

Date: \_\_\_\_\_

1) STUDENT → Major

COURSE → Course\_number  
→ Department

SECTION → Course\_number

PREREQUISITE → Course\_number  
Prerequisite\_number

Date: \_\_\_\_\_

2) COURSE → Introduce a new column CourseID of type Integer which will have a unique number assigned for each course.

→ Update datatype of course-number to just 4 numeric digits

Resultant Course RELATION:

Course name	Course-number	Credit hours	Department	CourseID
Intro to Computer Science	1310	4	CS	1
Data Structures	3320	4	CS	2
Discrete Mathematics	2410	3	MATH	3
Database	3380	3	CS	4

This will now only modify one column as required by the question

Date: \_\_\_\_\_

SECTION : → Replace the Course-number column with CourseID. This won't need any updates of CS to CSSE

Resultant SECTION Relation

Section Identifier	CourseID	Semester	Year	Instructor
85	3	Fall	07	King
92	1	Fall	07	Anderson
102	2	Spring	08	Knuth
112	3	Fall	08	Chang
119	1	Fall	08	Anderson
135	4	Fall	08	Stone

PREREQUISITE → Replace Course-number with CourseID

→ Change datatype of Prerequisite-Number to Integer & rename it PrerequisiteID to reflect that it contains course IDs & not numbers

Resultant PREREQUISITE Relation

CourseID	PrerequisiteID
4	2
4	3
2	1



This is a useful solution, because now the change does not need to be made in every table. Updating CS to CSSE in COURSE Relation will be sufficient for all three tables.

3) Meta-Data \*\*Only showing the ones that change\*\*

### RELATIONS

Relation name	No of columns
COURSE	5

### COLUMNS

Column-name	Data-type	Belongs to relation
Course_number	NNNN	COURSE
CourseID	Integer	COURSE
CourseID *	Integer	SECTION
CourseID *	Integer	PREREQUISITE
PrerequisiteID **	Integer	PREREQUISITE

\* CourseID is replacing Course\_number column, which means entry of Course\_number will be deleted from meta-data for COURSE & SECTION relations

\*\* PrerequisiteID is replacing Prerequisite\_number column, which means entry of Prerequisite\_number will be deleted from meta-data for PREREQUISITE relation