ವಿಶ್ವೇಶ್ವರಯ್ಯ ತಾಂತ್ರಿಕ ವಿಶ್ವವಿದ್ಯಾಲಯ
ವಿಟಿಯು ಅಧಿನಿಯಮ ೧೯೯೪ರ ಅಡಿಯಲ್ಲಿ ಕರ್ನಾಟಕ ಸರ್ಕಾರದಿಂದ ಸ್ಥಾಪಿತವಾದ ರಾಜ್ಯವಿಶ್ವವಿದ್ಯಾಲಯ
VISVESVARAYA TECHNOLOGICAL UNIVERSITY
State University of Government of Karnataka Established as per the VTU Act, 1994"JnanaSangama" Belagavi-590018, Karnataka, India

Prof. B. E. Rangaswamy, Ph.D
REGISTRAR

Phone: (0831) 2498100
Fax: (0831) 2405467

REF: VTU/BGM/Online courses/826/2025-26/3326 DATE: 30 SEP 2025

CIRCULAR

Subject: 1BIDTL258/158- Innovation and Design Thinking Project Based Learning Activity Book – reg."

Reference: The Chairperson's approval vide email dated: 26.09.2025

It is hereby informed that the Activity Book on "Innovation & Design Thinking Using Atal Idea Lab / Tinkering Lab / Makerspace (Project-Based Learning)" is to be implemented for Semester–1 student from the Academic Year 2025–26 onwards. The prescribed format of the Activity Book is annexed herewith. Students shall record their activities, reflections, and outcomes week-wise in the given format. Wherever necessary, extra sheets/pages may be added to accommodate complete details, sketches, photos, or supporting documents.

Faculty members/mentors are requested to guide the students in completing the activity book and provide their observations, remarks, and signatures at the designated places. The completed activity books shall form part of the student's continuous assessment and final evaluation. Institutions may design the cover page with the College Name and Logo along with the VTU Logo as per the format.

All the principals of engineering colleges under the ambit of university are hereby informed to update the content of the circular to the notice of all concerned.

Encl: Activity Book format and Syllabus

Yours faithfully,

30/09/25
REGISTRAR

To:

The Principals of all Engineering Colleges under the ambit of the university
The Chairpersons/Programme Coordinators of University Departments at Kalaburagi, Bengaluru, Mysuru, and Belagavi.

Copy to:

- The Hon'ble Vice-Chancellor, through the Secretary to the Vice-Chancellor, for kind information.
- The Dean, Faculty of Engineering, VTU Belagavi, for information.
- The Registrar (Evaluation) for information and needful
- The Director ITI, SMU, VTU Belagavi, for information and needful, and also make arrangements to upload the circular on the VTU web portal.
- The Special Officer, CoE, Mysuru, for information and needful
- The Special Officer QPDS, Examination Section, VTU Belagavi
- Office file

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI

"Jnana Sangama" Macche Belagavi - 590018

Activity Book

Innovation & Design Thinking Using Atal Idea Lab / Tinkering Lab / Makerspace

(Activity-Based Learning)

Institute Name -

Academic Year: 2025-26 **Semester: 1**

Student Name: **Roll No :**

Branch: **USN:**

Team Name and Strength:

Mentor / Faculty Member Name:

Table of Contents

Sl. No.	CIE Component/Week	Max Marks	Description	CIE Marks Obtained	Sign
1	Orientation Activities & Communication Skills	5	Participation in Week 1–3 orientation, communication and teamwork skill-building exercises.		
2	Empathy & Field Exploration Documentation	10	Quality and completeness of field visit reflections, stakeholder interviews, and activity book.		
3	Problem Definition and Framing	10	Clarity of challenge statements, use of "How Might We", Affinity Mapping, Problem Trees.		
4	Ideation & Mind Mapping	10	Participation in brainstorming, mind mapping, idea filtering sessions.		
5	Prototype Development & Iteration	10	Quality and creativity of prototype/model, user testing, feedback collection, iterations.		
6	Teamwork, Journal, and Engagement	5	Peer and mentor evaluation of participation, teamwork, journal updates.		
7	**Total CIE marks**	50	Final CIE marks to be considered		

