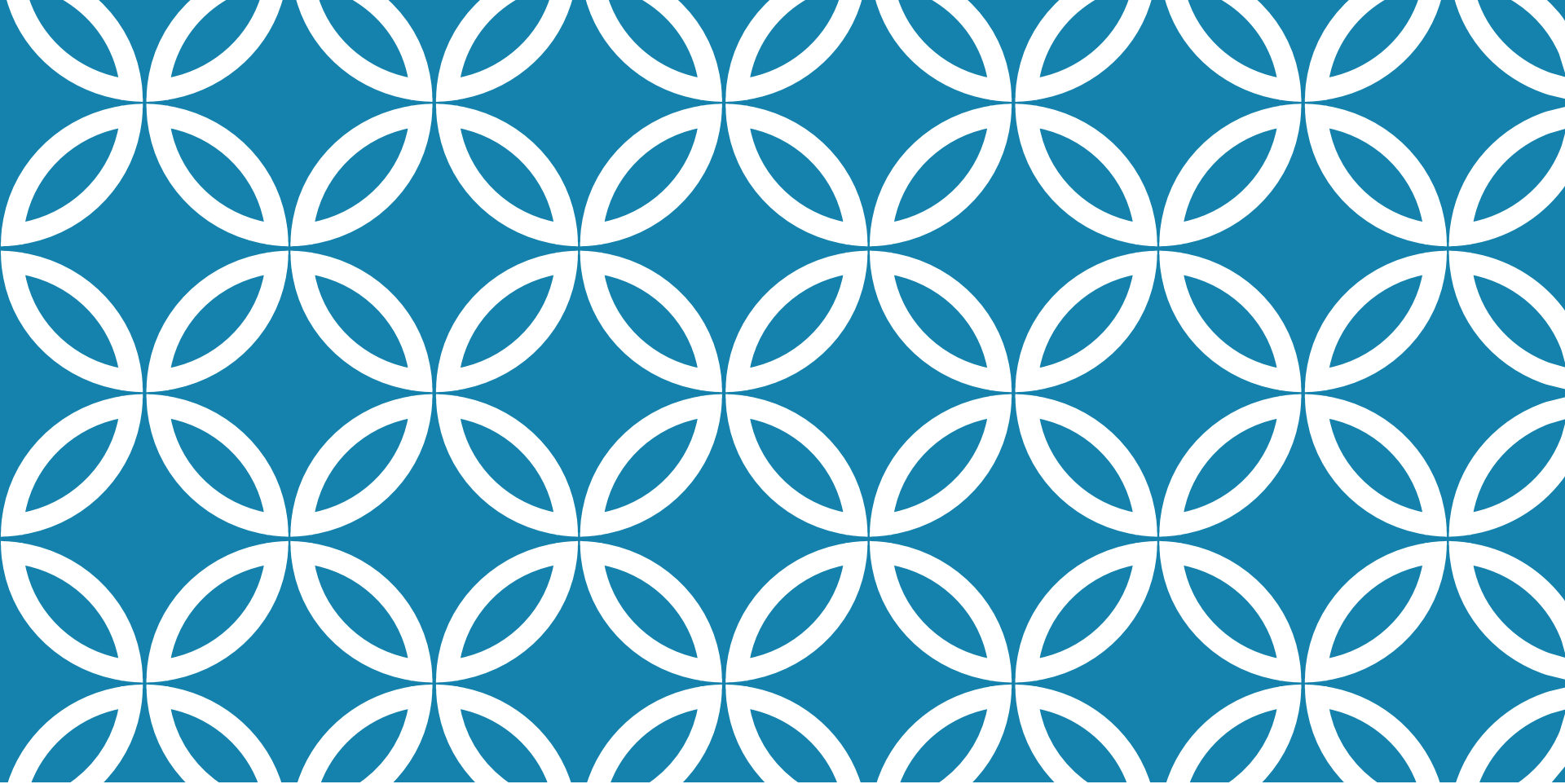




CT230 DATABASE SYSTEMS

Introductions
Semester 1
2022



WELCOME!

