



Programme Specifications

M. Des. Programme

Programme:
Product Design

Department:
Product Design

Faculty of Art & Design
M.S. Ramaiah University of Applied Sciences

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

www.msruas.ac.in

Programme Specification

Programme: M. Des. in Product Design	
Faculty	Art and Design
Department	Industrial Design
Programme	Product Design
Dean of Faculty	Lohit H S
HOD	Lohit H S

	1. Title of the Award
	M. Des. in Product Design
	2. Modes of study
	Both Full Time and Part Time
	3. Awarding Institution / Body
	M. S. Ramaiah University of Applied Sciences – Bengaluru, India
	4. Joint Award
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	5. Teaching Institution
	Faculty of Art and Design
	M S Ramaiah University of Applied Sciences - Bengaluru, India
	6. Date of Programme Specification
	September 2019
	7. Date of Programme Approval by the Academic Council of MSRUAS
	September 2019
	8. Next Review Date
	August 2019
	9. Programme Approving Regulatory Body and Date of Approval
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	10. Programme Accrediting Body and Date of Accreditation
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	11. Grade Awarded by the Accreditation Body
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	12. Programme Accreditation Validity
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	13. Programme Benchmark
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14. Rationale for the Programme

The consumer product manufacturing sector in India has seen robust growth in recent times and some organizations involved in product research and development are creating avenues in the field of product design for carrying out research on smart machines, composite materials, customer needs and aspirations including consumer emotions and behavior. The skilled work force available in India is recognized globally and many organizations are in need of designers, developers, innovators, manufacturing, testing and marketing professionals as well as managers with a postgraduate degree in Product Design. This programme is aimed at preparing skilled professionals and human resources equipped with creative skills combined with the knowledge and application aspects of the product design process to meet the demands of the product manufacturing industry including regional, national and global organizations.

15. Programme Aim

Master's degree programme of MSRUAS is designed to impart high-order overview of Product Design. Postgraduates are expected to possess: advanced knowledge and understanding of industrial product design; higher order critical, analytical, innovative and problem solving skills; ability to think rigorously and independently; and transferable skills. The postgraduates are expected to find opportunities in industrial product design companies, research establishments and even may take up entrepreneurship. With experience, they should be able to take up leadership positions.

16. Programme Objectives

The programme aims to prepare students for developing their careers in design and development of industrial and consumer products. The programme will impart knowledge and underlying principles of industrial product design and development. The programme will prepare students to evaluate customer needs and demands and suggest product design solutions which meet functional, ergonomic and aesthetic requirements. The students will be trained to use virtual tools to generate product concepts and validate with physical models. The educational experience enables the students to achieve an integrated understanding of product design and development methodology, visualization/ simulation, synthesis, integration, evaluation, presentation and documentation.

The objectives of the programme are to enable the students :

1. To enhance knowledge on processes involved in the design and development of consumer products
2. To instruct on contemplating the context or circumstances of a design problem and to frame them at a level of abstraction in an insightful way
3. To provide tools and techniques to research and analyze the needs of the consumer
4. To impart training on effective use of form to embody ideas and to communicate their value without compromising on functionality and manufacturing considerations
5. To impart training on manual techniques and digital tools to accurately visualize, model, simulate and present multiple alternative solutions to satisfy consumer needs
6. To enhance knowledge on validating design concepts and incorporating improvements obtained via customer feedback
7. To provide a general perspective and opportunities for a career in Industrial Product Design
8. To train the students in teamwork, lifelong learning and continuous improvement

17. Intended Learning Outcomes of the Programme

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

1. Knowledge and Understanding, 2. Cognitive Skills 3. Practical Skills and 4. Capability / Transferable Skills.

1. Knowledge and Understanding

After undergoing this programme, a student will be able to:

- KU1:** Explain underlying principles of product design comprising functionality, ergonomics and aesthetics
- KU2:** Demonstrate knowledge and techniques of converting customer voice into product specification
- KU3:** Paraphrase design problems and demonstrate product design methodologies
- KU4:** Demonstrate knowledge of manufacturability, assembly and serviceability aspects of Industrial Product Design

2. Cognitive Skills

After undergoing this programme, a student will be able to:

