NORTHWESTERN POLYTECHNIC

SCIENCE DEPARTMENT

COURSE OUTLINE –WINTER 2025

CS2910: Introduction to File and Database Management 3 (3 0 3) UT

90 Hours for 15 Weeks

Northwestern Polytechnic acknowledges that our campuses are located on Treaty 8 territory, the ancestral and present-day home to many diverse First Nations, Metis, and Inuit people. We are grateful to work, live and learn on the traditional territory of Duncan's First Nation, Horse Lake First Nation and Sturgeon Lake Cree Nation, who are the original caretakers of this land.

We acknowledge the history of this land and we are thankful for the opportunity to walk together in friendship, where we will encourage and promote positive change for present and future generations.

INSTRUCTOR:	Dr. Hanna Yehoshyna	**PHONE:**	780-539-2074
OFFICE:	C-302	**E-MAIL:**	hyehoshyna@nwpolytech.ca
OFFICE HOURS:	appointment by email		

CALENDAR DESCRIPTION:

The course includes basic concepts in computer data organization and information processing; hardware, physical organization, and access methods for fine storage; file I/O; introduction to database systems.

PREREQUISITE(S)/COREQUISITE: *CS2010*

REQUIRED TEXT/RESOURCE MATERIALS:

The text for this course is:

- *Fundamentals of Database Systems 7th edition by R. Elmasri and S.B. Navathe. ISBN 0-13-397077-9*

DELIVERY MODE(S):

In Person. This course is delivered in person at the Grande Prairie campus.
This course includes 3-hours of lecture per week and a 3-hour lab per week

Lecture:	A3	G112	Tues. 11:30 – 12:50 Thur. 11:30 – 12:50
Labs:	L1	G112	Thur.14.30 – 17.20

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LEARNING OUTCOMES:

As a result of taking this course, students will gain the ability to:

- describe the database approach, major components in a typical database environment, and database application life cycle.
- understand and explain the basic definitions and characteristics of databases;
- differentiate between various data models, understand and perform normalization of a database;
- analyze organization's and client's needs regarding data, data organization, and data storage;
- apply principles of database design to elaborate an entity-relationship model given a user's requirements;
- use their knowledge of data models to construct a logical and physical database design based on a client's system requirements;
- interact with DBMS using SQL;
- design and implement applications that make use of DBMS to administer user data;
- develop and implement database solutions using popular relational database application software.

TRANSFERABILITY:

Please consult the Alberta Transfer Guide for more information. You may check to ensure the transferability of this course at the Alberta Transfer Guide main page http://www.transferalberta.alberta.ca.

** Grade of D or D+ may not be acceptable for transfer to other post-secondary institutions. **Students are cautioned that it is their responsibility to contact the receiving institutions to ensure transferability.**

EVALUATIONS:

Your final grade will be determined in the following manner:

Assignments	*30%*
Quizzes	*10%*
Midterm Exam	*25%*
Final Exam	*35%*

GRADING CRITERIA

Please note that most universities will not accept your course for transfer credit **IF** your grade is **less than C-**.

Alpha Grade	4-point Equivalent	Percentage Guidelines	Alpha Grade	4-point Equivalent	Percentage Guidelines
A+	4.0	95-100	C+	2.3	67-69
A	4.0	85-94	C	2.0	63-66
A-	3.7	80-84	C-	1.7	60-62
B+	3.3	77-79	D+	1.3	55-59
B	3.0	73-76	D	1.0	50-54
B-	2.7	70-72	F	0.0	00-49

COURSE SCHEDULE/TENTATIVE TIMELINE:

Weeks	Topics
1	Introduction and Outline. Databases and Database users
2	Database Systems Concepts and architecture
3	The Relational Data Model and Relational Database Constraints
4	Basic and intermediate SQL
5	Basic and intermediate SQL (cont.)
6	The Relational Algebra and Relational Calculus
7	The Relational Algebra and Relational Calculus (cont.)
8	Data Modeling Using the Entity Relationship (ER) Model
9	The Enhanced Entity Relationship (EER) Model
10	**Review + Midterm Exam**
11	Relational Database Design by ER- and EER-to-Relational Mappin
12	Normalization for Relational Databases
13	File Structures, hashing, indexing and physical database design
	File Structures, hashing, indexing and physical database design (cont.)
15	Distributed Databases, NOSQL systems, and Big Data overview
16	**Final Exam**

STUDENT RESPONSIBILITIES:

- Students are responsible for all material taught, discussed, assigned or presented by the Instructor. It is the student's responsibility to obtain any missed material covered during classes.

- Students take the two examinations at the date and time announced by the Instructor and/or Student Services. If the midterm is missed due to illness the weight will be put on the final. If the final is missed due to illness it will be deferred.
- Documented illness is the only valid excuse for missing an exam. An original medical note will be required in both cases. A grade of 0 may be assigned for any missed exam.
- Students must be prepared for class with the proper books and assignments, and having read and/or completed all assigned material.
- Students are supposed to complete assignments on or before the due the time and date announced by the Instructor. Late assignments will not be accepted.
- All work (tests, quizzes, assignments) must be submitted via myClass; no emailed submissions will be accepted.
- Students are not permitted to work together on assignments or exams (quizzes) (unless otherwise instructed by the Instructor).

Course Evaluation Practices:

- all assignments must be completed as individual efforts unless the Instructor states otherwise;
- tests (and quizzes) must be written as scheduled by the Instructor;
- a student must average at least 50% on the tests combined in order to receive credit for this course;
- a student must average at least 50% on the assignments in order to receive credit for this course.

STATEMENT ON ACADEMIC MISCONDUCT:

Cheating and plagiarism will not be tolerated and there will be penalties.
Academic Misconduct will not be tolerated. For a more precise definition of academic misconduct and its consequences, refer to the Student Rights and Responsibilities policy available at https://www.nwpolytech.ca/about/administration/policies/index.html.

**Note: all Academic and Administrative policies are available on the same page.