module notes</li> <li>2. Review of question papers</li> <li>3. Student feedback</li> <li>4. Moderation of assessed work</li> <li>5. Opportunities for the students to see their assessed work</li> <li>6. Review by external examiners and external examiners reports</li> <li>7. Staff student consultative committee meetings</li> <li>8. Student exit feedback</li> <li>9. Subject Assessment Board</li> <li>10. Programme Assessment Board</li> </ol>