1. **Write about Innovation and Design Thinking**

2. **Brief about Different steps of Innovation and Desing Thinking**

- **Empathize –**

- **Define –**

- **Ideate-**

- **Prototype-**

- **Testing and Validation -**

Week 1–3: Orientation & Team Formation (additional sheets may be attached, if required)

- **Activity Title**:
- **Objective**:
- **Tasks Done**:
- **Skills Developed**:
- **Output / Reflections**:
- **Faculty Signature with remarks**

Week 4–5: Empathy & Field Exploration

- **Field Visit Location**: **Date of Visit**:
- **Stakeholders Met (Mention the names of Min10 Stake holders)**:

- **Interview Questions Asked**:

- **Key Observations**:

- **Photos / Sketches**: *(Paste or attach)*
- **Challenges Noted**:

- **Faculty Feedback & Signature**:

Week 6–8: Problem Definition

- **List of Problems Identified**:

- **Empathy Map / Problem Tree Analysis or Drawing**:

- **Defined Problem Statement**:

- **User Pain Points Identified w.r.t. Defined Problem Statement**:

- **Faculty Feedback & Signature**:

Week 9–11: Ideation Sprint

- **Techniques/Platforms Used**: Brainstorming Sessions/ Group Discussions/Mentoring/Mind Mapping
- **Ideas Generated** (List 10 or more)

- **Idea Selected for Prototyping**: Name of the project/Idea

- **Justification for Selection**:

- **Initial Design Sketch**: Brief about Initial Design *(Attach the sketch)*

- **Faculty Feedback & Signature**:

Week 12–14: Prototyping

- **Materials Used**: Arduino / Sensors/3D Printing/Digital Tool/Re-cyclable/Card Sheets
- **Prototype Description**:

- **Photos of Model (attach separately)**:
- **User Testing Report**:

- **Feedback Received** (List out the important/crucial points):

- **Revisions Made**:

- **Faculty Feedback & Signature**:

Week 15–16: Final Demo & Pitch

- **Project/Idea Title**:
- **Team Members**:

- **Targeted Problem**:
- **Final Report of the Project**: Attach Separately
- **Pitch Summary**: **Poster/PPT**: Attach Separately

- **Jury Comments**:

- **Marks (out of 50)**:

- **Faculty Signature**:

Final Reflection & Self-Assessment (Student shall answer the following questions prior to final viva-voce or presentation)

- What did I learn from this course?

- Skills I gained:

- Challenges I faced and overcame:

- What would I do differently next time?

- Faculty Suggestions:

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI

"Jnana Sangama" Macche Belagavi - 590018

Innovation & Design Thinking Lab		Semester	1
Course Code:	**1BIDTL158**	**CIE Marks**	**50**
Teaching Hours/Week (L:T:P: S)	**0:0:2**	**SEE Marks**	**50**
Total Hours of Pedagogy	**2**	**Total Marks**	**100**
Credits	**1**	**Exam Hours**	
Examination type (SEE)	**Practical/Presentation/Seminar**		

Course Outcome (Course Skill Set) -

At the end of the course, the student will be able to:

1. Empathize with community problems and define meaningful challenges.
2. Apply design thinking principles and multidisciplinary skills to develop user-centric solutions.
3. Build and test basic prototypes using tools available in the Atal Idea/Tinkering Lab or Makers Space.
4. Pitch socially relevant ideas with scalable models.
5. Collaborate effectively in diverse teams.

Week 1, 2 & 3: Orientation and Team Formation

Week -1&2: Introduction to Social Entrepreneurship**,** Innovation and Design Thinking

Group discussion on What is **Innovation** vs **Invention**. Why **Design Thinking** is important. Brief about **5 stages**: Empathize – Define – Ideate – Prototype – Test.

Week -3: Innovation warm-up activities, forming interdisciplinary teams, Instructions about Next week activities

Week 4–5: Empathy and Field Exploration

Week-4&5: Field (any public places of student's interest Eg- Village, Government Office, Industry. R&D institute, NGO etc) visits, stakeholder interviews and interaction. Recording all interaction through handwritten in activity book prescribed by the University.

