

Mathematical Sciences Division Curriculum Committee
Agenda
March 3, 2015

Updates:

MATH

MATH 210

- Adding another unit & C-ID compliance - Jackie Sims

MATH 190

- Returned to update Entry Skills, may have been taken care of by now.

MATH 33, 40 & 67

- All are currently being reviewed at the CCC level.

ENGINEERING:

- ENGR-1 – Milan Georgevich
- ENGR 10 – Circuits – Jill Evensizer

COMPUTER SCIENCE:

- CS 16 – Ralph Taylor
- CS 12 – Massoud Ghyam
- CS 1 – Massoud Ghyam – C-ID issues may be delaying this course review
- CS ??? - Python (the gaming software)

SUMMER MATH ACADEMY:

- SMA 12 and 23/40 are in process
- Malinni Roeun is working on the New Course Rationale
- Once we have everything figured out for these two courses it will be easy to enter the info for the other courses.
- Junko Forbes has volunteered to enter other courses into Curricunet

CARNEGIE UNIT:

- Still waiting to hear how the math courses compare with the Carnegie unit.

EL CAMINO COLLEGE
Mathematical Sciences
Division Curriculum Committee
March 3, 2015

Present: Sue Bickford, Carl Broderick, Anna Hockman, Milan Georgevich, Bob Horvath, Lars Kjeseth,
Gayathri Manikandan, Trudy Meyer, Ambika Silva, Jackie Sims, Satish Singhal

Math 210

- The CI-D is for community college transfers to CSU's.
- The Chancellor's Office distributed a memo stating that the deadline for CI-D compliance has been extended.
- J. Sims understanding is that we have to match and be compliant with the Mathematics Transfer Model Curriculum packet.
- If Math 210 is changed, it could risk UC transferability.
- A department vote will be necessary to determine whether or not compliance with the Math 210 CI-D is necessary.
- The committee voted to keep Math 210 as it is and not to make any changes to ensure CI-D compliance; however, it should still be listed on the transfer degree. We can state that our Math 210 does not match either discrete courses listed in the C-IDs and it articulates with UC's. Essentially, the vote is to go back to the original Math 210 without adding a unit or matching it with the Computer Science discrete structure.
- L. Kjeseth made a motion. M. Georgevich seconds the motion.
- In order for this to pass through Curriculum Committee, a Math Division representative will have to provide an explanation.

Math 190

- Entry Skills have been updated. G. Fry will resubmit this.

Math 33, 40 & 67

- A. Hockman stated that there will not be any issues with Math 33, 40 and 67. (Removed Math 25 as a prerequisite)

Engineering

- ENGR-1
 - Engineering 1 is a human development course established to stimulate interest in engineering. There are no prerequisites and the class consists of essay questions and multiple choice tests.
 - The course discusses engineering as a profession, what it takes to be an engineer, how to study, how to make use of office hours, etc.

- Since the last time the course was reviewed, the textbook has changed considerably. The committee should look at this for review.
- The course will not be cross listed to other divisions. It will be strictly an engineering class. However, without making the change to have it cross listed, there is a risk of the class being cancelled due to not being able to find an instructor that meets the minimum qualifications for teaching Engineering.
- It has already been submitted to the DCC Technical Review Committee. It must be DCC approved and submitted by 4/3/15.
- ENGR 10
 - J. Evensizer is working on this. This is in the beginning phase and may not be completed this year. J. Evensizer should contact the Physics Department.

Computer Science

- M. Ghyam will create the Python course and give S. Singhal the first version.

Summer Math Academy

- The Summer Math Academy (SMA) must be entered into CurricUNET.
- SMA doesn't have SLOs or objectives.
- The SMA information for Math 12, 23 and 40 SMA has been entered.
- M. Roeun is working on a proposal for a new course.
- The Math department would like to make SMA part of the math curriculum. It is paid for through a grant and is a non-credit course.
- M. Roeun is tracking students' progress after completion.
- Once the course rationale is in place, J. Forbes will enter the other courses into CurricUNET.
- L. Kjeseth will inquire whether Math 73/80 and Math 180 are allowable for noncredit.

Carnegie Unit

- Mark Lipe will provide the Math Department with a list of ECC courses that have different units than the Carnegie Unit. Most of the math classes are in line with the Carnegie Unit, but there may be issues with Math 12, 23 and 37.

