Metropolitan State University of Denver - Major in Computer Science, B.S.
Domain Model Definition

This domain description and definitions within are not exhaustive and are merely a subset which may have immediate influence on aspects of the CS Degree Advisor and Planning Assistant software product. Several areas may need to be defined in greater detail as necessary at a later date.

Description

The University (Metropolitan State University of Denver) offers a degree program in computer science which is compliant with the Computing Curricula 2001, prescribed by a joint taskforce of the IEEE and ACM. The University's computer science degree program requires a specific Mathematics minor. Completion of the program prepares students for a wide range of computer science disciplines and continued education with a supporting background in Mathematics.

The following observations have been made as a student of the MSUD computer science degree program as well as in studying documentation surrounding the MSUD computer science degree program.

The computer science degree program has many requirements which must be fulfilled prior to the program being completed. For example, these can be requirements of credits, GPA, number of upper-division credits, number of credits taken at the university, or a specific minor.

Several degree program catalogs are issued as time progresses. Each of these catalogs consists of degree program requirements. The following information is based on a catalog issued in the Fall 2013 term (a term being a specific semester of a specific year, a semester being a time period in which a course is conducted, and a year being a calendar year).

The CS degree program requires a minimum total of 120 credit hours. This credit hour requirement is a sum of credit hour requirements in the areas of specific Computer Science Courses (54 credit hours), Mathematics and Science courses (30 credit hours, with caveats), Ancillary Courses (9-10 credit hours), and General Studies & Additional Courses (approx. 27 credit hours).

Each of the preceding credit hour requirements in given areas have finer grain requirements.

The computer science courses requirements require a specific set of computer science courses. Of the computer science courses taken, a certain number (16 credit hours) must be

upper division (Course # >= 3000). Many courses have requirements which must be fulfilled prior to them being taken. These may include dependencies on other courses. Some of these courses require completion of a number of upper-division CS credits. These upper-division credits may consist of credits from CS elective courses.

18 credits of the required 30 Mathematics and Science credits, are dedicated to a specific Mathematics minor. That is, a specific set of five Mathematics courses must be completed. The remaining 12 required Mathematics and Science credits consist of 4-10 required Science credits. Any credits remaining of the 30 after the Mathematics minor and the Science credit requirements have been fulfilled can be directed at courses from a specific set of Mathematics courses.

The required ancillary course credits consist of courses in public speaking (SPE 1010), technical writing (COM 2610), and ethics (PHI 3370 or CS 1030).

The general studies and additional course requirements consists of at least one course fulfilling multi-cultural credit requirements.

Additionally, all courses in the degree must be completed with a grade >= to “C” (2.000 GPA).

Certain courses have a requirement of the student meeting with their degree advisor prior to registering for the course.

Many courses are offered each semester, but some are offered on a course rotation. The Math & Computer Science department publishes a two year course rotation which describes which courses will be offered on which terms over a two-year period.

CS elective courses can only be offered for a certain number of semesters before they are either made into degree program requirements, or are retired permanently.

Definitions of Keywords in Domain

Actors

- Advisor - An educational employee whose role is to assist students in planning their upcoming courses.
- Student - A person who declares a degree and *plans* courses in the future to fulfill said degree.

Entities

- **Plan** - A plan is a set of courses to be taken by a student over several semesters and years.
    - **Semester** - A block of time in which a course can be taken by a student (ex. ‘Fall’, ‘Spring’, ‘Summer’, ‘Winterim’, ‘Maymester’)

    - **Year** - A calendar year that may contain all five of the above listed semesters.
- **Degree Program** - A full curriculum for study of a particular field offered by an institution, completion of which results in an institution issued certificate of completion. A degree program consists of a set of courses *(defined by curric, not series)*. A degree program can be of either 'major' or 'minor' type. A 'major' degree program consists of field-of-study specific courses as wells as courses generalized around a core "basic knowledge" curriculum. A 'minor' degree consists of courses of field-of-study specific courses only.
    - Course Requirements - Many courses which must be completed before a degree certificate is issued.
    - Total credit hours - The total credit hours required to earn the degree.
    - Core credit hours - The total 'core curriculum' hours. These are credits which are common to several degrees.
- **Course** - A course is an educational offering whose purpose is to purvey some field-specific knowledge to students. Courses are offered by educational institutions over the period of a semester.
    - Name - The name of the course.
    - Subject - The subject area (ex. 'Computer Science', 'English')
    - Number - The course call number (ex. 'CS-101')
    - Credit hours - The number of credit hours which are earned upon completion of the course.
    - Rotation - Semesters in which the course is offered. This may be regular such as every Fall and Spring, or on an interval, such as every other Fall.
- **Section** - Particular offering of a course in a semester

