Project Based Experiential Learning for Art & Science Students

Google Android App Development , Google Machine Learning

SmartBridge | info@thesmartbridge.com   Proposal Document

Program Understanding

Program aims to develop employability, innovation and entrepreneurship skills in the students through project-based experiential learning in collaborative learning environments under the guidance of industry mentoring. Program assists students in developing technical and professional competencies as they create innovative solutions to problem statements. Students are taught to think technically and with an open mind. Normally, companies provide such training after recruiting students, but under this project, skills are provided in colleges.

Objectives:

❑ To empower the students with technical skills to require solving a real-world challenge
❑ To train the students on the approach to building solutions by applying critical thinking and problem-solving capabilities in a collaborative environment.
❑ To mentor the students to build innovative solutions by applying design thinking concepts.
❑ To introduce the standard project development methodologies followed in the industry to the students
❑ To develop the professional skills like teamwork, leadership qualities, communication in the students
❑ To enhance the employability of students in order to get them internships and job opportunities

Project Based Experiential Learning

Project based learning helps students to understand the concepts by applying them on real-world usecases. Hands-on learning experiences help them build following professional and technical competencies required for job readiness and innovation

PROFESSIONAL COMPETENCIES

Critical Thinking & Problem Solving

Communication Skills

Teamwork & Inclusivity

Ideation & Innovation

Agile & Design Thinking practices

Research & Project planning

TECHNICAL COMPETENCIES
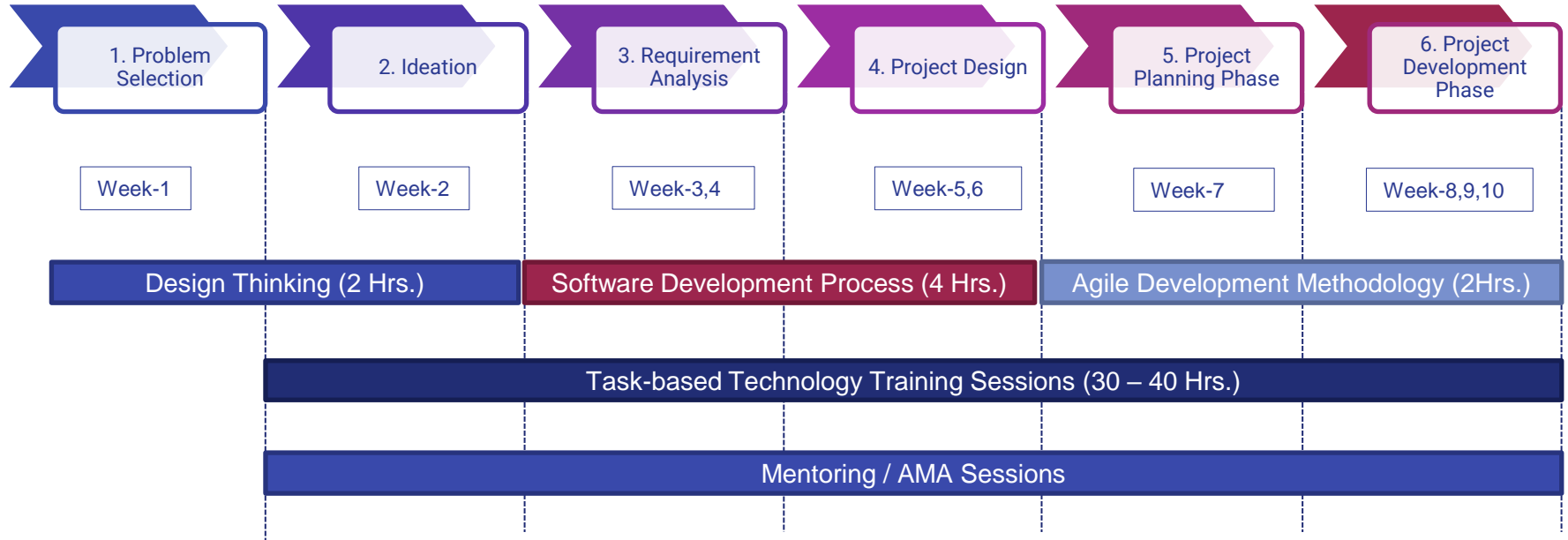
Technology Stack (use APIs, tools, techniques)

Coding & Solutioning

Solution architecture, Demos & presentation

Program Structure

Smart Internz

Program will be delivered in six phases listed below in 10 Weeks with atleast 7.5 Hrs of learning a week. Students will choose a problem statement at the beginning of program and develops working prototype by the end of program. During the development process, they will learn the concepts of design thinking, software design process, agile development methodologies and technology to implement the solution.