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**Transfer Model Curriculum
Updated 12/4/12**

CCC Major: *Computer Science*

CSU Major or Majors: *Computer Science*

Total units: 28
(all units indicated are minimum semester units)

Degree Type : AS-T X

“Core” Courses –
Minimum Units 28 units *(7 units double count as GE credit)*

Title (typical units)	C-ID Designation	Rationale
Programming Concepts & Methodology I (CS1) Min. units 3	COMP 122	ACM/IEEE recommendation for a four semester introductory sequence
Programming Concepts & Methodology II (CS2) Min. units 3	COMP 132	
Computer Architecture & Organization Min. units 3	COMP 142	
Discrete Structures Min. units 3	COMP 152	
Single Variable Calculus I and II – Early Transcendentals (min. 8 units) or Single Variable Calculus I and II – Late Transcendentals (min. 8 units) or Single Variable Calculus Sequence (min. 8 units)	MATH 210 and 220 or MATH 211 and 221 or MATH 900S	Double count for GE B4
Calculus-Based Physics for Scientists and Engineers: A Min. Units 4	PHYS 205	Double count for GE B1 and B3
Calculus-Based Physics for Scientists and Engineers: B Min. Units 4	PHYS 210	

Summary of Feedback Including Issues and Concerns - Items of concern from the vetting process that were addressed included: Requirement of Physics and Calculus. The results were that after reviewing the curricular needs students will definitely need the Physics and Calculus to be successful. There was some concern whether this TMC followed the industry standards and after discussion it was agreed that it in fact mirrored ACM standard.

The requirement for discrete structures was a concern for the community colleges since many of them do not offer this course, but the CSUs said that they needed to have this to fulfill their courses and the community colleges stated that they might need to either write new courses or refer students to other community colleges for fulfillment of this requirement.

The Mathematics Transfer Model Curriculum
 Approved March 24, 2011 – Updated January 4, 2013

CCC Major or Area of Emphasis: Mathematics

CSU Major or Majors: Mathematics

Degree Type: AS-T

Total Units: 18 units minimum

Required Core Courses (minimum of 12 units, all courses are universally required)

Title	Min Units	C-ID Designation
Single Variable Calculus I – Early Transcendentals Or Single Variable Calculus I – Late Transcendentals	4	Math 210 or Math 211
Single Variable Calculus II – Early Transcendentals Or Single Variable Calculus II – Late Transcendentals	4	Math 220 or Math 221
Multivariable Calculus	4	Math 230

OR

Single Variable Calculus Sequence (2 sem/3 quarters) Or Single Variable Calculus I – Early Transcendentals And Single Variable Calculus II – Early Transcendentals Or Single Variable Calculus I – Late Transcendentals And Single Variable Calculus II – Late Transcendentals	≥8	Math 900S or Math 210 and Math 220 or Math 211 and Math 221
Multivariable Calculus	4	Math 230

OR

Single Variable and Multivariable Calculus Sequence (3 sem/4 quarters)	≥12	
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Choose a minimum of 6 units from below with at least 3 units from Group A.

Group A Provides Depth of understanding in subject major

Ordinary Differential Equations	3	Math 240
Introduction to Linear Algebra	3	Math 250
OR		
Differential Equations and Linear Algebra	5	Math 910S

Group B Expands application of discipline

Discrete Math	3	Math 160
Calculus-Based Physics for Scientists and Engineers: A (Any course articulated as preparation for the physics major at a CSU)	4	Physics 205
Mathematical Computing Systems	1	See sample.
Computer Programming	3	Any programming course that is articulated preparation for the math major at a CSU.
Proof	3	See sample.
Introduction to Statistics	3	Math 110

NOTE: All units are based on the semester and indicated minimum units. While 3 units are required from Group A, no units are required from Group B. The major must be a minimum of 18 semester units.

Sample Course Descriptions:

Group B

Mathematical Computing Systems

Math 7 Mathematica (2)

Prerequisite: CAN MATH 18 (First Semester Single Variable Calculus)

Introduction to the computer software package Mathematica for math, science and engineering majors. Mathematica will be used in solving selected problems in algebra, trigonometry, calculus, vector and matrix analysis, data manipulation and presentation, complex analysis, etc., with emphasis on Mathematica's superior 2- and 3-dimensional graphical capability. 18 hours lecture and 54 hours computer laboratory.

(Riverside City College)

Proof

MATH 240. Introduction to Mathematical Thought (3).

Prerequisite: First Semester Single Variable Calculus or Calculus for Biological Sciences and Natural Resources or Calculus for Business and Economics.

Mathematical reasoning, writing, and proofs; sets, functions, topics in discrete mathematics, problem formulation, problem solving.

