Program Overview

Bootcamp #1 — Bootcamp #2 — Bootcamp #3 — Bootcamp #4

BIOMEDIN 701 a,b,c : Project Course (12 units)

Project Supervision, Advisement & Mentorship

BIOMEDIN 704- New Value Creation (1.5 units)	BIOMEDIN 709- Business Model Development (1.5 units)
BIOMEDIN 705- From Market Assessment to Value Proposition (1.5 units)	BIOMEDIN 707- Prototyping & Technology Readiness Assessment (1.5 units)

BIOMEDIN 706- Intellectual Property (1.5 units) / BIOMEDIN 708- Regulation & Reimbursement (1.5 units) / Elective 713: Artificial Intelligence in Healthcare (1.5 units) / Elective 712: Navigating Complexity in Healthcare (1.5 units)

BIOMEDIN 711- Business Basics (1.5 units) / BIOMEDIN 710- Funding & Venture Creation (1.5 units) / Elective 714: Preparing for Due Diligence (1.5 units) / SPARE Final Pitch Preparation

Professional Development

Milestone Assessment — Milestone Assessment — Milestone Assessment

Sept. — Jan. — May — Aug.
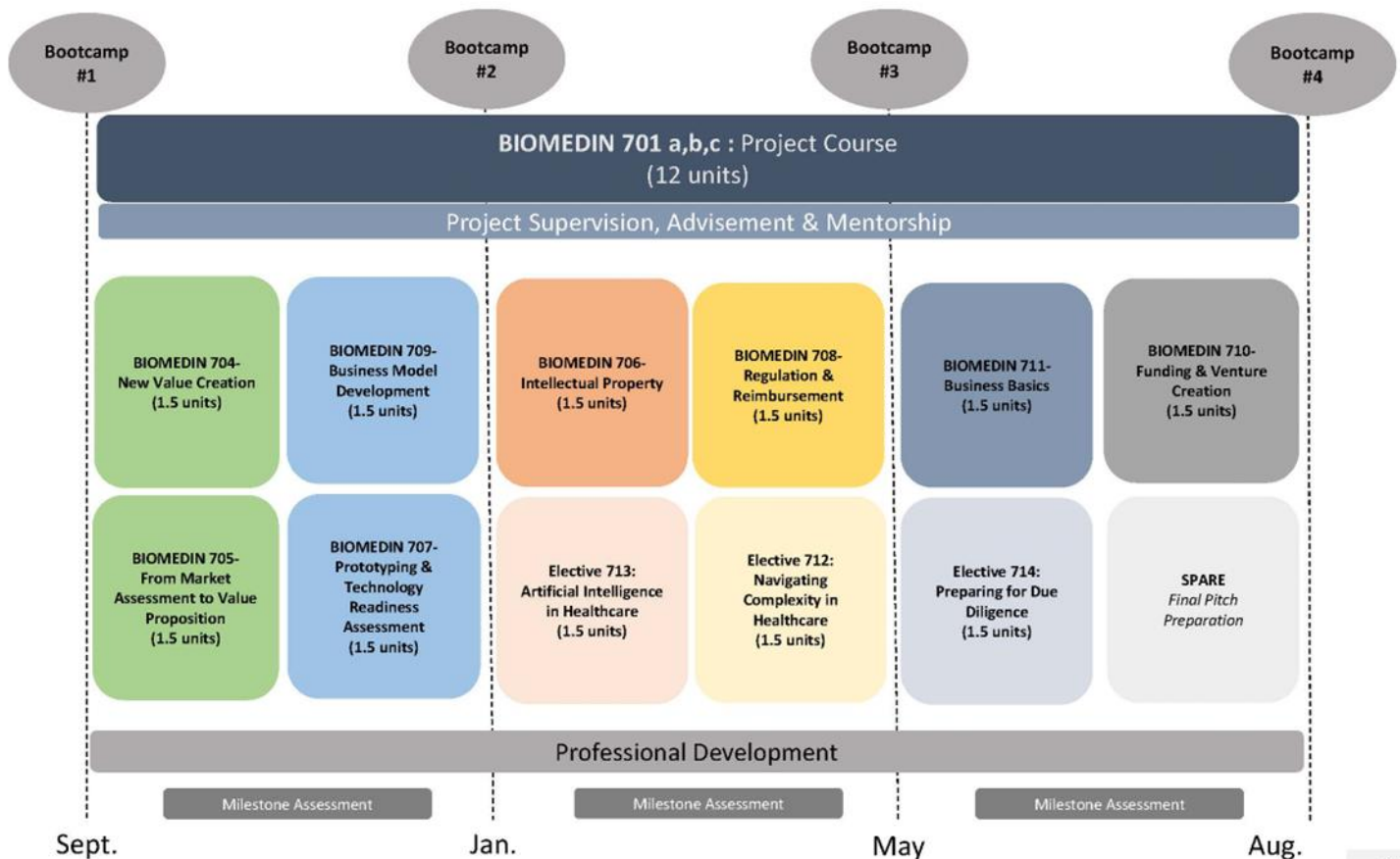
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Multi-Term: Project Course [BIOMEDIN 701a,b,c]

The program has been designed to take students through the process of clinical needs finding, creating a novel biomedical solution, to the formation of an early-stage biomedical venture. This multi-term project course will take students through the following phases:

BIOMEDIN 701a – From Needs Assessment to Business Models [Term 1]
BIOMEDIN 701b – Patenting, Prototyping & Regulation [Term 2]
BIOMEDIN 701c – Funding and Building a Business [Term 3]

During the first bootcamp, MBI students will participate in a clinical immersive experience where they will have the opportunity to observe and identify unmet needs, challenges and/or opportunities that exist within a healthcare environment.

