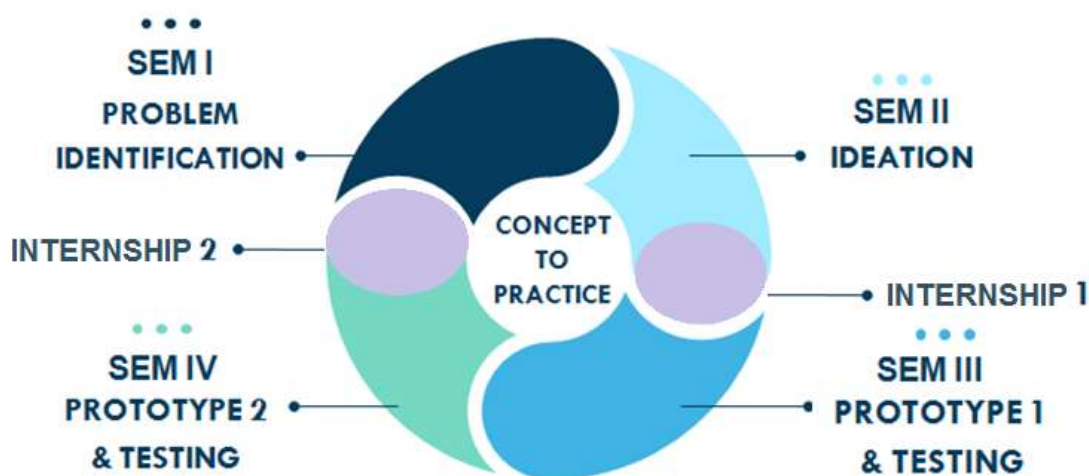


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	Criterion- 3	R,I & E
	KI 3.3	M 3.3.1

3.3.1	Institution has created an ecosystem for innovations, Indian Knowledge System (IKS) including awareness about IPR, establishment of IPR cell, Incubation centre and other initiatives for the creation and transfer of technology/knowledge and the outcomes of the same are evident
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Concept to Practice

Atmiya University’s Concept to Practice course is a thoughtfully designed program aimed at equipping students with foundational ideas, methodologies, principles, and multidisciplinary skills critical across all disciplines. Across four semesters, this course fosters a holistic design experience, encouraging students to engage in activities ranging from problem identification, ideation, brainstorming, and mind mapping to prototype preparation and refinement through societal feedback. It emphasizes systematic problem-solving and promotes entrepreneurial, research, and innovation mindsets, ensuring active student involvement at every stage to prepare them for real-world challenges. Additionally, the course supports faculty members in guiding prototype development, validating feedback, and preparing impactful dissemination materials such as posters, leaflets, and research papers.



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	KI 3.3	M 3.3.1

Semester - I

Course Description:

This Course on concept to practice is intended to introduce ideas, methodologies, principles, fundamentals and skills that comprise a common knowledge base important to all disciplines. These fundamentals will foster a multidisciplinary design experience among students and will prepare them to move to the next level. It will provide the students with foundation and fundamentals of skills in design. The course will benefit applicants who have little or no training or experience in art and design and who wish to begin formal education in this field.

Course Purpose:

Concept to practice enables organizations to create lasting value for consumers. The process is useful in any complex system it:

- Aims to solve concrete human needs.
- Tackles problems ambiguous or difficult to define
- Leads to more innovative solutions.

Course Outcomes: Upon completion of this course, the learner will be able to		
CO No.	CO Statement	Blooms taxonomy Level (K ₁ to K ₆)
CO ₁	Understand problem identification, formulation and solution.	K2
CO ₂	Design an engineering solution to complex problems.	K3
CO ₃	Communicate with the community at large in written and oral forms.	K3
CO ₄	Demonstrate a sound technical knowledge of their societal problems.	K2
CO ₅	Demonstrate the knowledge, skills, values and attitudes of professional graduates.	K3