Fáilte roimh go léir!

Module Code:

CT230

Module Name:

**Database
Systems**

LECTURE TODAY ... INTRODUCTIONS

- Me
- You
- CT230:
 - Learning outcomes and course outline
 - Systems and tools we will use
 - Some information on how lectures, labs, assessment and exam will work this year
 - Introduction to Database Systems

ME!



Dr Josephine Griffith (She/Her)

Room 405 Computer Science Building (formerly IT building)

School of Computer Science

College of Science & Engineering

Josephine.Griffith@universityofgalway.ie

YOU ... 140 students taking this class at the latest count !

- 2BCT
- 2BA, 2BDA, 2BDS, 2BFD, 2BFS, 2BGM, and possibly others once registration is finished
- 3CSM
- 3BP, 3BLE
- Erasmus Visiting Students: 1EM

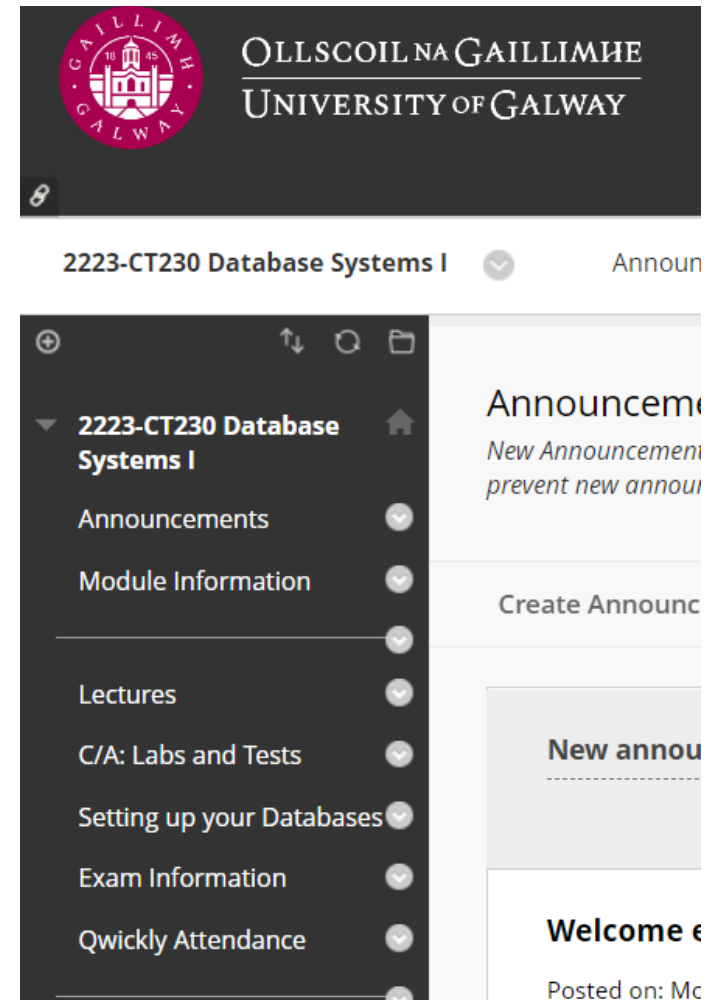
You all belong here!
You all belong here!
You all belong here!
You all belong here!

HOW ARE “WE” GOING TO DO THIS

- We are required to exclusively deliver on-campus lectures and on-campus labs
- Attendance at lectures will be logged – though won't be correct until probably week 3 when registration is hopefully finalised - please only sign in if you really are here!
- I generally provide summary videos of core concepts as a study/revision aid.

BLACKBOARD “QWICKLY” SIGN IN ...

- Need to be registered and on Blackboard to sign in
- I know not everyone will be registered fully today – that’s ok.
- Go to Blackboard and CT230 and click on “Quickly Attendance” in Content Area
- I will give code ...