Week 6, 7 and 8: Problem Definition

Week-6: Documentation, categorization and Group discussion on interactions and problems/challenges.

Week-7&8: Problem framing using "How Might We" approach, Identification of social problems and user insights through affinity Clustering and Problem Tree. Mention of clearly defined challenge statements.

Week 9, 10 &11: Ideation Sprint

Week-9&10: Presentation by teams on Defined Problems, Brainstorming interactions and Mind Mapping.

Week-10: Idea Filtering - Shortlist of creative, eco -friendly and feasible ideas. Selection of one Suitable IDEA for next process, Designing/Structuring of Prototype model.

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Week 12, 13 &14: Rapid Prototyping using Atal Idea Lab/Makers Space
Week-12&13: Building low-fidelity and working models using tools like Arduino, 3D printers,: Digital fabrication, electronics kits and recycled materials **Week-14:** User testing, Feedback collection, Iteration - Observation Notes, Feedback Forms (Designing a business model for impact and scalability, if possible) Preparation of Draft of social venture plan
Week 15 &16: Final Demo and Social Pitch
Innovation showcase, Poster display, Project pitching to jury ***Presentation of the project with impact with assessment, prototype, and sustainability plan***
Teaching-Learning Process (Innovative Delivery Methods) **1.Activity Based Learning** **2.Group discussion, Presentations.** **3. one faculty member shall be assigned to group of 60 students or one division.** **4. Each group shall contain Min. 4 and Max. 6 students.** **5. Nature of the group shall be multidisciplinary. (Group shall be formed by selecting students from all branches)**

Assessment Structure:

The assessment in each course is divided equally between Continuous Internal Evaluation (CIE) and the Semester End Examination (SEE), with each carrying 50% weightage.

- To qualify and become eligible to appear for SEE, in the **CIE**, a student must score at least **40% of 50 marks**, i.e., **20 marks**.
- To pass the **SEE**, a student must score at least **35% of 50 marks**, i.e., **18 marks**.

Notwithstanding the above, a student is considered to have **passed the course,** provided the combined total of **CIE and SEE is at least 40 out of 100 marks**.

Continuous Internal Evaluation (CIE) –

CIE Marks allocation Parameters for Social Entrepreneurship, Innovation & Design Thinking using Atal Idea/Tinkering Lab or Maker Space

CIE Parameters (50 Marks)

Sl. No.	CIE Component/Week	Marks	Description
1	Orientation Activities & Communication Skills	5	Participation in Week 1–3 orientation, communication and teamwork skill-building exercises.
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6	Teamwork, Journal, and Engagement	5	Peer and mentor evaluation of participation, teamwork, journal updates.
7	Total CIE marks	50	Final CIE marks to be considered

***Minimum to Qualify for SEE: 20 out of 50 in CIE**

Semester End Examination (SEE) –

SEE to be conducted in batches where the students will exhibit their projects along with the presentation and Viva -voce. – 100 Marks

"SEE shall be conducted by one Internal and one External Examiner"

Sl. No.	Evaluation Parameter	Marks	Details
1	Prototype / Solution Demonstration	30	Working functionality, creativity, use of lab tools, relevance to the problem.
2	Final Presentation / Social Pitch	20	Clarity, storytelling, problem-solution fit, communication, visual aids.
3	Business Model or Sustainability Plan	10	Feasibility, cost-effectiveness, scalability, and alignment with SDGs.
4	Viva Voce	20	Individual understanding, contribution, tools used, learning outcomes.
5	Documentation Report / Portfolio	20	Project report, reflection, team activity log, stakeholder input summaries.

Submission Requirements:

- Handwritten activity book with CIE marks and Final project report (Typed or Handwritten).
- Final presentation ppt/pdf (hard and soft copy).
- Prototype or working model [physical or conceptual (shall be drawn/sketched clearly on card sheet paper)].
- Peer/team feedback and reflection entries (if applicable).