

The Pitfalls of Precalculus: by David Bressoud (includes reference to study by Sonnert and Sadler)

<http://launchings.blogspot.com/2014/10/the-pitfalls-of-prec calculus.html>

Jeff Suzuki College Algebra talk (history from mid-19th century)

<https://sites.google.com/site/jeffsuzukiproject/presentations>

Zal Usiskan “Cleaning Up After the Common Core” <https://www.youtube.com/watch?v=Lv6y8qbhJTU>

Keynote at AMATYC 2014 conference (starts at 25:00 in this recording, running time ~ 35 minutes after that)

MAA Calculus Concept Readiness (Carlson, Madison, et al) <http://arxiv.org/ftp/arxiv/papers/1010/1010.2719.pdf>

MAA CUPM 2015 report See especially: Articulation & Placement; Courses, in particular: Calculus; Modeling

http://www2.kenyon.edu/Depts/Math/schumacherc/public_html/Professional/CUPM/2015Guide/CUPMDraft.html

Conference Board of Mathematical Sciences: Forum 5 “The First Two Years of College Math”

<http://www.cbmsweb.org/Forum5/index.htm>

National Academy Press: Mathematical Sciences in 2025 <http://www.nap.edu/catalog/15269/the-mathematical-sciences-in-2025>

Carlson et al article “Applying Covariational Reasoning While Modeling Dynamic Events” <https://math.la.asu.edu/~carlson/covarjrme.pdf>

Dana Center Stem Path <http://www.utdanacenter.org/higher-education/new-mathways-project/new-mathways-project-curricular-materials/stem-prep-pathway-i-and-ii/>

College Board Survey on Precalculus courses (high school and college) http://www.collegeboard.com/prod_downloads/highered/clep/clep-prec calculus_curriculum-survey.pdf

Three Reform models for Developmental Mathematics (strongly related to each other):

AMATYC New Life: <http://dm-live.wikispaces.com/> and <http://www.devmathrevival.net/>

Carnegie Foundation Pathways (Statway™ and Quantway™): <http://www.carnegiefoundation.org/in-action/pathways-improvement-communities/>

Dana Center New Mathways: <http://www.utdanacenter.org/higher-education/new-mathways-project/>

Michigan paths to calculus I

Coll alg & trig one semester	Coll alg, coll trig two semesters	Precalculus one semester	Precalc two sem	Coll Alg, Precalc two semesters	Trig, precalc two semesters
MSU; OCC	Macomb; MSU; CMU; OCC; EMU; MTU; FSU; Mott; Monroe Cty; GVSU; Schoolcraft; Montcalm; (Muskegon)	Macomb; GRCC; WMU; LCC; CMU; Henry Ford; UM-D; EMU; MTU; Mott; Oakland; Monroe Cty; Montcalm	LCC	KVCC; SVSU; Washtenaw; Jackson; NMU; UM-F	Delta; NMU; Kellogg; St Clair;
2	12 plus 1	13	1	6	4

Each of these 39 courses was checked for incoming course equivalence in transfer at the other 26 colleges. Details available at Rotman’s Transfer Study in Michigan [pre-calculus courses plus finite math] on http://www.devmathrevival.net/?page_id=2144

Summary of transfer (in Michigan) for pre-calculus: [each course is a Calculus I prerequisite]

Checked*	OK Transfer**	Rate Transfer OK	Institution	Course Title
22	22	100.0%	Grand Rapids CC	Precalculus
21	21	100.0%	Henry Ford College	Precalculus
17	17	100.0%	Oakland University	Precalculus
19	19	100.0%	Washtenaw CC	Precalculus
20	19	95.0%	Western Michigan Univ	Precalculus Mathematics
19	18	94.7%	Monroe County CC	Precalculus
13	12	92.3%	Mott CC	Pre-Calculus
22	20	90.9%	Schookcraft College	Precalculus With Trig
20	18	90.0%	Central Michigan Univ	Pre-Calculus Mathematics
19	17	89.5%	Macomb CC	Precalculus
18	16	88.9%	Kalamazoo Valley CC	Precalculus/Trig
17	15	88.2%	Univ Michigan - Dearbor	Pre-Calculus
23	20	87.0%	Michigan State University	Trigonometry
22	19	86.4%	Grand Valley State	Trigonometry
21	18	85.7%	Lansing CC	Accelerated Precalculus
7	6	85.7%	Montcalm CC	Precalculus
14	12	85.7%	Northern Michigan Univ	Precalculus
20	17	85.0%	St Clair County CC	Pre-Calculus
19	16	84.2%	Delta College	Pre-Calculus
18	15	83.3%	Kellogg CC	Preparation for Calculus
18	15	83.3%	UM - Flint	Pre-calculus mathematics
23	19	82.6%	Oakland CC	Trigonometry
17	14	82.4%	Michigan Tech Univ	Precalculus
16	13	81.3%	Mott CC	Trigonometry
20	16	80.0%	Macomb CC	College Trigonometry
19	15	78.9%	Eastern Mich Univ	Plane Trigonometry
19	15	78.9%	Muskegon CC	Trigonometric Functions with Coor
19	15	78.9%	Oakland CC	College Algebra and Trig
25	19	76.0%	Jackson College	Pre-Calculus
16	12	75.0%	Montcalm CC	College Alg
15	11	73.3%	Eastern Mich Univ	Topics in Precalculus Mathematics
22	16	72.7%	Michigan State University	College Algebra and Trig
21	15	71.4%	Central Michigan Univ	College Algebra
21	15	71.4%	Ferris State Univ	Adv Algebra - Analytical Trig
21	13	61.9%	Lansing CC	Precalculus II
17	10	58.8%	Michigan Tech Univ	College Algebra II with Trig
17	10	58.8%	Monroe County CC	Trig & Analytical Geom
18	10	55.6%	Ferris State Univ	Algebra - Analytical Trig
16	7	43.8%	Saginaw Valley State Un	Intro Math Analysis

* Transfer **Checked** means data available on credit granted at other Michigan institutions (of the 26 possible).

** **OK transfer** means that the course transfers equivalent to a calculus I prerequisite at the other institutions.
[All courses are calculus I prerequisites at the originating institution listed.]