University College London

Department of Information Studies
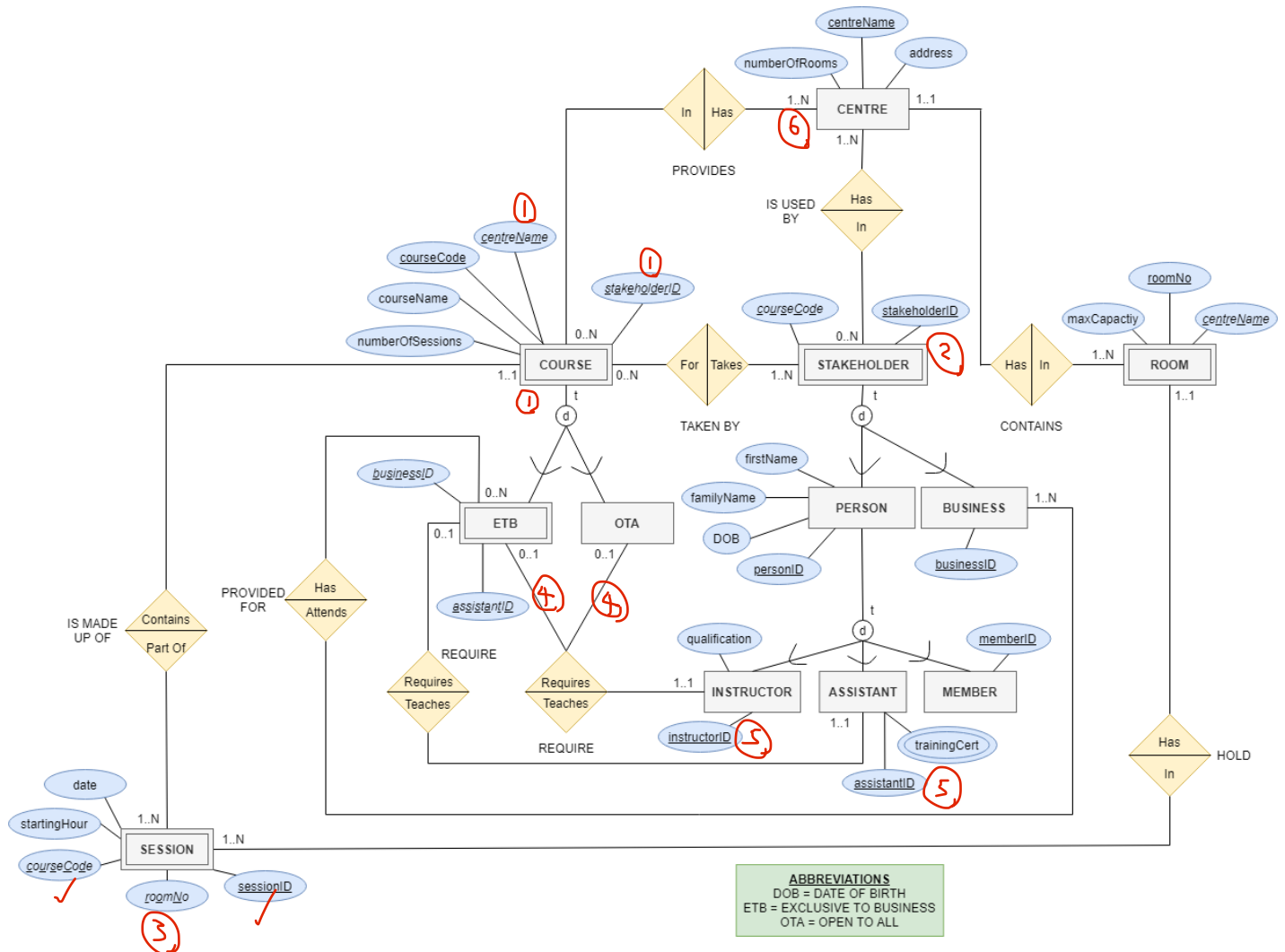
MSc Information Science

Student Number (SRN): 20040340

Module Code and Title: INST0012 Database Theory and Practise

Lecturer Name: Dr Rob Miller

Assignment: Assessment 1

February 19th 2021

EER DIAGRAM (CHEN NOTATION) FOR THE SCENARIO:

SPECIFIC COMENTS (REFER TO NUMBERS ON EER DIAGRAM)

① YOU PUT COURSE AS A WEAK ENTITY (WITH A DOUBLE LINE BORDER) BUT NO RHOMBUSES ARE DOUBLE-BORDERED SO YOU HAVE NOT INDICATED THE OWNING ENTITY/ENTITIES. I THINK YOU MEAN CENTRE AND STAKEHOLDER, BUT THIS IS UNNECESSARY AS A COURSE CAN BE UNIQUELY IDENTIFIED BY THE COURSE CODE ALONE – NO FOREIGN KEYS ARE NEEDED.

