**Chapter 3 Triggers**

CREATE TABLE Teaching(
    ProfId INTEGER,
    CrsCode CHAR(6),
    Semester CHAR(6),
    PRIMARY KEY (CrsCode,Semester)
)

FOREIGN KEY ProfId REFERENCES Professor(Id)
ON DELETE NO ACTION
ON UPDATE CASCADE

FOREIGN KEY CrsCode REFERENCES Course(CrsCode)
ON DELETE SET NULL
ON UPDATE CASCADE

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**Triggers (Chapter 7)**

ON `<event>` WHEN `<cond>` DO `<action>`

**Activation**

Triggering event requested

**Consideration**

After activation, when cond evaluated

- *immed.*
  - e.g. nuclear power plant (real-time monitoring)

- *deferred*
  - e.g. student registration system (student trying to register for a course)

**Execution**

If consideration deferred, then so is execution; if consideration immed, then two options: deferred or immed.

- *after-trigger*
  - extension of application logic (AOP) e.g. limit raises to 5%

- *before-trigger*
  - can't modify DB; maintain integrity constraints; e.g. rollback course reg. txn if room capacity exceeded

- *instead-of-trigger*
  - e.g. maintain Works_In view when tuple deleted by setting P.DeptId to NULL

**Trigger granularity**

row- vs. statement-level

- e.g. for each row inserted in Transcript, make sure room capacity not exceeded for course in question

- e.g. after DELETE, UPDATE stmt of CrsCode, Sem on Transcript, delete all tuples in view IdleTeaching from the Teaching table

before- vs. after-trigger: depends on when cond. evaluated WRT execution of event