Terminology Used in Domain Reference Documentation

The following is terminology observed in the orange sheet distributed by the Math & Computer Science department which specifies the degree program requirements. Language and details were taken from an 'Effective Fall 2013' orange curriculum sheet:

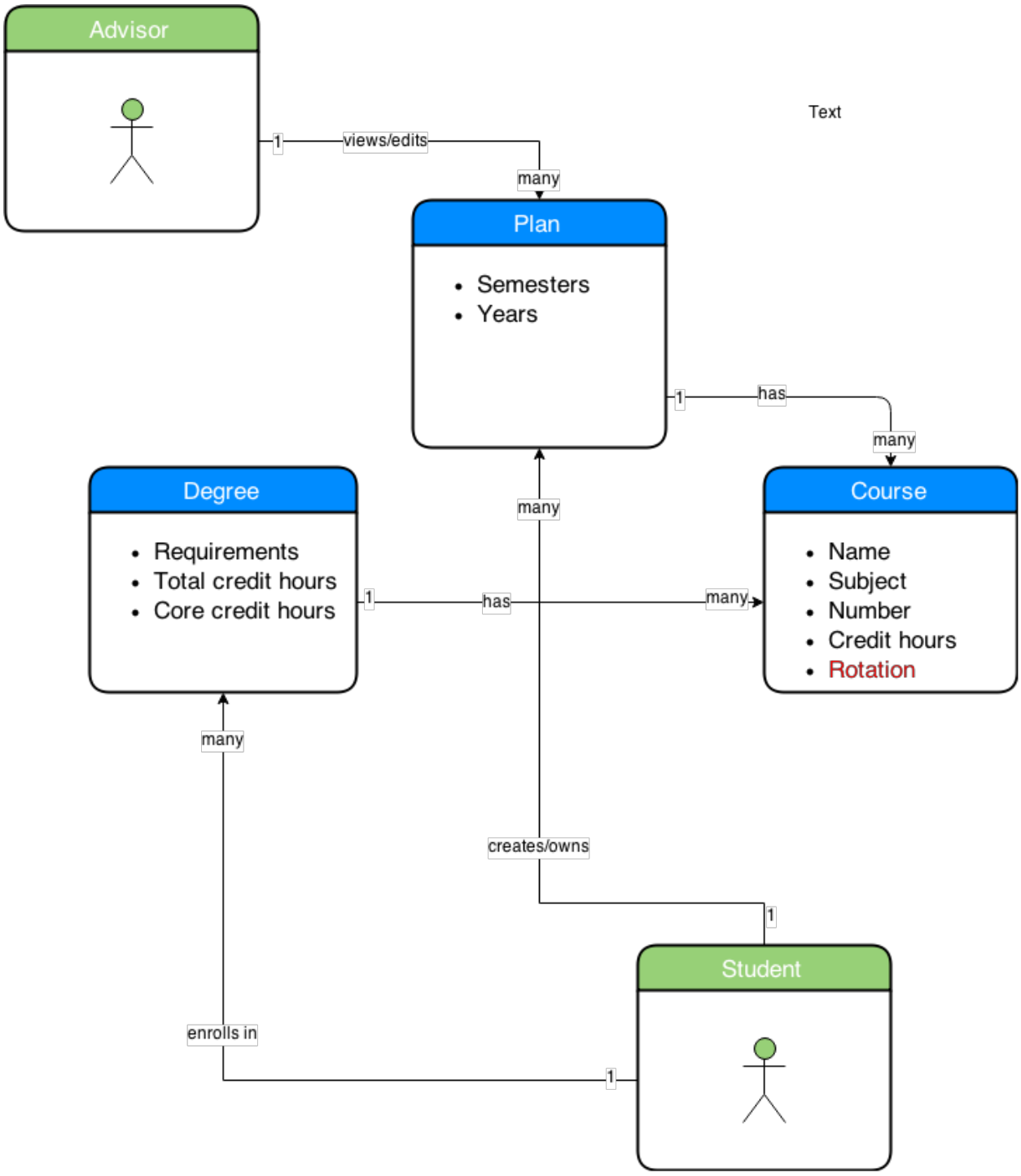
- Degree Program
    - Total Minimum Credit Hours for the B.S. in Computer Science: 120 credit hours
- Mathematics and Computer Science Department
- Semester Hours (referencing credit hours)
- Required Computer Science Courses: 54 credits
    - University-required Senior Experience course (4260)
    - Upper Division Electives
- Mathematics and Science Requirements: 30 credits
    - Required Mathematics Minor: 18 credits
        - Math requirement substitutions
            - MTH 3140 or MTH 3130 may be substituted for MTH 2140

