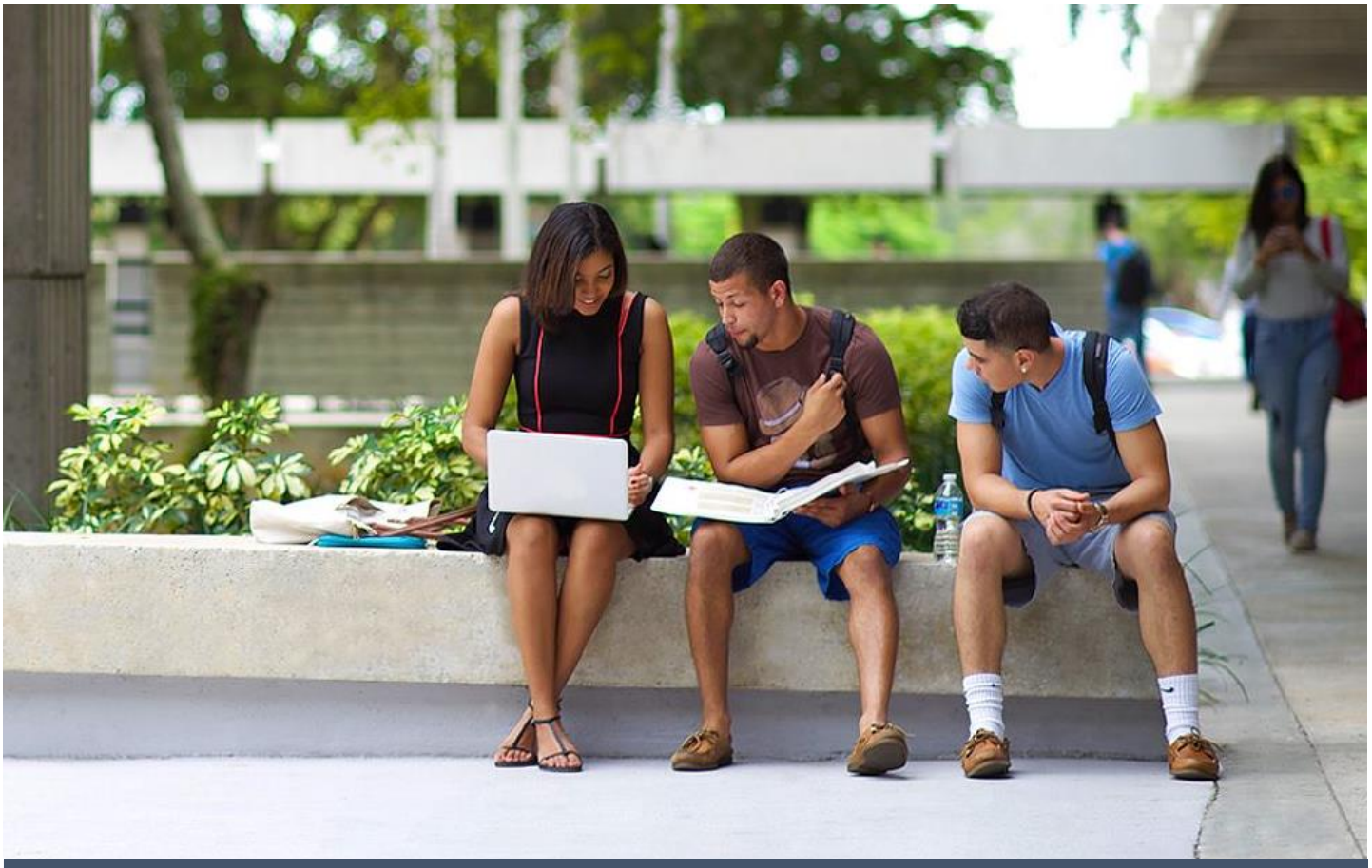

Mathematics Pathways Committee Handbook

September 2021

Florida Department of Education fldoe.org

The Florida College System

Student Success Center — An initiative of The Florida College System

State University System of Florida

MATHEMATICS PATHWAYS COMMITTEE HANDBOOK

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INTRODUCTION

Background on the Florida Mathematics Re-Design Initiative

In 2018, the Florida Student Success Center established three inter-connected workgroups to identify current challenges in mathematics pathways and develop policy and practice recommendations to improve student achievement across Florida's education systems. The charge of the Florida Mathematics Re-Design workgroups was to explore complex issues surrounding mathematics pathways to prepare high school students for transition into Florida College System (FCS) institutions and Florida College System students for transition into four-year universities. More than 90 mathematics faculty, administrators and key stakeholders from Florida's K-12 system, the FCS and the State University System (SUS) served as members of the workgroups in 2018-19. The recommendations presented below reflect a synthesis of the policy and practice recommendations that emerged.

Recommendation 1: Create common mathematics pathways by aligning mathematics courses to programs, meta-majors and careers in Florida.

Recommendation 2: Use a "multiple measures" model to help improve placement, especially in mathematics.

Recommendation 3: Ensure mathematics prerequisites align with mathematics pathways.

Recommendation 4: Revise the statewide learning outcomes for developmental and gateway mathematics courses and identify essential mathematical processes.