- CS1:** Analyze user needs and aspirations through qualitative research

- CS2:** Formulate specification for design and development of products
- CS3:** Conceptualize ideas for improved functionality, ergonomics and aesthetics
- CS4:** Improvise the existing design to meet newer requirements

3. Practical Skills

After undergoing this programme, a student will be able to:

- PS1:** Carryout ethnography survey
- PS2:** Create product doodles and sketches
- PS3:** Use modern digital tools and techniques to create virtual product models and Visualize
- PS4:** Build mock up models/ prototypes of the concept design for evaluation

4. Capability / Transferable Skills

After undergoing this programme, a student will be able to:

- TS1:** Manage information, develop technical reports and make presentations
- TS2:** Build, manage and lead a team to successfully complete a project and communicate across teams and organizations to achieve professional objectives
- TS3:** Work under various constraints to meet project targets
- TS4:** Adopt to the chosen profession by continuously upgrading his/her knowledge and understanding through Life-long Learning philosophy

18. Programme Structure

The Programme consists of four terms as shown below. A student is required to successfully complete the following courses and earn credits for the award of the degree.

Complete details of each of the courses such as ILO's, content, resources, teaching-learning processes and other related information are outlined in Course Specification of the respective programme.

SEMESTER 1

Sl. No	Course Code	Course Designation	Name of the Course	hours (h/W/S)			Credits	Max. Marks
				Theory	Tutorial	Practical		
1	19PRD501A	C1	Elements of Design	2	0	4	4	100
2	19PRD502A	C2	Concept Sketching and Presentation	2	0	4	4	100
3	19PRD503A	C3	Digital Sculpting and Rendering	2	0	4	4	100
4	19PRD504A	C4	Virtual and Physical Product Modelling	2	0	4	4	100
5	19HST501A	CC1	Research Methodology	2	0	0	2	50
6	19SEM501A	SEC1	Skill Enhancement Course	0	0	4	2	50
Total				10	0	20	20	500
Total Number of Contact Hours per Week				30 Hours				
Number of Credits can be registered				Minimum	20	Maximum	20	

SEMESTER 2

Sl. No	Course Code	Course Designation	Name of the Course	hours (h/W/S)			Credits	Max. Marks
				Theory	Tutorial	Practical		
1	19PRD505A	C5	Design Methodology and Research	2	0	4	4	100
2	19PRD506A	C6	Creativity and Systematic Innovation	2	0	4	4	100
3	19PRD507A	C7	Ergonomics in Product Design	2	0	4	4	100
4	19PRD5XXA	EX1	<i>Refer Elective Course Table</i>	2	0	4	4	100
5	19PRD5XXA	EX2	<i>Refer Elective Course Table</i>	2	0	4	4	100
Total				10	0	20	20	500
Total Number of Contact Hours per Week				30 Hours				
Number of Credits can be registered				Minimum	20	Maximum	20	

SEMESTER 3

Sl. No.	Course Code	Course Designation	Name of the Course	Theory (h/W/S)	Tutorials (h/W/S)	Practical (h/W/S)	Total Credits	Max. Marks
1	19PRD595A	INT	Internship/ Mini Project	-	-	8	4	100
2	19PRD599A	GP	Group project	-	-	20	10	200
3	19PRD5XXA	EX3	<i>Refer Elective Course Table</i>	0	0	8	4	100
4	19SEM502A	SEC2	Skill Enhancement Course	0	0	4	2	50
Total						40	20	450
Total number of contact hours per week				40 hours				
Number of credits can be registered				Minimum	20	Maximum		20

SEMESTER 4

Sl. No.	Course Code	Course Designation	Name of the Course	Theory (h/W/S)	Tutorials (h/W/S)	Practical (h/W/S)	Total Credits	Max. Marks
1	19PRD600A	DP	Dissertation and Publication	-	-	40	20	400
Total						40	20	400
Total number of contact hours per week				40 hours				
Number of credits can be registered				Minimum	20	Maximum		20

Elective Courses List			
Stream / Specialization	S. No.	Course Code	Course Title
Stream -1 (Advanced Product Design and Development)	E11	19PRD511A	Mechanisms and Modeling for Design
	E12	19PRD521A	Design for Manufacturing and Assembly
	E13	19PRD531A	Portfolio Design and Presentation
Stream-2 (Interactive Product Design)	E21	19PRD512A	Interactive Design and Technology
	E22	19PRD522A	User Experience Design
	E23	19PRD531A	Portfolio Design and Presentation

Skill Enhancement Course:

Students will be awarded 2 credits on completion of either one of the following, in a given semester:

- Participation in Art and Design exhibitions and shows
- Participation in National & international design competition
- Field/ Industrial visit
- MOOC Course

19. Programme Delivery Structure

A Programme is delivered in accordance with the time table provided at the beginning of the semester for every batch.

