ECE-GY-9953 (3 credit) ECE-GY-9941 (1.5 credit) Advanced Project

PROJECT ROADMAP, HIGH LEVEL ACTIVITIES

ROADMAP

A) PROJECT PROPOSAL

- [ ] Abstract/Introduction/Description/Executive Summary
- [ ] Purpose/Anticipated benefits/Justification
- [ ] Objectives (SMART goal)
- [ ] Scope: Product Scope, Project Scope
- [ ] System: Backend, Frontend
- [ ] Technical Solution Overview

ROADMAP...

B) OLTP DATABASE DESIGN (NORMALIZED DESIGN)

- ❑ **Enterprise Database Model**

- ❑ **Logical Database Model**

- ❑ **Relational Database Model**

- ❑ **DDL Generation**

ROADMAP...

C) OLTP DATABASE IMPLEMENTATION

Create Objects (Tables, Indexes, Triggers, Function, Procedures)

Populate Data

Test Data, Constraints, Triggers for validations

ROADMAP...

D) FRONT END APPLICATION DESIGN AND CODING (For ECE-GY-9953 only)

- ☐   **Application Frame Work (Menus, Navigations, DB connections)**

- ☐   **User and Management separation**

- ☐   **DB Security management (Role base grants), Password management**

- ☐   **Application security management**
- ☐   **(Data validations, Confirmations, SQL injection, Cross Site scripting Procedures etc.)**

ROADMAP...

E) DATA WAREHOUSE DESIGN and IMPLEMENTATION

❑   **DE-Normalization from OLTP design
(STAR SCHEMA with DIM_DATE dimension)**

❑   **Enterprise, Logical, and Relational Model**

❑   **DDL code generation and Creation of Schema**

ROADMAP…

F) ETL CODE

☐ **Extract from OLTP database based on timestamp (CDC-change data capture)**

☐ **Transform Data to match DW schema (using External tables, and PL/SQL)**

☐ **Load Data to DW schema**

ROADMAP...

G) Reports and Analytics from DW database, e.g. using Tableau

       Use any reporting tool for querying data

       Generate reports, Data analytics charts/graphs, Dashboard

H) END to END FUNCTIONALITIES TEST

I) PROJECT REPORT and PROJECT PRESENTATION

J) PROJECT DEMO