② THE "STAKEHOLDER" ENTITY TYPE IS UNNECESSARY AND WOULD BE BETTER REMOVED. INSTEAD, HAVE THE "TAKEN BY" RELATIONSHIP TYPE BETWEEN "PERSON" AND "COURSE", AND HAVE A "WORKS FOR" RELATIONSHIP TYPE BETWEEN "PERSON" AND "BUSINESS"

2

ASSUMPTIONS:

- Each instructor can only instruct one course *OK, BUT I'M NOT SURE WHY*
- Each assistant can only assist one course *YOU MADE THESE ASSUMPTIONS.*
- People cannot be an instructor and an assistant at the same time (and vice versa) *REASONABLE*
- People cannot be a member and a trainer/assistant at the same time (and vice versa) *REASONABLE*
- Stakeholders can register for multiple courses *REASONABLE*.

CONSTRAINTS OF SCENARIO:

The scenario has resulted in a constrained database conceptual model. As a result, some elements need to be monitored on the application level:

- Although starting hour, centre and room number are recorded, there is no way of stopping different course sessions being held in the same centre, the same room, at the same time. Therefore, there needs to be a check for clashes when there are sessions of this nature arise. ✓
- The schema is not designed to record the centre at which a stakeholder registered their membership. This will have to be monitored on the application level. *OK — BUT NOT SURE WHY?*
- The model cannot model temporal constraints (e.g. instructor must teach three courses a month, members can only take one course per centre). ✓

COMMENTS:

- In *word.io* there is no option to do a perfect dotted line under text. Therefore for my foreign keys (attributes) for a weak entity, I underlined each second letter, to create the effect of a dotted underline. The text was also in italics. *THIS FINE — NO PROBLEM*
- *Grey rectangles* are representing entities, *Yellow diamonds* are representing the relationship between entities, and *Blue ovals* are representing the attributes of entities. ✓

SPECIFIC COMMENTS / CONTINUED

③ THE "ROOM NO" ATTRIBUTE IS NOT NECESSARY BECAUSE YOU ALREADY HAVE THE "HOLD" RELATIONSHIP TYPE FOR THIS INFORMATION.

④ THESE TWO LINES ARE DRAWN IN THE WRONG PLACE. THIS "TEACHES" RELATIONSHIP TYPE SHOULD GO FROM "INSTRUCTOR" TO "COURSE" (IT'S A BINARY RELATIONSHIP TYPE)

⑤ YOU DON'T NEED "INSTRUCTOR ID" OR "ASSISTANT ID" BECAUSE THESE ENTITY TYPES ALREADY INHERIT "PERSON ID" AS A KEY.

⑥ THE CARDINALITY HERE SHOULD BE 1..1 BECAUSE A COURSE IS HELD IN ONE CENTRE ONLY

(SEE BELOW FOR GENERAL COMMENT)

INST0012 Database Theory and Practice - Assessed Exercise 1 Feedback Sheet - 2020/21 Session

Student number: 20040340

Mark out of 50: 32

Percentage: 64%

Comments: (GENERAL)

ON THE WHOLE YOU HAVE CORRECTLY IDENTIFIED A
SENSIBLE SET OF ENTITY, RELATIONSHIP AND ATTRIBUTE
TYPES FOR THE GIVEN SCENARIO AND SO HAVE BEEN ABLE TO
CAPTURE A GOOD RANGE OF APPROPRIATE INFORMATION,
ALBEIT WITH SOME INACCURACIES. THE INCLUSION OF
A "STAKEHOLDER" ENTITY DID OVER-COMPLICATE THINGS AND SO
CAUSE A BIT OF A MUDDLE IN THAT PART OF THE DIAGRAM, BUT
OTHERWISE YOU HAVE DEMONSTRATED A GOOD UNDERSTANDING OF
CONCEPTUAL MODELLING WITH EER DIAGRAMS