1. Problem Selection	2. Ideation	3. Requirement Analysis	4. Project Design	5. Project Planning Phase	6. Project Development Phase
Week-1	Week-2	Week-3,4	Week-5,6	Week-7	Week-8,9,10

Design Thinking (2 Hrs.)

Software Development Process (4 Hrs.)

Agile Development Methodology (2Hrs.)

Task-based Technology Training Sessions (30 – 40 Hrs.)

Mentoring / AMA Sessions

Program Evaluation

Total scoring for the program will be 100 marks and 50% will of which would be technical assessment score and remaining 50% would be project evaluation score as below.

Technical Assessment (50 Marks)

Technical Evaluation of Students will carried out in the form of a grand assessment at the end of technology training sessions

MCQ based assessment
25 Questions – 50 Minutes

Project Evaluation (50 Marks)

Project deliverables will be evaluated and the scoring will be provided as below.

Ideation – 10 Marks
Requirement Analysis – 10 Marks
Project Design - 10 Marks
Project Development – 10 Marks
Project Documentation – 5 Marks
Project Demonstration – 5 Marks

Program Highlights

Program will be delivered over a semester as a mandatory course in the curriculum.

20 Problem statements from various business domains

60 - 80 Hrs. of Project-based Experiential learning

30 Hrs. of hands-on technical training

20 - 30 Hrs. of Team-based Project development

10 Hrs. of training on Ideation, Design & Development process

4 Technology Tracks for Hands-on learning

Technology Tracks

1. Android Application Developer
2. Machine Learning

Business Sectors

Healthcare, Banking, Insurance, Retail, Fashion, Transportation, Agriculture, Manufacturing, Energy, Smart Cities, Environment, Public Safety, Etc.

Learning Tracks (in Partnership with Google Developers)

Smart Internz

Following are the learning tracks and corresponding pre-requisites and System requirements.

3. Android Basics with Compose

Introduction to Android App Development, Set-up Android Studio, Kotlin Programming, Kotlin fundamentals, Kotlin Playground, Building App UI, Material design, Navigation and App Architecture, Jetpack Compose, Connect to Internet, Load & Display Images, Data Persistence, Work Manager, Android Emulator.

Pre-requisites:
- ❑ Basic knowledge on any programming language
- ❑ Basic skills on working with database
- ❑ Basic computer knowledge, navigation, etc.

Suitable for B.Sc. Computers, BCA

System Requirements: 8GB RAM, Core i3 or equivalent processor, good internet connection

4. Machine Learning with Python

Introduction to Data Science, Googe Colab, Kaggle Learning, Python Basics, Python Packages – Numpy, Pandas, Data Visualization, Data Wrangling, Supervised learning – Regression, Classification, Model Evaluation Metrics, Hyper Parameter Optimization, Introduction to Unsupervised Learning, Build and Deploy Machine Learning Models

Pre-requisites:
- ❑ Basic knowledge on any programming language
- ❑ Basic skill on working with data
- ❑ Basic computer knowledge, navigation, etc

Suitable for B.Sc. Computers, BCA, B.Sc. Stats

System Requirements: 4GB RAM, Core i3 or equivalent processor, good internet connection

Platform Capability

Project-based learning platform has dedicated access to all the stack-holders involved in the project. It also provides a company like collaborative environment with a guided project template for student reference.

Login for Stakeholders
1. University Login, Dashboard
2. Faculty Mentor Login
3. Student Login
4. Industry Mentor Login
5. Industry Evaluator Login

Important Features
1. Team-based project enrollment
2. Access to free courses
3. Project workspace
4. Chat with Mentor
5. Kanban Board for Project Tracker
6. View Mentor Comments
7. GitHub Integration
8. Guided Project for Reference
9. Team Lead, Activity Assignment, Tracker
10. Access Recorded videos