20. Teaching and Learning Methods

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

1. Face to Face Lectures using Audio-Visuals
2. Workshops, Group Discussions, Debates, Presentations
3. Demonstrations
4. Guest Lectures
5. Laboratory/Field work/Workshop
6. Industry Visit
7. Seminars
8. Group Exercises
9. Project Exhibitions
10. Technical Festivals

21. Courses

Programme has seven core courses (C1- C7), one compulsory courses (CM1), three elective courses (Ex1 – Ex3), two skill enhancement courses (SEC 1-2) followed by Group Project (GP), Internship(INT) and Dissertation & Publication (DP) courses.

Core Courses (C1- C7) are Programme Specialization courses which normally include both theory and laboratory sessions. Alternate activities are planned in case of laboratory sessions do not exist in a course.

Compulsory Courses (CC1) are the Ability Enhancement Courses which are mandatory.

22. Electives

There are 3 electives (Ex1 – Ex3) in the programme. The electives are grouped such a way that a student can choose a set of electives to specialize in a chosen field/stream. However, if the student wishes to opt for elective course that spans multiple streams, the case may be considered subject to the affordability of academic logistics and approval by the course leader, HODs and Deans.

For every elective offered, there will be a minimum and a maximum number of registrations that is decided by the department.

There is also a provision for the students to choose SEC1 and SEC2 through on-line mode such as MOOC's, SWAYAM, NPTEL and other equivalent platforms. The guidelines prescribed by the University for such courses to be adhered to.

23. Group Project

The main objective of group project is to provide an ambiance to work in groups towards achieving a common goal. A group shall have up to 5 students. In case of Group Project work is based on interdisciplinary in nature, team can be constituted with members from across departments of the Faculty.

The students are required to develop a report for assessment and also need to demonstrate the working of the product. The IPR rights of all such work lies with the University only. The project should be approved by a committee constituted by respective HoDs before the start of the project. For further details related to the Group Project refer to Course Specification of the respective programmes

24. Industry Internship/Other Activities

A student can opt for an internship in an industry, a business or research organization during the course.

Alternately, can undertake a mini-project requiring self-directed study that can be perused within the affiliated Faculty.

Prior approval of the internship / mini-project by the HoD and Dean is mandatory. It is also necessary for the student to submit a report and make a presentation to the members of the panel constituted by the HoD for assessment.

For further details related to this course, please refer to Course Specification of the respective programmes.

25. Dissertation and Publication

This course has two parts – Dissertation and Publication.

Every student, has to undertake the dissertation work individually on a chosen relevant topic. The topic needs to be approved by the committee constituted by HoD.

Publication is a stage wherein dissertation work of the student is converted into a technical paper to be published in reputed conferences/journals.

For further details related to this course refer to Course Specifications of the respective programmes

26. Course Assessment

Every course normally has two components for evaluation - Continuous Evaluation (CE) and Semester End Examination (SEE) comprising both theory and laboratory parts.

For complete assessment details of various categories of courses are as follows,

Type of Course		PBC	TBC	PC	SEC	MC
Components						
Component - 1 (CE – Continuous Evaluation)	1	Creative Work Submission – 50 %	Assignment – 50 %	Creative Work Submission – 50 %	NA	Presentation - 50%
Component - 2 (SEE – Semester End Examination)	2A	Written Exam – 25 %	Written Exam – 50 %	Presentation - 100%	Presentation - 100%	Report Submission – 50 %
	2B	Practical / Creative Work Submission – 25 %				

PBC – Process Based Course (Course which have both Theory and Practical Components)

TBC – Theory Based Course (Course which have only Theory Component)

PC - Practical Based Course (Course which have only Practical Component)

SEC – Skill Enhancement Course (Course which have only Practical Component)