COMMUNICATION IN DISCUSSION BOARDS

Rule of thumb: If you wouldn't say something in a face-to-face setting, then don't say it online either.

USING MENTI FOR QUESTIONS

We will use menti.com to ask questions (2-way!).

I will try take a regular break from lectures to try answer some of the questions but all valid questions will be answered eventually.

Note to treat each other (and me!) with respect and be careful of our tone. We have a diverse group – which is fantastic! – let's make sure everyone feels they belong and that we don't waste anyone's time.

1 TONE



Typed messages are very different to face-to-face conversations as they can lack the vocal and nonverbal cues such as your tone of voice. Satire or sarcasm can often come across in a very different way in written form. It is important to make it clear to your peers when you're joking.

2 SPELL-CHECK



It is a good idea to have a quick review and spell-check of your messages before posting them, it will only take a minute and can make a big difference.

3 AVOID ALL CAPS



Avoid typing in ALL CAPITAL LETTERS! Not only is it difficult to read but it is usually interpreted by readers as the text form of shouting.

At the same time, be forgiving of your classmates' mistakes or typos as we all know it can be easy to make spelling or grammatical errors.

4 CAUTION



Unless you are explicitly given permission, don't publicly post email or other messages, that have been sent to you in private.

5 RESPECT



Respect the opinions of your classmates, even if you disagree with them it is important to acknowledge that others are entitled to have their own perspective on issues.

6 CHECK FAQ



Before you post a question to a discussion board, be sure to check that someone hasn't already asked it already and received a reply. It is also worth checking the course FAQs.

FOR NON-PUBLIC QUESTIONS

I will try finish 5 minutes early for the first few weeks so I will have extra time for questions.

As we have to vacate the lecture theatre in time for the next class, I can wait outside the lecture theatre (downstairs) if we run out of time.

Email is always an option:

josephine.Griffith@universityofgalway.ie

You can arrange to come talk to me in person by setting up an appointment.

I will also attend some labs and you can ask me questions there.

**LET'S NOW START TALKING ABOUT THE
MODULE ...**

CT230 DATABASE SYSTEMS

LEARNING OUTCOMES

- A folder for each of these on Blackboard
- A number of lectures associated with each

LO1	Define and explain terms, concepts, properties and constraints of Relational Database Systems
LO2	Identify the theoretical and practical issues in the storage, manipulation, organisation and indexing of large quantities of data
LO3	Program a database management system for database creation and manipulation
LO4	Use Relational Algebra for relational database retrieval
LO5	Program using SQL for relational database retrieval and manipulation
LO6	Create and apply Entity Relationship Diagrams (ERD) as part of database development
LO7	Specify functional dependencies and differentiate between relations in 1st Normal Form, 2NF, 3NF. Apply the process of normalization
LO8	Define and explain the process of query processing and optimisation. Apply query optimisation heuristics to develop a query tree that represents an efficient evaluation strategy for a given query.

COURSE TOPICS

(not the order we will follow)

- LO1: Database fundamentals:
 - Data, Information & Database Systems
 - The Relational Model
- LO2: Database fundamentals: File Organisations
- LO3: Database programming: SQL for database creation and manipulation (DDL)
- LO4: Database fundamentals: Relational Algebra
- LO5: Database programming: SQL for database retrieval and manipulation (DML)
- LO6: Database design: Entity-Relationship Modelling
- LO7: Database design: Normalisation
- LO8: Database programming: Query Processing and Optimisation

