McDANIEL
COLLEGE

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July 10, 2019

Dr. James D. Fielder, Jr.
Secretary of Higher Education
Maryland Higher Education Commission
6 North Liberty Street
Baltimore, MD 21201

Dear Secretary Fielder:

McDaniel College is submitting New Program Proposals for eight undergraduate Bachelor of Arts programs. All programs were approved by the McDaniel College faculty during the spring semester and the Board of Trustees at their May meeting.

The programs are as follows:

- Actuarial Science
- Applied Mathematics
- Biochemistry
- Biomedical
- Criminal Justice
- Health Sciences
- Marketing
- Writing and Publishing

The complete proposals have been sent under separate cover in addition to the checks for each program proposal.

Thank you for your consideration and we look forward to hearing from you.

Sincerely,

Julia Jasken, Ph.D.
Executive Vice President/Provost

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MHEC
Creating a state of achievement

Cover Sheet for In-State Institutions
New Program or Substantial Modification to Existing Program

Institution Submitting Proposal	McDaniel College

Each action below requires a separate proposal and cover sheet.

- (●) New Academic Program
- ( ) New Area of Concentration
- ( ) New Degree Level Approval
- ( ) New Stand-Alone Certificate
- ( ) Off Campus Program
- ( ) Substantial Change to a Degree Program
- ( ) Substantial Change to an Area of Concentration
- ( ) Substantial Change to a Certificate Program
- ( ) Cooperative Degree Program
- ( ) Offer Program at Regional Higher Education Center

Payment Submitted: (●) Yes ( ) No
Payment Type: ( ) R*STARS (●) Check
Payment Amount: $850.00
Date Submitted: 8/13/2019

Department Proposing Program	Mathematics and Business Administration	
Degree Level and Degree Type	Undergraduate, Bachelor of Arts	
Title of Proposed Program	Actuarial Science	
Total Number of Credits	128	
Suggested Codes	HEGIS: 504.01	CIP: 52.1304
Program Modality	(●) On-campus ( ) Distance Education (*fully online*) ( ) Both	
Program Resources	(●) Using Existing Resources ( ) Requiring New Resources	
Projected Implementation Date	(●) Fall ( ) Spring ( ) Summer	Year: 2019
Provide Link to Most Recent Academic Catalog	URL: http://catalog.mcdaniel.edu	
Preferred Contact for this Proposal	Name: Wendy Morris	
	Title: Dean of the Faculty	
	Phone: (410) 857-2521	
	Email: wmorris@mcdaniel.edu	
President/Chief Executive	Type Name: Roger Casey	
	Signature:	Date: 08/20/2019
	Date of Approval/Endorsement by Governing Board:	05/11/2019

Revised 12/2018

Actuarial Science MHEC proposal

NEW ACADEMIC DEGREE PROGRAMS, NEW STAND-ALONE CERTIFICATE PROGRAMS, AND SUBSTANTIAL MODIFICATIONS

A. Centrality to Institutional Mission and Planning Priorities:

1. Provide a description of the program, including each area of concentration (if applicable), and how it relates to the institution's approved mission.

The Actuarial Science major is an interdisciplinary program that gives students the mathematical and economic tools necessary to appropriately quantify and assess risk. The major combines courses from Mathematics, Economics, and Business Administration.

There are two professional societies for actuaries, the Society of Actuaries and the Casualty Actuarial Society, which maintain a certification process for actuaries. We will work with the Society of Actuaries to certify the courses in our curriculum. Most schools in the area that offer an Actuarial Science minor or track only prepare students for at most 3 of the course work equivalencies and 1 examination requirement. Our major will prepare students for the 3 course work equivalencies and 3 of the examination requirements.

The coursework for the Actuarial Science major is largely driven by the certification requirements of the Society of Actuaries. There is one course for each of the 6 certification requirements that we will prepare students for. Four of the six courses are already taught at McDaniel as parts of the Business Administration and Mathematics majors. The additional 2 courses, MAT 3xxx: Financial Mathematics and MAT 4xxx: Investment and Financial Markets directly prepare students for two Society of Actuaries examinations. The Senior Capstone in Actuarial Science will be a cumulative experience requiring students to integrate the insights from their course work into a single project.

Institutional Mission

McDaniel College is a diverse student-centered community committed to excellence in the liberal arts and sciences and professional studies. With careful mentoring and attention to the individual, McDaniel changes lives. We challenge students to develop their unique potentials with reason, imagination, and human concern. Through flexible academic programs, collaborative and experiential learning, and global engagement, McDaniel prepares students for successful lives of leadership, service, and social responsibility.

The proposed Actuarial Science major falls squarely in the intersection between the liberal arts and sciences and professional studies. The major directly provides collaborative learning opportunities across disciplines to prepare students to succeed in actuarial and actuarial-related fields.

2. Explain how the proposed program supports the institution's strategic goals and provide evidence that affirms it is an institutional priority.