MC – Mentorship Course (Course which have only Practical Component)

The Assessment Method will be chosen by the Course Leader as per the following,

Sl .No.	Assessment Type	Assessment method
1	Creative Work Submission	Art work/ Physical Product/ Virtual Model and Renders/ Photographs / Video/ Folios/ Displays
2	Assignment	Word Processed Document/ Course Specific Presentations / Group Discussion / Combined
3	Theory Exam	Written – MCQ/ Short Essay / Course specific presentations / Combined
4	Practical Exam	2 / 3 Hrs Demonstration with Viva

27. Failure in Course and Makeup Examinations

Makeup Examinations are provided for the students who are not able to meet all pass criteria prescribed for a course during the regular term and fail in the course.

For further details related to makeup examination, please refer to M. Des. Programme Academic Regulations document.

28. Attendance

Please refer to M. Des. Programme Academic Regulations document for attendance requirements and condonation related details.

29. Award of Grades

As per the M. Des. Programme Academic Regulations document.

30. Student Support for Learning

Students are provided with various facilities to support learning such as the following:

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

31. Quality Control Measures

Following are the Quality Control Measures:

1. Student Feedback Analysis
2. Opportunities for the students to see their assessed CE work
3. Staff Student Consultative Committee meetings
4. Student exit feedback analysis
5. Subject Assessment Board (SAB)
6. Programme Assessment Board (PAB)

32. Curriculum Map

Course Code	Intended Learning Outcomes											
	Knowledge and Understanding				Cognitive (Thinking) Skills (Critical, Analytical, Problem Solving, Innovation)				Practical Skills			
	KU1	KU2	KU3	KU4	CS1	CS2	CS3	CS4	PS1	PS2	PS3	PS4
19PRD501A	X											X
19PRD502A	X					X				X	X	
19PRD503A	X										X	
19PRD504A	X		X	X		X	X			X	X	X
19HST501A		X	X		X				X		X	X
19PRD505A		X	X		X	X			X			
19PRD506A			X		X			X			X	
19PRD507A	X						X	X			X	X
19PRD599A	X	X	X	X	X	X	X	X	X	X	X	X
19PRD595A					X	X	X	X	X	X	X	X
19PRD600A	X	X	X	X	X	X	X	X	X	X	X	X
19PRD511A	X						X	X			X	
19PRD521A			X	X				X			X	X
19PRD531A	X						X				X	
19PRD512A	X				X		X	X			X	
19PRD522A	X				X		X	X		X	X	X
19SEM501A			X	X							X	X
19SEM502A			X	X							X	X

33. Capability / Transferable Skills Map

Course Code	Group work	Self-learning	Research Skills	Written Communication Skills	Verbal Communication Skills	Presentation Skills	Behavioral Skills	Information Management	Personal management/ Leadership Skills
19PRD501A	X	X		X	X	X	X	X	
19PRD502A	X	X		X	X	X	X	X	
19PRD503A	X	X		X	X	X	X	X	
19PRD504A	X	X	X	X	X	X	X	X	X
19HST501A	X	X	X	X	X	X	X	X	
19PRD505A	X	X		X	X	X	X	X	
19PRD506A	X	X		X	X	X	X	X	
19PRD507A	X	X		X	X	X	X	X	
19PRD599A	X	X	X	X	X	X	X	X	X
19PRD595A		X	X	X	X	X	X	X	X
19PRD600A		X	X	X	X	X	X	X	X
19PRD511A	X	X		X	X	X	X	X	
19PRD521A	X	X		X	X	X	X	X	
19PRD531A		X		X	X	X		X	X
19PRD512A	X	X		X	X	X		X	
19PRD522A	X	X		X	X	X		X	
19SEM501A		X		X	X	X	X	X	X
19SEM502A		X		X	X	X	X	X	X

34. Co-curricular Activities

Students are encouraged to take part in co-curricular activities like seminars, conferences, symposium, paper writing, attending industry exhibitions, project competitions and related activities to enhance their knowledge and network.

35. Cultural and Literary Activities

To remind and ignite the creative endeavors, annual cultural festivals are held and the students are made to plan and organize the activities.

36. Sports and Athletics

Students are encouraged to develop a habit of taking part in outdoor and indoor games on regular basis.