Lectures

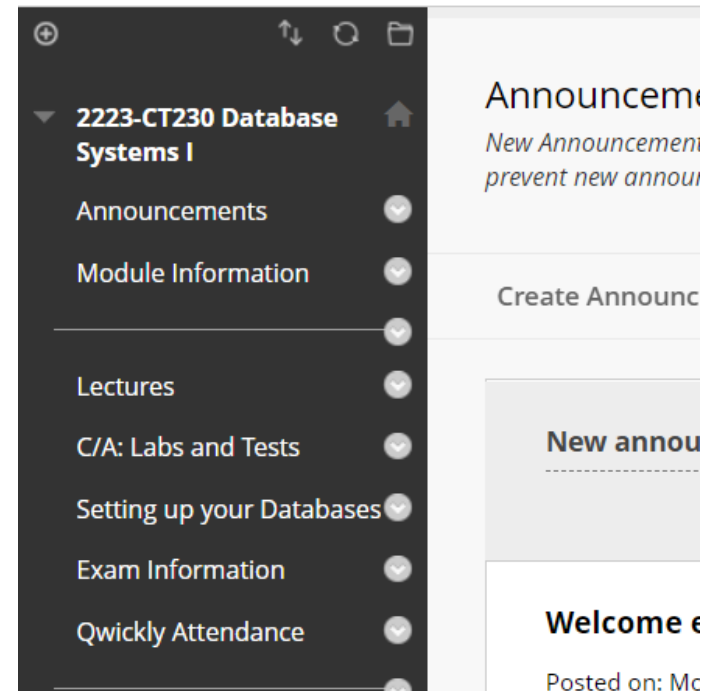
Lecture materials will be posted before lectures on Blackboard

In person lectures for 12 weeks in AM200 (Fottrell theatre)

- Tuesday 2-2.50pm
- Wednesday 12-12.50pm



2223-CT230 Database Systems I



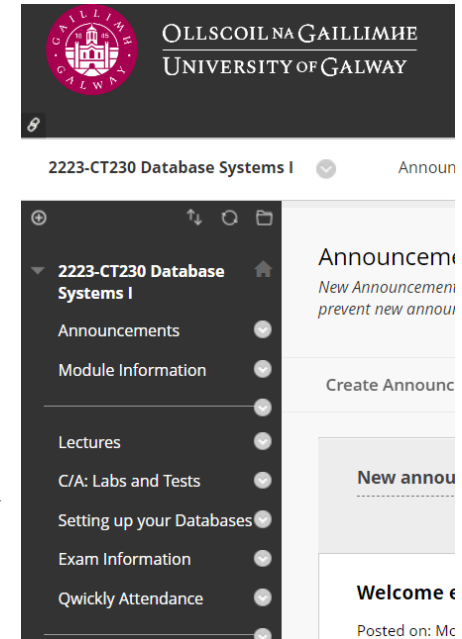
LECTURE NOTES

CT230 module on Blackboard will contain all the materials.

Note that there will be a mixture of notes, videos, worked examples, code, etc. for this module.

Ideally use a (paper or electronic) **notebook** for the course or have a good process for working on exercises on laptop.

Notepad++ is a good editor (rather than using MS word or equivalent)



C/A: Labs and Tests

Starting week 3 (19/09/2022)

Each lab session will have a lab tutor

3BP, 3BLE: Mon 4-6 *IT101*

2BCT: Tue 3-5 *IT101*

3CSM: Thur 10-12 *IT106*

2BA and other BA programmes: Thur 10-2 *IT106*
– any 2 hours – to be organised

Visiting Students: Pick any time that suits and let me know please (*by email*)

IMPORTANT RE LABS

- Physical Labs will not start until week 3.
- You can start getting prepared for labs based on our lectures.
- It is important that you have your **CS account** set-up and are able to connect to the CS server before labs begin.
- A schedule of labs and tests will be available soon on Blackboard and I will discuss in detail once available.

CS ACCOUNTS

RETRIEVING YOUR ACCOUNT DETAILS

Check If you have an account and retrieve the details: please enter you student id (cao ref) And Date of birth.

