# Amrita Vishwa Vidyapeetham
# Live-in-Labs® II (15LIV490)
# B.Tech. Semester VI Course Syllabus

**Pre Requisite(s):**

1. Students can enrol for Live-in-Labs® II course only if they have successfully completed Live-in-Labs® I course by meeting all the criteria set by the Live-in-Labs® team.

**Course Objectives**

1. Understand the principles of
   a. Advanced Human Centered Design
   b. Co-Design
   c. Social Change Management Models
   d. Project Management
   e. Prototyping
   f. Modelling
   g. Field Implementation.
   h. Sustainable Development
2. Learn the various tools, techniques and templates used in the mentioned concepts to implement a sustainable intervention in the villages.
3. Creating awareness and training the villagers.

**Course Outcome**

On the successful completion of the Course, the student will be able to –

**CO1:** Learn sustainable development and co-design methodologies, engage in a participatory manner to finalise a solution

**CO2:** Understand sustainable social change models and identify change agents in a community

**CO3:** Learn Project Management to effectively manage the resources

**CO4**: Lab scale implementation and validation

**CO5:** Prototype implementation of the solution

**CO-PO Mapping**

| PO/PSO / CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 1 | 1 | 3 | 3 | | | 1 | 3 | 3 | 3 | | 3 |
| CO2 | | | | | | | | | 3 | 3 | | |
| CO3 | | | | | | | | | 3 | 3 | 3 | |
| CO4 | 3 | | 3 | | | 3 | 1 | 3 | 3 | 3 | | 3 |
| CO5 | | | 1 | | | | | | 3 | 3 | | |

1 – Substantial; 2 – Moderate; 3 - Strong

**Syllabus**

**Unit 1**
**Sustainable Development II**
Sufficiency, Income and Labor, Consumption and Lifestyles. Poverty and Inequality. Governance, Education and Science System. Climate Change. Biodiversity.

**Unit 2**
**Co-design**

Introduction to co-design. Benefits of co-design. Co-design process. Co-design tools.

**Unit 3**

**Project Management**

Introduction to Project Management. Project Triple Contraints. Difference between project and operation. Phases of Project Management. Project Planning.

**Unit 4**

**Human Centered Design II (HCD)**

Design Process. Design evaluation. Design implementation.

**Text Book(s)**

*There are no required textbooks for this course; all articles, reports and research papers assigned as required reading will be shared with the students by Live-in-Labs® faculties.*

**Reference(s)**


1. *Ramesh, Maneesha Vinodini, Renjith Mohan, and Soumya Menon. "Live-in-Labs: Rapid translational research and implementation-based program for rural development in India." In 2016 IEEE Global Humanitarian Technology Conference (GHTC), pp. 164-171. IEEE, 2016.*
2. *Sipos, Yona, Bryce Battisti, and Kurt Grimm. "Achieving transformative sustainability learning: engaging head, hands and heart." International Journal of Sustainability in Higher Education 9, no. 1 (2008): 68-86.*
3. *Moldan, Bedřich, Svatava Janoušková, and Tomáš Hák. "How to understand and measure environmental sustainability: Indicators and targets." Ecological Indicators 17 (2012): 4-13.*
4. *Lee, Yanki. "Design participation tactics: the challenges and new roles for designers in the co-design process." Co-design 4, no. 1 (2008): 31-50.*
5. *Mohan, Harish T., Krishna Nandanan, Renjith Mohan, Olamide Sadipe, Iona Williams, and Teja Potocnik. "Case Study on Co-Design Methodology for Improved Cook Stove Solutions for Rural Community in India." In 2019 IEEE R10 Humanitarian Technology Conference (R10-HTC)(47129), pp. 153-158. IEEE, 2019.*
6. *Liam J. Bannon, Pelle Ehn. 06 Aug 2012, Design from: Routledge International Handbook of Participatory Design Routledge*
7. *Sustainable Development Strategies: A Resource Book. Organization for Economic Co-operation and Development, Paris and United Nations Development Program, New York.*
8. *A Guide to the Project Management Body of Knowledge (PMBOK® Guide), Project Management Institute*
9. *Field Guide to Human-Centered Design. By IDEO.org. 1st Edition © 2015. ISBN: 978-0-9914063-1-9*


**Evaluation Pattern**

| **Assessment** | **Marks** |
|---|---|
| 1. Proposed Implementation Presentation Round 1 | **2** |
| 2. Proposal Submission + Review | **6** |
| 3. Co-design | **6** |
| i. Village Visit I (Co-Design Field Work Assignments) | 4 |
| ii. Presentation of Co-design Assessment | 2 |
| 4. Prototype Design | **14** |
| i. Prototype Design | 4 |
| ii. Prototype Submission | 8 |
| iii. Sustenance Plan | 2 |
| 5. Implementation | **35** |
| i. Implementation Plan Review | 3 |
| ii. Implementation | 24 |
| iii. Testing & Evaluation | 4 |

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|---|---|
| iv. Sustenance Model Implementation | 4 |
| 6. Research Paper | **18** |
| 7. Final Report | **15** |
| 8. Poster Presentation | **4** |
| **Total** | **100** |
| Attendance | 5 |
| **Grand Total** | **105** |