Recommendation 5: Encourage colleges and universities to implement instructional models (such as the co-requisite model) that place students, when appropriate, directly into college-level mathematics courses carrying general education credit.

Recommendation 6: Create recurring opportunities for K-20 stakeholders to promote collaboration to strengthen mathematics pathways for students via standing advisory groups/working groups and "big meetings."

Recommendation 7: Determine the K-12 standards that align with the postsecondary courses identified for each major or meta-major to inform student course selection in high school.

Recommendation 8: Offer professional development opportunities for instructors.

Recommendation 9: Establish on-demand foundational mathematical skills modules for students to access in high school and postsecondary.

Recommendation 10: Increase the availability of advising resources and enlist the help of mathematics faculty, where appropriate.

Recommendation 11: Ensure parents/guardians are informed of how to support and advise high school students into mathematics sequences aligned with the student's college and career pathway.

Recommendation 1 to create common mathematics pathways was one of the most powerful recommendations that emerged from the initiative. This recommendation is supported by research indicating that students need different mathematics skills depending on their programs of study. Many

institutions still use the college algebra pathway as the primary pathway for their students, even if the liberal arts mathematics/statistics pathway may be more appropriate for their degrees. Not all students are well served by traditional algebra-based calculus sequences; in fact, research shows that courses that are meaningful to students increase their engagement, which, in turn, increases their success.

More information about the Florida Mathematics Re-Design Initiative is available at: https://www.floridacollegesystemfoundation.org/fssc-math-redesign.

Senate Bill 366

The work for the Florida Mathematics Re-Design initiative helped to inform Senate Bill 366 (Appendix A), which passed during the 2021 legislative session. The bill states:

> *To facilitate seamless transfer of credits, reduce excess credit hours, and ensure students take the courses needed for their future career, the articulation agreement must establish three mathematics pathways for students by aligning mathematics courses to programs, meta-majors, and careers. A representative committee consisting of State University System faculty, faculty of career centers established under s. 1001.44, and Florida College System institution faculty shall collaborate to identify the three mathematics pathways and the mathematics course sequence within each pathway which align to the mathematics skills needed for success in the corresponding academic programs and careers.*

This committee will carry out the requirement to identify the math pathways as stipulated in the legislation.

About the Florida Student Success Center

The Florida Student Success Center (center) is leading this project, building on the work of the Florida Mathematics Re-Design Initiative, in collaboration with the Division of Florida Colleges (DFC), Office of Articulation, Division of Career and Adult Education (DCAE) and Office of the Board of Governors (BOG) for the SUS.

The Florida College System launched the Florida Student Success Center in 2018 in partnership with Jobs for the Future, Helios Education Foundation and the Florida College System Foundation, with the vision of serving as a resource of evidence-based, innovative practices and timely information for Florida's colleges. As part of the national Student Success Center Network, the center supports Florida's 28 state and community colleges' efforts to develop student-centered pathways and increase student completion rates. Working collaboratively with colleges, the center aims to create a coherent, statewide strategy so colleges can integrate their varied student success efforts, share best practices with one another and maximize resources. The center also represents the collective voice of practitioners in state-level policy discussions. More information about the center is available at: http://flstudentsuccess.org/.

MATHEMATICS PATHWAYS COMMITTEE OVERVIEW

Structure and Membership

The committee is be composed of:

- Eight members representing the SUS
- Eight members representing the FCS
- Two members representing the career centers
- A non-voting member who serves on the Articulation Coordinating Committee (ACC)

Committee members represent mathematics as well as other disciplines with high transfer rates between the FCS and SUS. The table below lists the full committee membership.

Florida Mathematics Pathways Committee Membership

Name	Title	Institution	Email
Aletheia Zambesi	Assistant Chair, Lecturer, Mathematics & Statistics	University of West Florida	azambesi@uwf.edu
Alicia Leary	Assistant Director	Fred K. Marchman Technical College	aleary@pasco.k12.fl.us
Allison Crume	Associate Vice President & Dean of Undergraduate Studies	University of South Florida	acrume@usf.edu
Christopher Kottke	Associate Professor, Mathematics	New College of Florida	ckottke@ncf.edu
Connie Campbell	Associate Professor, Mathematics	Gulf Coast State College	ccampbel2@gulfcoast.edu
Dana Hamadeh	Associate Dean, STEM & Health Science	Palm Beach State College	hamadehd@palmbeachstate.edu
Donald Ransford	Professor, Mathematics	Florida SouthWestern State College	dransford@fsw.edu
Donna Soncrant	Career Specialist	First Coast Technical College	donna.soncrant@stjohns.k12.fl.us
Jimmy Chang	Dean, Mathematics	St. Petersburg College	chang.jimmy@spcollege.edu
Julie Phelps	Professor. Mathematics	Valencia College	jphelps@valenciacollege.edu
Kalynda Holton	Dean, Science and Mathematics	Tallahassee Community College	kalynda.holton@tcc.fl.edu
Kathleen Ciez-Volz	Associate Provost, Curriculum and Instruction	Florida State College at Jacksonville	kathleen.ciez.volz@fscj.edu
Konstantina Christodoulopoulo	Undergraduate Coordinator, Mathematics Department	University of Florida	kchristod@ufl.edu
Lee Klinger	Professor, Department of Mathematical Sciences	Florida Atlantic University	klingler@fau.edu
Marc Campbell	Chair, School of Mathematics	Daytona State College	Marc.Campbell@DaytonaState.edu

