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| **Name of Department** | **Department of Biotechnology** |
| **Module Name** | **Medical Device Innovation** |
| **Module Coordinators** | 1)Prof. Vishal Kumar Ranjan2) Dr. Sunita Sharma |
| **Module Objective**  | The Internship will help in understanding the importance of the 460 billion $ market of medical device globally. The objective of this online internship is to give the basic idea about designing and development of Medical device. |
| **Module Content**  | Definition and classification of medical devices, Case studies from successful medical device startups. Medical device: needs finding and need statement development; Stake holder analysis, Preliminary market analysis and disease state understanding; Needs filtering, Need validation through market analysis and disease state analysis. Intellectual property fundamentals and patenting procedures, Regulatory fundamentals. Concept generation, concept selection and concept development, Design control and documentation, Prototyping, Business plan development. |
| **Module Methodology**  | The workshop will start with various aspects of Medical device development phase such as finding need for device, Needs filtering, Need validation, , concept selection and concept development, documentation, Business plan development and final Prototyping designing. |
| **Module Outcome/ Impact**  | * Able to design and develop a new medical device.
* Able to patent a new medical device.
* Able to incubate a biomedical start-up company.
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| **Duration**  | 3 Weeks (17 days) |

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| **Day Wise Schedule** |
|  | **Date** | **Day** | **Module Contents to be covered/Interactive Session/Assignment/Quiz/Exercises/Daily practice sheets (DPP)/Tutorial/Project etc.(10:00 AM onward, 3Hrs/ Day)** | **Faculty** |
| **Week 1**  | **14/05/2021** | Mon | Definition and classification of medical devices | Dr. Sunita Sharma |
| **15/05/2021** | Tue | Introduction to new medical device development | Dr. Sunita Sharma |
| **16/05/2021** | Wed | Case studies from successful medical device startups.  | Dr. Sunita Sharma |
| **16/05/2021** | Wed | Strategic focus | Dr. Sunita Sharma |
| **Week 2** | **17/05/2021** | Mon | Medical device: needs finding and need statement development;  | Prof. Vishal Kumar R |
| **18/05/2021** | Tue | Stake holder analysis, Preliminary market analysis and disease state understanding;  | Prof. Vishal Kumar R |
| **19/05/2021** | Wed | Needs filtering | Prof. Vishal Kumar R |
| **20/05/2021** | Thu | Need validation through market analysis and disease state analysis | Prof. Vishal Kumar R |
| **21/05/2021** | Fri | IP fundamentals. patenting procedures | Prof. Vishal Kumar R |
| **22/05/2021** | Sat | Regulatory fundamentals, Regulatory strategy for new product, Provisional patent filing. | Prof. Vishal Kumar R |
| **Week 3** | **24/05/2021** | Mon | Concept generation | Prof. Vishal Kumar R |
| **25/05/2021** | Tue | Concept selection | Prof. Vishal Kumar R |
| **26/05/2021** | Wed | Concept Development | Prof. Vishal Kumar R |
| **27/05/2021** | Thu | R&D strategy. Medical device reliability and quality assurance | Prof. Vishal Kumar R |
| **28/05/2021** | Fri | Design control and documentation | Prof. Vishal Kumar R |
| **29/05/2021** | Sat | Prototyping, Business plan development | Prof. Vishal Kumar R |
| **30/05/2021** | Sun | Concluding Remarks by all Faculties | All faculty |
| **Module Coordinators Email Id and Mobile No.** | 1)Prof. Vishal Kumar Ranjan; 7010934981; vishalbiotechnology2007@gmail.com2) Dr. Sunita Sharma; 98263555314; sunitasharma75@mitsgwalior.in |

**Eligibility and Important Instructions:-**

1. The Online Finishing School Program (Online training/Internship) is designed only for Pre-final Year students.

2. The students may apply online.

3. The Online Finishing School Program/ Summer Internship Program is free for the participants of Pre-final year students of MITS, Gwalior.

4. This online module will be conducted under the Finishing School Program which will be considered equivalent to Online Internship of Pre-final year students who could not get any Internship during this situation.

5. Duration of this program will be of four weeks which is equivalent to summer Internship period as per AICTE and our Institute policy. Daily no. of hours of online training may be flexible.

6. Certificates will be issued to candidates who have attendance 75% or more and also score more than 60% in the test.