(Humboldt State)

Summary:

The Mathematics Transfer Model Curriculum (TMC) was developed in response to SB 1440 using a process implemented by the Academic Senate for California Community Colleges. The Math TMC was initially developed by faculty at the October 2010 DIG (Discipline Input Group) meetings. Both the North and the South groups readily agreed upon the required core courses. A guiding principle for those courses included in Groups A and B of the TMC was the likelihood that all California Community Colleges (CCC's) offer at least one course in Group A and if necessary, at least one course in the Group B. Enough choices were included so that it is believed that each CCC could offer a transfer degree in the Mathematics major. After the DIG meeting the FDRG (Faculty Discipline Review Group) met and created a draft of the TMC. The TMC was posted on the Academic Senate website and comments were requested during the period of November to December 1, 2010. After the vetting period, the FDRG reviewed the comments and noted that even though there were over 300 Math faculty who reviewed the TMC, there was not enough input from the CSU faculty. Moreover, it was apparent from the comments that there was a lack of understanding of the implementation of the TMC. The FDRG decided to have a second round of vetting where an overview of the TMC process and a re-vamping of the questions were needed. The second round of vetting was conducted in January and February of 2011. In addition, the designated CSU Lead relayed the draft to the Chairs of CSU Departments of Mathematics and collected this crucial feedback. After the vetting, the FDRG again reviewed the submitted comments.

The FDRG received comments from the majority of the Chairs from the CSU and CC faculty. Below are some of the concerns and the FDRG's responses.

Concern: Not all their math degrees can be completed in 60 units

Response: Most CSUs do offer at least one math degree that can be completed in 60 units

Concern: One course in Group A is upper-division at certain CSU

Response: Their local CC Associate degree in Math Transfer would not include this course. The CC would choose an acceptable course from Group B

Alternate Response The student takes the course at CCC and then takes a different upper division course at CSU.

Concern: Faculty members from some CSUs believe the students should take all of Group A at CSU.

Response: Chairs at their corresponding CSU replied that the TMC is acceptable.

Concern: One CSU would require 9 units from Group A and B

Response: The course that could be included is Physics. This course would fulfill the GE requirement for Scientific Inquiry and Quantitative Reasoning.

Concern: Some of our courses have a higher unit value than those presented in the TMC.

Response: The additional math units could be "double counted". That is, a math course would also fulfill the GE requirement for Quantitative Reasoning.

The Mathematics TMC was unchanged following the vetting period. Many of the comments and concerns are readily addressed with a clear explanation of reasoning behind the courses selected for the TMC. Other concerns suggested a lack of understanding of the implementation of the TMC; a failure to understand that CCCs were not obligated to develop degrees with all indicated course offerings and/or that a given CCC that seeks to develop a TMC-aligned degree could opt to be as restrictive or permissive as they choose within the parameters of the TMC. The FDRG also discussed that the fact that while the TMC will offer a "fast track" option for degree completion and transfer, other degree and non-degree options are still available for CCC students, including CCCS that additionally continue to offer an existing degree in math with more requirements/units than the transfer degree.

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January 28, 2015

AA 15-04
VIA E-MAIL

TO: Chief Instructional Officers
Chief Student Services Officers
Academic Senate Presidents
Curriculum Chairs
Articulation Officers

FROM: Pamela D. Walker
Vice Chancellor, Academic Affairs

SUBJECT: **Update on C-ID Verification for Associate Degrees for Transfer (ADT)**

Last Spring, California Community Colleges Chancellor's Office (CCCCO) extended the C-ID verification timeline to allow more time for the C-ID approval process to catch up with the demand. In light of the challenges that continue to hinder the review and approval of courses in C-ID, **the CCCCCO will not be deactivating previously approved ADTs** that include courses without a C-ID status of "Approved" by **June 30, 2015**. California Community Colleges (CCCs) may continue to submit ADT proposals where courses with C-ID descriptors in the Required Core and List A reflect any of the following C-ID statuses: Approved, Conditional Approval, Submitted, In-Progress, or Resubmitted. However, **effective July 1, 2015**, all ADT proposals (new, substantial and nonsubstantial change), submitted to the CCCCCO for review must:

- 1) Have a C-ID status of "Approved" for **all** courses entered on a TMC Template where a C-ID descriptor is listed. That is, any course listed on a TMC Template next to a C-ID descriptor in the Required Core, List A, List B, or List C sections, must appear in C-ID.net with an "Approved" status for that descriptor. One exception is that if the TMC Template indicates that an ASSIST Articulation Agreement by Major (AAM) is accepted in addition to the C-ID descriptor, then a valid AAM will be accepted in lieu of the "Approved" C-ID status, and
- 2) Include all the correct required attachments (Narrative, Template, Course Outline of Records, if applicable: ASSIST Reports, Advisory Board Minutes, Labor Market information and all attachments must include the required information).

Please send all inquiries to curriculum@cccco.edu.

cc: Denise Nolan, Vice Chancellor of Student Services and Special Programs
Cris McCullough, Dean of Curriculum and Instruction
Academic Affairs Division Staff
David Morse, President of Academic Senate for California Community Colleges (ASCCC)
System Advisory Committee on Curriculum (SACC)