Onder Koklu	Assistant Professor, Department of Teacher Preparation	Florida Gulf Coast University	okoklu@fgcu.edu
Rachid Ait Maalem Lahcen	Associate Lecturer, Mathematics	University of Central Florida	rachid@ucf.edu
Teresa Dorman	Associate Dean, College of Sciences	University of Central Florida	Teresa.Dorman@ucf.edu
Tommy Minton	Dean, Mathematics	Seminole State College of Florida	mintonr@seminolestate.edu

The staff liaisons from the Florida Department of Education (FLDOE) and the Office of the Board of Governors (BOG) listed in the table below will provide support to the committee and assist in facilitating the process to identify the mathematics pathways.

Staff Liaisons

Name	Title	Email
Disraelly Cruz	Director, Planning and Policy, BOG	Disraelly.Cruz@flbog.edu
Christy England	Vice Chancellor, Academic and Student Affairs, BOG	Christy.England@flbog.edu
Brittanian Gamble	Assistant Director, Academic Affairs, BOG	Brittanian.Gamble@flbog.edu
Tara Goodman	Vice Chancellor, DCAE	Tara.Goodman@fldoe.org
Katie Grissom	Deputy Director, Academic Affairs, DFC	Katie.Grissom@fldoe.org
Carrie Henderson	Executive Vice Chancellor, FCS	Carrie.Henderson@fldoe.org
Abbey Ivey	Director, Florida Student Success Center, DFC	Abbey.Ivey@fldoe.org
Elizabeth Moya	Assistant Vice Chancellor, Articulation & Career Education Policy, DCAE	Elizabeth.Moya@fldoe.org
Mike Sfiropoulos	Director, Academic Affairs, DFC	Mike.Sfiropoulos@fldoe.org
Kathleen Taylor	Bureau Chief, DCAE	Kathleen.Taylor@fldoe.org
Keturah Young	Program Coordinator, Florida Student Success Center, DFC	Keturah.Young@fldoe.org

Roles and Responsibilities

Committee members will be expected to attend all committee convenings and actively participate in identifying the mathematics pathways. The majority of the work of the committee will occur during the fall 2021 term. To identify the mathematics pathways and course sequences, members will be expected to attend a virtual orientation and three virtual convenings during the fall term. Additional work between convenings, while likely minimal, may also be required.

The center will provide a $500 stipend for service on the committee.

Timeline

The timeline for the work is included in the table below.

Mathematics Pathways Timeline

Activity	Expected Timeline
Committee finalizes mathematics pathways and course sequences	December 2021
ACC considers proposed mathematics pathways and course sequences	February 2022
Florida Department of Education (FDOE) initiates rule development process/Office of the Board of Governors (BOG) initiates regulation development process to incorporate math pathways	March-July 2022
State Board of Education/Florida Board Governors considers mathematics pathways rule/regulation revisions	August 2022
FDOE/BOG notify institutions and provide technical assistance	August 2022
Mathematics pathways effective for entering students in associate and baccalaureate degree programs	2023-24 academic year

PROCEDURES

Meeting Schedule and Goals

The committee will convene four times during fall 2021 to carry out its charge. The meeting schedule is listed in the chart below along with the high-level goals for each meeting.

Meeting	Date	Goals
Orientation	September 23 10 a.m. – 11 a.m.	• Introduce the work
Kick-off	October 11 10 a.m. – 12 p.m.	• Understand national context • Confirm plan to identify the pathways and courses
Full day meeting	November 18 9 a.m. – 4 p.m.	• Identify essential learning outcomes • Solidify the three pathways • Begin aligning courses to the pathways
Closing	December 8 10 a.m. – 12 p.m.	• Finalize pathways and course sequence recommendations

Committee Procedures and Decision-making

Committee members will determine their preferred committee structure/leadership model during the orientation meeting. Decisions will be made throughout the committee process by a majority vote, with the ACC representative serving as the tie-breaker when needed.

The staff liaisons from the FLDOE and BOG will facilitate the meetings and support committee procedures throughout the process. The center will provide a template to the committee for documentation of the final pathways and course sequence recommendations.

Final Approval of the Recommended Pathways and Course Sequences

The center staff liaison and committee ACC representative will present the committee's recommendations for the pathways and course sequences to the Articulation Coordinating Committee in February 2021. The ACC is a K-20 advisory body appointed by the Commissioner of Education that is comprised of representatives from all levels of public and private education in Florida. The committee exists to coordinate ways to help students move easily from institution to institution and from one level of education to the next.

After the ACC considers the committee's recommendations, the FLDOE and BOG liaisons will initiate rule and regulation development to incorporate the math pathways into state policy, including the statewide articulation agreement in Rule 6A-10.024, Articulation Between and Among Universities, Florida Colleges, and School Districts.