Through systematic data collection, analysis and synthesized validation, students will refine their list of unmet needs until a project idea emerges. In small groups, students will work through the stages of their biomedical innovation project.

Groups will have access to mentors and advisors who will help guide students on establishing the desirability, feasibility, and viability of their innovative solution.

Term 1: From Needs-Assessment to Business Models

BIOMEDIN 704: New Value Creation

This course is designed to allow learners to identify unmet needs, identify potential root causes of observed problem(s), and validate them. Students will also learn how the healthcare system functions so that they can identify important stakeholders in the healthcare space. They will practice ideation methods to develop the framework for potential solutions that address unmet needs within the confines of complex healthcare systems.

BIOMEDIN 705: From Market Assessment to Value Proposition

In this course, students will learn to assess whether there are available alternatives already on the market that solve the identified problem and estimate market size, including dollar size and number of users. They will identify potential barriers to market entry and strategies to overcome them. They will validate the product-market fit for the proposed problem solution (innovation), identify risks and risk mitigation strategies in alignment with industry standards, and learn how to articulate a competitive advantage for their proposed solution.

BIOMEDIN 709: Business Model Development

This course explores the key components necessary for success in the biomedical industry. Through a combination of theoretical knowledge and practical application, students will learn to identify and analyse the critical elements of a business model specific to biomedical innovations. They will learn how to evaluate and determine the most appropriate business model for viability and revenue generation that aligns a biomedical innovation with a target market, maximizes value creation and ensures long-term sustainability.

BIOMEDIN 707: Prototyping and Technology Readiness Assessment

This course will guide students through topics such as design thinking, proof of concept, and rapid prototyping alongside health professionals and users in both simulated and operational environments. Students will gain the knowledge and skills required to prototype various health innovations including digital health, therapeutics, diagnostics, and medical devices. The students will also learn how to integrate design factors into their prototypes and successfully test new prototype iterations in real-world environments to prepare for full-scale implementation.

Term 2: Patenting, Prototyping & Regulation

BIOMEDIN 706: Intellectual Property

This course will cover how to conduct patent searches and how intellectual property (IP) can be protected in a variety of innovation domains, including medical device, therapeutics and diagnostics, and digital health. Students will learn how to maintain confidentiality in external-facing communications and how to develop and execute an IP strategy.

BIOMEDIN 708: Regulation & Reimbursement

This course explores the regulation and reimbursement landscape in biomedical innovation. Students will gain an understanding of the regulatory frameworks governing the development and approval of medical products, including drugs, devices, and diagnostics. Practical skills will be developed in ensuring compliance with regulatory requirements and ethical considerations. Students will learn to navigate the complex reimbursement systems, analyze reimbursement models, and evaluate the implications for biomedical innovations.

Term 3: Funding & Building a Business

BIOMEDIN 710: Funding and Venture Creation

This course explores funding and venture creation for new startups. Students will gain an understanding of various funding sources available to startups, including venture capital, angel investors, crowdfunding, and government grants. They will learn to develop an effective funding strategy and navigate the negotiation process when securing funding. Students will also gain insight into how biomedical ventures are established, nurtured, and scaled. How raised funds are used for growth of the new venture, how people are hired and retained, and what is needed to ensure the stability of a new venture.

BIOMEDIN 711: Business Basics

This course provides an introduction to the essentials of running and managing a startup company. Students will develop skills in strategic planning, and business development to drive growth and market success. Students will evaluate tools for financial planning, budgeting, and forecasting to make informed business decisions. This course will also focus on effective leadership and team management, including managing conflicts and challenges, building company culture, as well as human resources management.

Elective Options

Artificial Intelligence in Healthcare: Foundations & Applications

This elective course will provide students with a foundational knowledge of a number of AI topics in healthcare, including the basics of AI, Machine Learning, Deep Learning, Convolutional Neural Networks, AI applications in medical imaging (classification, detection and segmentation) incorporating methods from natural language processing and the use of AI in new drug discovery.

Navigating Complexity: Implementing Innovation in Healthcare

This elective course introduces entrepreneurship learners to complexity theory through a healthcare lens. Successful innovation is not just about creating a ground-breaking technology. Up to 90% of innovations in healthcare ultimately fail due to improper implementation and change management strategies. This course helps learners gain a deeper appreciation of how to bring a new technology into a healthcare setting successfully, using case studies, projects, and discussions that illustrate common leadership, innovation and management challenges and how to overcome them.

Preparing for Due Diligence

This elective course is designed to equip innovators with comprehensive knowledge of the due diligence process, a crucial step towards securing strategic partnerships. Often, innovator companies miss the chance for strategic alliances due to unfamiliarity with due diligence and insufficient preparation. By the end of this course, participants will be well-versed in all facets of due diligence, ensuring they are thoroughly prepared to engage effectively in the process and successfully secure strategic partnerships.