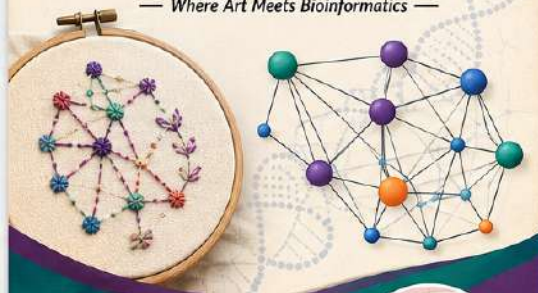


ADD-ON COURSE ON

CADD HOUR: FROM THREADS TO NETWORKS- EXPLORING STITCH ART AND CYTOSCAPE

— Where Art Meets Bioinformatics —



Duration: **35 Hours**

*"Bridging creativity and computation
to visualize the complexity of life."*



STITCH ART



NETWORK
THINKING



CYTOSCAPE
TOOLS



DATA ANALYSIS &
VISUALIZATION



Aim

This course introduces students to the interdisciplinary integration of creative stitch art concepts with computational biology tools such as Cytoscape. It aims to develop an understanding of network visualization, biological data interpretation, and artistic representation of complex systems. The course bridges traditional art forms with modern bioinformatics approaches, enabling students to explore biological networks in an innovative and intuitive manner.



Course Objectives

- 1 Understand the basic principles of stitch art and pattern representation.
- 2 Introduce students to Cytoscape and network visualization tools.
- 3 Explore the concept of biological networks (protein-protein interaction, gene networks).
- 4 Develop skills in mapping artistic patterns to computational network models.
- 5 Apply Cytoscape for data visualization and interpretation in life sciences.



Course Outcomes

- 1 Understand the integration of art and computational biology concepts.
- 2 Recognize different types of biological networks and visualization techniques.
- 3 Apply Cytoscape tools for network construction and analysis.
- 4 Analyze complex biological data using graphical representations.
- 5 Develop creative and scientific approaches for interdisciplinary research.



"Threads create beauty, Networks reveal biology."



SYLLABUS & ASSESSMENT



Module No.	Module / Topics	Hours
1	Introduction to Stitch Art & Network Thinking • Basics of stitch art • Nodes & connections in art • Network thinking • Visualization in science	6
2	Basics of Bioinformatics & Biological Networks • Bioinformatics • Types of biological networks • Data sources • Systems biology	6
3	Introduction to Cytoscape • Installation & interface • Importing data • Network construction • Layouts & styles • Tools & plugins	6
4	Network Analysis & Visualization • Network parameters • Key nodes & hubs • Functional enrichment • Case studies • Customization	6
5	Integration of Stitch Art with Network Models • Stitch patterns to network diagrams • Creative visualization • Hands-on activity • Interpretation of outputs	6
6	Emerging Trends & Applications • Network pharmacology • Role of AI • Advanced Cytoscape plugins • Future of art + science • Project / Mini Assignment (Brochure Design)	5

APPLICATIONS OF CYTOSCAPE

- Protein-Protein Interaction Networks
- Gene Regulatory Networks
- Drug Discovery & Repurposing
- Disease Network Analysis
- Pathway & Functional Analysis
- Systems Biology Research

ELIGIBILITY & ASSESSMENT

Eligibility
B. Pharm / Pharm D /
M. Pharm Students

Assessment Mode
► Theory Examination
► Attendance: Minimum 80%
► Passing Criteria:
Minimum 50% Marks