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	KI 3.3	M 3.3.1

Course Content	<i>Hours</i>
Unit-I : Introduction to C2P	2 hrs
● Introduction to C2P, sensitization with activity	
Unit-II: Observation Canvas	3 hrs
Segregation of Fields & Teachers to the students observation canvas preparation	
Unit- III: Introduce the Empathy	4 hrs
● Case Study for difference between sympathy & empathy	
● activity 6: integration with stakeholder	
● Empathy canvas preparation	
Unit- IV: Problem Identification	3 hrs
● Problem Identification Canvas preparation	
● identification of 5 major problems	
Unit- V: Sustainable development goals (SDG)	3 hrs
● Introduction to SDG	
● Map the problems with SDGs	

Text books

1. Lockwood, T. (2010). *Design thinking: Integrating innovation, customer experience, and brand value*. Simon and Schuster.
2. Müller-Roterberg, C. (2021). *Design Thinking for Dummies*. HOEPLI EDITORE.

Reference books

1. Brown, T. (2008). Design thinking. *Harvard business review*, 86(6), 84.
2. Liedtka, J. (2018). Why design thinking works. *Harvard Business Review*, 96(5), 72-79.
3. Razzouk, R., & Shute, V. (2012). What is design thinking and why is it important? *Review of educational research*, 82(3), 330-348.

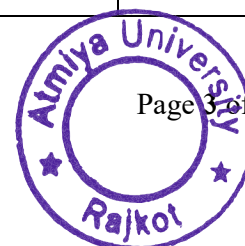
Methods of Assessment & Tools

Components of CIE: 40 marks

Sr. No.	Component	Marks	Sub Total
A	Weekly Discussion	5	5
B	Participation in identification of societal problem	3	3

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C	Canvas preparation including concept mapping and gap analysis	7	7
D	Report submission	5	5
Grand Total			20

Semester - II

Course Description

This Course on concept to practice is intended to introduce ideas, methodologies, principles, fundamentals and skills that comprise a common knowledge base important to all disciplines. These fundamentals will foster a multidisciplinary design experience among students and will prepare them to move to the next level. It will provide the students with foundation and fundamentals of skills in design. The course will benefit applicants who have little or no training or experience in art and design and who wish to begin formal education in this field.

Course Purpose

Concept to practice enables organizations to create lasting value for consumers. The process is useful in any complex system it:

- Aims to solve concrete human needs.
- Tackles problems ambiguous or difficult to define
- Leads to more innovative solutions.

Course Outcomes: Upon completion of this course, the learner will be able to		
CO No.	CO Statement	Blooms taxonomy Level (K ₁ to K ₆)
CO ₁	Understand problem identification, formulation and solution.	K2
CO ₂	Design an engineering solution to complex problems.	K3
CO ₃	Communicate with the community at large in written and oral forms.	K3
CO ₄	Demonstrate a sound technical knowledge of their societal problems.	K2
CO ₅	Demonstrate the knowledge, skills, values and attitudes of professional graduates.	K3



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Criterion- 3

R,I & E

KI 3.3

M 3.3.1

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	Criterion- 3	R,I & E
	KI 3.3	M 3.3.1

Course Content	Hours
Unit-I : Gap analysis of five major problems	2 hrs
<ul style="list-style-type: none"> ● Gap analysis of all five problems with all types of solutions ● preparation of gap analysis canvas 	
Unit-II: ideation process	3 hrs
<ul style="list-style-type: none"> ● Detailed study of existing solutions of all five problems. ● Identify limitations in existing solutions and possibilities of improvement. 	
Unit- III: solution analysis	4 hrs
<ul style="list-style-type: none"> ● Identify any one problem among the five based on the gap analysis. 	
Unit- IV: Preparation of Solution	3 hrs
<ul style="list-style-type: none"> ● Gap analysis, study existing solutions and possible solutions for that one problem. 	
Unit- V: Discussion on possible solutions.	3 hrs
<ul style="list-style-type: none"> ● Discussion internally with faculty members/industry personnel/stakeholder on possible solutions. 	

