

**UNIVERSITY OF RUHUNA**  
**BACHELOR OF INFORMATION AND COMMUNICATION**  
**TECHNOLOGY DEGREE**  
**LEVEL II (SEMESTER I) – Mini Project**

**Course unit: ICT2132 – Object Oriented Programming Practicum**

**Submission Date: Sunday 11.00 p.m. 27<sup>th</sup> April 2025**

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You are required to develop a system using JAVA and MYSQL for faculty of technology for handling

- User Profiles (Admin, Lecturer, Student, Technical Officer)
- Course Details
- Undergraduate Marks
- Undergraduate Attendance
- Notices
- Timetables
- Medicals

**Admin**

- Create and maintain all User Profiles
- Create and maintain Courses
- Create and maintain Notices
- Create and maintain Timetables

**Lecturer**

- Can update their profile except username and password
- Can modify and add materials to courses
- Can upload marks for all kind of exams
- Can see undergraduate details
- Can see undergraduate eligibility
- Can see undergraduate marks, grades and GPA
- Can see attendance and medical records of undergraduate
- Can see notices

**Technical Officer**

- Can update their profile except username and password
- Can add and maintain attendance details of undergraduate
- Can add and maintain medical details of undergraduate
- Can see notices
- Can see timetables of their department

**Undergraduate**

- Can update only contact details and profile picture of their profile
- Can see attendance details
- Can see medical details
- Can see their course details
- Can see their grades and GPA
- Can see their timetables
- Can see notices

- You should store data for 01 admin, at least 05 lecturers, at least 04 technical officers, at least 20 undergraduates.
- You should record attendance details for undergraduates for 05 subjects with 15 days
  - Refer Table 01 for course modules and assume that both theory and practical components have 15 sessions
  - If some undergraduates have submitted a medical for a day, there should be a way to record it
  - There must be data for the attendance records to cover the following scenarios
    - Undergraduates with more than 80% attendance
    - Undergraduates with exactly 80% attendance
    - Undergraduates with less than 80% attendance without medicals
    - Undergraduates with more than 80% attendance with medicals
    - Undergraduates with less than 80% attendance with medicals
  - There should be a way to view attendance details as a summary for whole batch and as individuals
  - When there is both theory and practical for a subject there should be a way to check attendance only for theory, only for practical and as combined
  - Assume one session for 01 credit for theory(1T) is 2 hours and one session for one credit for practical(1P) is 02 hours
- You should record marks for the subjects as follows (All marks should be out of 100)

Subject code	Quizzes	Assessments	Mid term	Final theory	Final practical
ICT2113 (2T+1P)	10% (best 02 out of 03 quizzes)	-	20%	40%	30%
ICT2122 (2T)	10% (best 03 out of 04 quizzes)	10% (01 assessment)	20%	60%	-

ICT2133 (2T+1P)	10% (best 02 out of 03 quizzes)	20% (02 out of 02 assessments)	-	40%	30%
ICT2142 (2P)	-	20% (01 assessment)	20%	-	60%
ICT2152 (2T)	10% (best 02 out of 03 quizzes)	20% (02 out of 02 assessments)	-	70%	-

Table 01

To obtain the eligibility CA part must have more than or equal 50%

- There should be a way to view CA marks details as a summary for whole batch and as individuals
  - There should be a way to see if undergraduates/s are eligible according to the criteria of CA to sit for the final exam
  - There should be a way to check eligibility (attendance + CA marks) as individuals and for the whole batch
  - There should be a way to see the final marks only for individuals and whole batch
  - Grade undergraduates according to the by law of the faculty
  - There should be a way to see marks for each subject, individuals and as a whole batch
  - There should be a way to see Grades for each subject, individuals and as a whole batch
  - There should be a way to see SGPA and CGPA with the subjects and grades for each undergraduate and for the whole batch
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01. Based on above given details about the required system draft a Software Requirement Specification (SRS) for the proposed system that you are going to create for faculty of technology.

- Get together as a batch and complete this task

Due date 23<sup>rd</sup> February 2025

Upload soft copy of the SRS to LMS under Mini Project section of the module

(As groups)

02. Create class diagram using UML, and create an ER diagram for the database for your mini project

Due date 02<sup>nd</sup> March 2025

Upload soft copy of the class diagram and the ER diagram to LMS under Mini Project section of the module

(As groups)

**03. Complete your mini project**

Due date 27<sup>th</sup> April 2025

Submit a report on your project covering all the details

- Upload a soft copy of the report to LMS under Mini Project section of the module
- Clearly write down the individual contribution in the report
- Share the source code of your project by uploading it to a Git repository

(As Groups)

**04. Evaluation of the mini project**

- Date: will inform in due course
- Each group must present their progress
  - 15 minutes presentation + 10 minutes discussion
- **There will be an individual evaluation for each group member on their contribution to coding**

**Note:**

**Each Group member must demonstrate at least the usage of following concepts(but not limited to) in their development part of the mini project.**

- **Classes and Objects**
- **Inheritance**
- **Abstraction**
- **Polymorphism**
- **Encapsulation**
- **Error and exception handling**
- **Database Handling**
- **GUI**