            - MTH 3100 may be substituted for MTH 3170 with Departmental approval
    - Required Science Courses: 4 - 10 credits
        - A completed sequence selected from BIO, CHE, or PHY
    - Additional hours Math and Science requirement
        - Student can select from a list of additional courses to fulfill the 30 credits Math and Science requirement
- Required Ancillary Courses
    - SPE 1010, COM 2610, (PHI 3370 or CS 1030)
- General Studies & Additional Course Requirements
    - Includes a 3 credit Multicultural requirement

The following is terminology observed in a CAPP report of a current MSUD computer science student. Language and requirement details taken from a Catalog Term Fall 2012 CAPP Report:

- In-Progress Courses - Courses currently in-progress by the student.
    - Term - A concatenation of Semester and Year (ex. Sp '15)
    - Subject - The subject area of study (ex. CS, MTH, GEL)
    - Course - The course number (ex. 4260, 1510, 101)
    - Credits - Number of credit hours assigned to a course (ex. 4.000, 1.000)
    - Title - The 'human-readable' title of the course (ex. 'Software Engineering Practices')
- Program Summary - A summary of the degree program
    - Comment - An optional comment. (ex. "The Computer Science program requires a specific Mathematics minor. See catalog.")
    - Catalog Term - The Term of the Catolog used to define the degree program (ex. Fall 2012)
    - Program - Declared major and pursued degree (ex. Computer Science - BS)
    - Print Date - Date CAPP report was printed (ex. Feb 05, 2015)
    - Majors - Declared majors (ex. Computer Science)
    - Departments - Departments offering degree program (ex. Math and Computer Science
    - Minors - (ex. Mathematics)
    - Concentrations - (definition unknown)
- Total Credits - The total credits required for a degree or completed by a student. (120.000 required)
- Minimum MSU Denver GPA - The minimum GPA required to be maintained by the student to complete the degree program. (2.00 GPA required)
- Maximum MSU Denver Non-Classroom Credits - (Definition unknown) (60.000 credits required)
- MSU Denver Resident Credits - The number of credits required of the student whcih are taken at MSU Denver (30.000 credits required)

- Major Resident Credits - The number of major specific credits required of the student which are taken at MSU Denver (12.000 credits required)
- Minimum Resident Credits Out of Last 12 - The final 12 credits completed by student must be taken at MSU Denver? (Definition assumed) (12.000 credits required)
- Maximum Transfer Credits - The maximum number of credits a transfer student can transfer in from their former university (90.000 credits required)
- Computer Science Major Total Credits - The number of required computer science credits (50.000 credits required)
- Computer Science Major Area GPA - The minimum required GPA for computer science courses taken by a student (2.000 GPA required)
- CSI Major 8 UD Resi Cr. Rqmnt - Definition unknown (8.000 ? required)
- MTH Minor Rqd for CSI - Definition unknown (no stated requirement)
- MTH Minor for CSI 3 UDResi Rqt - Definition unknown (3.000 ? required)
- CSI Major Math & Science Rqmnt Total Credits - Definition unknown (40.000 credits required)
- CSI Major Ancillary Courses Total Credits - Definition unknown (no stated requirement)
- General Degree Requirements - Definition unknown (no stated requirements)
- General Elective Credit - Definition unknown (no stated requirements)
- Upper Division Requirement - The required number of upper division (Course # >= 3000?) credits (40.000 credits required)
- Multicultural Requirement - The required number of Multicultural credits. (2.000 credits required)
- Senior Experience Requirement - The required number of senior experience credits (ex. CS 4260) (3.000 credits required)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