Text books

1. Von Thienen, J. P., Clancey, W. J., Corazza, G. E., & Meinel, C. (2018). Theoretical foundations of design thinking. In *Design thinking research* (pp. 13-40). Springer, Cham.

Reference books

1. Lupica, L. R., Franklin, T. A., & Friedman, S. M. (2017). The Apps for Justice Project: Employing Design Thinking to Narrow the Access to Justice Gap. *Fordham Urb. LJ*, 44, 1363. Kummitha, R. K. R. (2019).
2. Design thinking in social organizations: Understanding the role of user engagement. *Creativity and innovation management*, 28(1), 101-112.

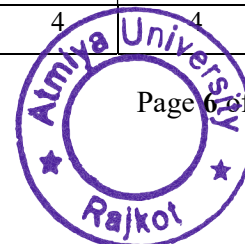
Methods of Assessment & Tools

Components of CIE: 20 marks

Sr. No.	Component	Marks	Sub Total
A	Gap Analysis	4	4
B	Ideation	4	4
C	Solution analysis	4	4
D	Presentation of solution	4	4
E	Report submission	4	4

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	Criterion- 3	R,I & E
	KI 3.3	M 3.3.1

Grand Total	20
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Semester – III

Course Description:

This Course on concept to practice is intended to introduce ideas, methodologies, principles, fundamentals and skills that comprise a common knowledge base important to all disciplines. These fundamentals will foster a multidisciplinary design experience among students and will prepare them to move to the next level. It will provide the students with foundation and fundamentals of skills in design. The course will benefit applicants who have little or no training or experience in art and design and who wish to begin formal education in this field.

Course Purpose:

Concept to practice enables organizations to create lasting value for consumers. The process is useful in any complex system it:

- Aims to solve concrete human needs.
- Tackles problems ambiguous or difficult to define
- Leads to more innovative solutions.

Course Outcomes: Upon completion of this course, the learner will be able to		
CO No.	CO Statement	Blooms taxonomy Level (K₁ to K₆)
CO ₁	Understand problem identification, formulation and solution.	K2
CO ₂	Design an engineering solution to complex problems.	K3
CO ₃	Communicate with the community at large in written and oral forms.	K3
CO ₄	Demonstrate a sound technical knowledge of their societal problems.	K2
CO ₅	Demonstrate the knowledge, skills, values and attitudes of professional graduates.	K3



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	KI 3.3	M 3.3.1

Course Content	Hours
Unit-I : Prototype 1(Fundamental) preparation	2 hrs
<ul style="list-style-type: none"> · From problems selected in semester 2, they will develop prototype 1 (rough) by visiting the solution provider. · Prototype 1 must be of fundamental type. · Evaluate the prototype 1 based on various parameters (e.g. ergonomics, technology, cost, aesthetics, eco friendly, usefulness, customer friendly etc.) 	
Unit-II: Evaluation of Prototype 1	3 hrs
<ul style="list-style-type: none"> · Evaluation of Prototype based on ergonomics · Evaluation of Prototype based on technology · Evaluation of Prototype based on aesthetic 	
Unit- III: Evaluation of Prototype 1	4 hrs
<ul style="list-style-type: none"> · Evaluation of Prototype based on eco friendly · Evaluation of Prototype based on usefulness · Evaluation of Prototype based on customer friendly 	
Unit- IV: Internal presentation of prototype 1	3 hrs
<ul style="list-style-type: none"> · Evaluation of prototype 1 by internal and interdisciplinary faculty members by presentation / exhibition · Re evaluate the prototype 1 based on feedback from faculty members 	
Unit- V: Reevaluation of prototype 1	3 hrs
<ul style="list-style-type: none"> · Visit the society · Identify difference between your solution & industries/ service provider · Comparison of both the solutions & resolve the shortfalls · Feedbacks of industries/ service provider 	

Text books:

1. Von Thienen, J. P., Clancey, W. J., Corazza, G. E., & Meinel, C. (2018). Theoretical foundations of design thinking. In *Design thinking research* (pp. 13-40). Springer, Cham.

