ACS-2814-002

Lab #1

Submit your ERD file / diagram via an email to: yc9579@gmail.com

Using the ERD tool available [here](http://courses.acs.uwinnipeg.ca/erd/erd%20tool.html), or simply Word, create an ERD for the requirements below

* ERD: Must adhere to the Chen notation used in ACS-2814.
* Must be readable (no lines crossing, attributes close to their entity type/relationship type, consistent fonts/colours, etc.).
* Place a comment at the top of the ERD with your name and student number.
* If necessary use a ‘Snipping Tool’ to create an image of your design.

A student is identified by their student number, and the university keeps track of their name, address and program. Some applications may need to refer to the student’s last name. Each course has a title, course number, description, and number of credits. Some courses require a prerequisite course. A section is a course offering that has a time and room, and instructor that teaches it. It is identified within each course by its section number, year and semester. Each instructor has a name, office number and phone number, and is identified by their employee number. Students are enrolled in sections, and a grade is given to each student for each course section that they are enrolled in.

Some queries that could be answered:

* What sections is student *s* enrolled in for the current academic year?
* Which instructor is assigned to section *x*?
* Has student *s* taken the prerequisite for course *c*?

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**EXTRA WORK: Do not submit**

(Past exam question)

Create an ERD that includes at least the entity types Department, Course, Section, Building, and Room. More entity types will likely be useful as well as relationship types and attributes.

The intent is to design a database to hold section scheduling information. On the following pages are examples of scheduling at the U of W. If the design were to be implemented the database could be used to answer queries such as

* What rooms are used for section D-C-S?
* Is room X free on Mondays from 13:00 to 14:00?
* What is the start date for lectures in section D-C-S?
* What courses does an instructor with last name Q lecture?
* What days of the week is instructor Q lecturing?

At the U of W a section (e.g BIOL-1005-250) is identified by department code, course number, section number.

As well as having a unique department code, each department has a unique name.

Each course has a title and has a specific number of credit hours. A course is identified by the combination of department code and course number (e.g. BIOL-1005).

For each section (e.g. BIOL-1005-250):

* There is one or more instructors assigned (e.g. B. Biemacka and V. Mikosevic-Zdjelar).
* There is one or more rooms assigned (e.g. 2M77 and 1RC014). Each room is used for a period of time given by a start date and end date (e.g. May 11, 2015 to June 1, 2015).
* If multiple rooms are assigned then the usage times do not overlap.
* When a room is assigned it is used on specific days of the week (e.g. MWF) for a specific period during the day (e.g. 13:00 to 16:00). For BIOL-1005-250 we have:
	+ On every Monday, Wednesday, and Friday between May 11, 2015 and June 1, 2015 BIOL-1005-250 is taught in room 2M77 from 13:00 to 16:00
	+ On every Tuesday and Thursday between June 3, 2015 and July 15, 2015 BIOL-1005-250 is taught in room 1RC014 from 13:00 to 15:00.

Rooms are identified as a room number on a floor within a building. Each room has a capacity (maximum number of persons who can be present at one time).

For each floor the system must store the number of rooms on the floor.

Buildings are identified by a code (e.g. D) and by a name (e.g. Duckworth). For each building the system must store the building’s address which comprises a street number and a street name (e.g. 123 Spence Street). Each address is unique.

Appendix: Scheduling Examples for the U of W

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Section | Course title | Credit hours | Instructors | Start Date | End Date | Days | Time | Room |
| BIOL-1005-250 | Concepts in Science | 6.0 | B.BiernackaV.Milosevic-Zdjelar |   |   |   |   |   |
|   |   |   |   | May 11, 2015 | Jun 1, 2015 | MWF | 13:00 - 16:00 | 2M77 |
|   |   |   |   | Jun 3, 2015 | Jul 15, 2015 | TuTh | 13:00 - 15:00 | 1RC014 |
| BIOL-2301-001 | Genetics | 3.0 | D.Rittberg |   |   |   |   |   |
|   |   |   |   | May 4, 2015 | Jun 15, 2015 | MTuTh | 10:30 - 12:20 | 2C13 |
| EDUC-5001-001 | Numeracy in the Early Yrs | 3.0 | J.Ameis |   |   |   |   |   |
|   |   |   |   | May 6, 2015 | May 13, 2015 | W | 18:00 - 21:00 | 2E40 |
|   |   |   |   | May 23, 2015 | May 30, 2015 | Sa | 9:00 - 16:00 | 2E40 |
|   |   |   |   | Jun 13, 2015 | Jun 13, 2015 | Sa | 9:00 - 16:00 | 2E40 |