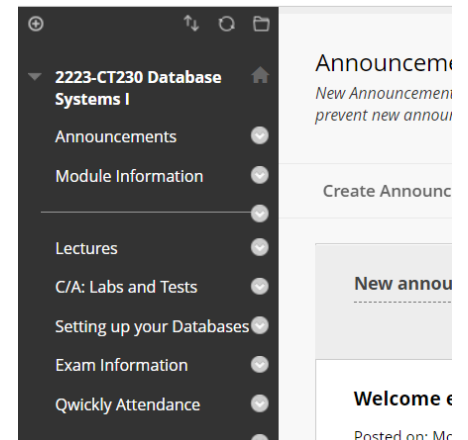
Student id: Date of Birth:

CHECK MY ACCOUNT STATUS

- Everyone should have an ISS account which you use to access Blackboard, Library, Computer Suites, etc.
- For this module you also need a CS account to access the CS intranet to get your own mySQL database:
- <http://www2.it.nuigalway.ie/accounts/>
- All information will be in “Setting up your Databases”



2223-CT230 Database Systems I Announ



ASSESSMENT INFORMATION

CT230 is assessed via a Semester 1 written exam and C/A throughout the semester.

The breakdown of the final mark is:

- 20% C/A
- 80% Exam

EXAM

- Examined in December 2022 (Exams office will generate exam timetable in November)
- Exam will be two hours duration* and will be in person (not online).
- Will discuss the format of the exam closer to the time - many past exam papers exist as examples.

* unless you have a LENS report

ATTENDANCE AT LECTURES, LABS, COMPLETION OF ASSIGNMENTS AND TESTS

In addition to gaining up to 20% of the final mark, some exam questions become much easier if you have completed the assignment work

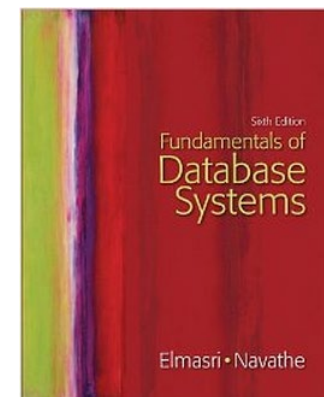
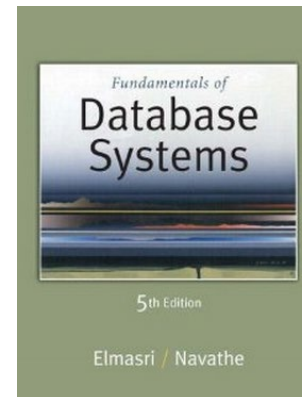
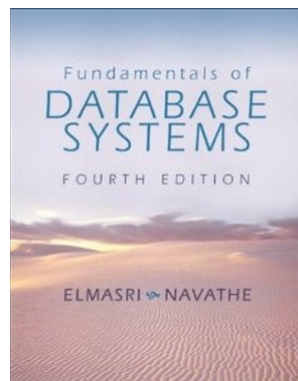
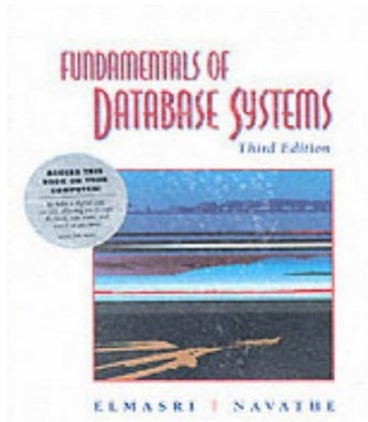
Plagiarism is not acceptable and will result in a 0 mark

RECOMMENDED BOOK

Fundamentals of database systems

By Ramez Elmasri and Sham Navathe

- Any edition is fine
- Editions 3, 5 and 6 available in library at
Main Library Open Access (005.74 ELM)



SOME GENERAL COMMENTS ON THE YEAR

It starts now!

If you have problems, the sooner I (and in general “we”) find out the more we can help.

Spend some time now:

- thinking of your priorities and time commitments and how you will manage these for the semester.
- Thinking of your triggers – how you will know if things are going well or not going well – and what you will do.
- Thinking about how to organise your notes and materials and lecture sessions and meet your deadlines.

TOMORROW'S LECTURE

- 12 noon here in AM200
- Topic: Introduction to Database Systems
- Have a great day!