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Reference books:

1. Lupica, L. R., Franklin, T. A., & Friedman, S. M. (2017). The Apps for Justice Project: Employing Design Thinking to Narrow the Access to Justice Gap. *Fordham Urb. LJ*, 44, 1363.
2. Kummitha, R. K. R. (2019). Design thinking in social organizations: Understanding the role of user engagement. *Creativity and innovation management*, 28(1), 101-112

Pedagogic tools:

- Power point presentation
- Videos
- Chalk and Talk

Methods of Assessment & Tools:

Components of CIE: 20 marks

Sr. No.	Component	Marks	Sub Total
A	Prototype 1 preparation	4	4
B	Prototype evaluation based on ergonomics, technology, aesthetic	4	4
C	Prototype evaluation based on eco friendly, usefulness, customer friendly	4	4
D	Presentation of prototype 1	4	4
E	Comparison of prototype	4	4
Grand Total			20

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	Criterion- 3	R,I & E
	KI 3.3	M 3.3.1

Semester – IV

Course Description:

This Course on concept to practice is intended to introduce ideas, methodologies, principles, fundamentals and skills that comprise a common knowledge base important to all disciplines. These fundamentals will foster a multidisciplinary design experience among students and will prepare them to move to the next level. It will provide the students with foundation and fundamentals of skills in design. The course will benefit applicants who have little or no training or experience in art and design and who wish to begin formal education in this field.

Course Purpose:

Concept to practice enables organizations to create lasting value for consumers. The process is useful in any complex system it:

- Aims to solve concrete human needs.
- Tackles problems ambiguous or difficult to define
- Leads to more innovative solutions.

Course Outcomes: Upon completion of this course, the learner will be able to		
CO No.	CO Statement	Blooms taxonomy Level (K₁ to K₆)
CO ₁	Understand problem identification, formulation and solution.	K2
CO ₂	Design an engineering solution to complex problems.	K3
CO ₃	Communicate with the community at large in written an oral forms.	K3
CO ₄	Demonstrate a sound technical knowledge of their societal problems.	K2
CO ₅	Demonstrate the knowledge, skills, values and attitudes of professional graduates.	K3



Course Content	Hours
Unit-I : Preparation of Improved Prototype 2 from prototype 1	2 hrs
· Collection of feedback from society and service provider for preparation of improved prototype 2	
Unit-II: prototype modification	3 hrs
· Prototype 1 Modification based on the feedback from society and service provider	
Unit- III: testing & validation	4 hrs
· Prototype testing with different methods · redesign prototype testing(design modification) · feature prototype testing (feature modification) · function prototype testing(function modification) · Prototype Validation using Business model canvas (BMC)	
Unit- IV: Prototype feedback	3 hrs
· Preparation of questionnaire for taking feedback · collect feedback from faculty members, peers & society	
Unit- V: Documentation for dissemination	3 hrs
· Prepare a report of activity from problem identification to prototype preparation. · Preparation of 3 fold folder/leaflet/handbill for dissemination & distribution among society during community engagement	

Text books:

1. Machida, H., & Kurachi, N. (1990). Prototype design and testing of the half toroidal CVT. In *International Congress and Exposition..*

Reference books:

1. Bland, D. J., & Osterwalder, A. (2019). *Testing business ideas: A field guide for rapid experimentation.* John Wiley & Sons.

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	KI 3.3	M 3.3.1

2. Engel, A. (2010). *Verification, validation, and testing of engineered systems* (Vol. 73). John Wiley & Sons.

Pedagogic tools:

- Chalk and Talk
- Power point presentation
- Videos

Methods of Assessment & Tools:

Components of CIE: 20 marks

Sr. No.	Component	Marks	Sub Total
A	Prototype 2 preparation	5	5
B	Presentation of prototype 2	5	5
C	Report preparation	5	5
D	3 fold foler/leaflet	5	5
Grand Total			20


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