Strategic Vision

Sustained by the transformative power of the liberal arts, we will enhance McDaniel's reputation and strengthen our resources by increasing our focus on the unique potentials of individuals. We will challenge all students academically in a supportive environment of genuine care and graduate an increasing number of diverse, successful, and engaged alumni.
Our Goal of Excellence with Genuine Care: *We will attract, retain, and graduate more students by providing a challenging education that develops students' abilities and ambitions, ignites their passions, and prepares them for successful twenty-first century careers.*

It is our intention that the proposed will ignite students' passions as they prepare for successful 21st century careers while receiving a liberal arts education. The proposed Actuarial Science major was developed during a year-long review process at McDaniel College and within our department. This review focused on the institution's strategic goals, and which programs might be appealing and useful to future students. At the end of this strategic process, our proposal for the new major was approved by the Board of Trustees and deemed a high priority for the institution.

3. Provide a brief narrative of how the proposed program will be adequately funded for at least the first five years of program implementation. (Additional related information is required in section L.

The strategic enrollment plan (SEP) for this program involved careful collaboration with our VP of Admissions, the Provost, and faculty members who will teach in this major. Based on discussions with these faculty, the VP of Admissions worked with the Provost to determine the investments needed. This major was developed assuming that the program could continue to be sustained through existing institutional resources, but with plans for increased investments needed with the assumption of program growth (described in Section L, Table 2). Assuming the projected enrollment growth materializes, the institution is committed to hiring an additional full-time faculty member for each additional 15 students who enroll in this major and increasing the departmental budget proportionately as enrollment increases.

4. Provide a description of the institution's a commitment to:

a) ongoing administrative, financial, and technical support of the proposed program

The institution is committed to supporting the needs of this new program fully and can launch the program immediately using already existing institutional resources. Administrative support will be provided by the administrative assistant for the Mathematics & Computer Science Department. Should enrollment in the program increase to the point of requiring additional resources, our Strategic Enrollment Plan (SEP) describes our plans and timeline for supporting increasing needs for infrastructure and new faculty (see Section L, Table 2). Any technical needs described in the SEP (physical infrastructure, hardware, or software) will be incorporated into our annual budgeting process.

b) continuation of the program for a period of time sufficient to allow enrolled students to complete the program.

Given the demand for this program (as described below in section C), the institution is committed to offering this program for the foreseeable future. However, should there come a time when the institution decides to inactive this program, a multi-year plan

would be developed to continue offering the required courses to any enrolled students such that they would be guaranteed to graduate with their intended major.

B. Critical and Compelling Regional or Statewide Need as Identified in the State Plan:

1. Demonstrate demand and need for the program in terms of meeting present and future needs of the region and the State in general based on one or more of the following:

a) The need for the advancement and evolution of knowledge

The field of risk analysis is growing at a rate much faster than average (See Section C.2) and is being used by more and more areas outside of strictly actuarial jobs. Graduates of our proposed Actuarial Science program will therefore be perfectly situated, given their liberal arts background, to advance the state of knowledge in these new areas of risk analysis.

b) Societal needs, including expanding educational opportunities and choices for minority and educationally disadvantaged students at institutions of higher education

There is a societal need for more actuarial science graduates than is being currently supplied in the region, especially those who can apply their knowledge of risk analysis to a wide variety of disciplines.

With median salary ranges well above average, McDaniel's program will provide all graduates of the program the opportunity to begin a career in an established profession with excellent compensation:

Percentile wage estimates for this occupation:

Percentile	10%	25%	50% (Median)	75%	90%
Hourly Wage	$29.40	$36.88	$49.46	$68.15	$89.47
Annual Wage (2)	$61,140	$76,720	$102,880	$141,760	$186,110

This is especially important to the students of color at McDaniel College. The Fall 2019 entering class at McDaniel College is highly diverse:

- 34.6% African American
- 7% Hispanic
- 5.7% two or more races

According to the report *African Americans College Majors and Earnings* from the Georgetown University Center on Education and the Workforce (https://cew.georgetown.edu/wp-content/uploads/AfricanAmericanMajors_2016_web.pdf), black students are more likely to choose majors that don't lead to lucrative careers. The report concludes that "African Americans represent 12 percent of the US population but are underrepresented in the number of degree holders in college majors associated with the fastest-growing, highest-paying occupations...STEM, health and business." By offering this program, we will have expanded the opportunity for our students of color

and provided them a path that disrupts these major patterns and their corresponding socio-economic impact for students of color.

c) The need to strengthen and expand the capacity of historically black institutions to provide high quality and unique educational programs
N/A

2. Provide evidence that the perceived need is consistent with the Maryland State Plan for Postsecondary Education.
We believe this program aligns with Strategy 8 of the Maryland State Plan for Postsecondary Education:

- Develop new partnerships between colleges and businesses to support workforce development and improve workforce readiness.

As Strategy 8 states, "the contemporary workplace is changing rapidly, and long-held beliefs about academic majors, career paths, and the connections between them have been transformed. More than ever, employers seek employees who have the flexibility to understand changing conditions and solve emerging problems. Technical knowledge is not enough." By housing a program that prepares students with technical knowledge for a specific profession but does so in an interdisciplinary way with a liberal arts core, our graduates will be uniquely positioned to impact the workforce. But the education is not enough. Direct relationship development with businesses that employ actuaries will be essential. To accomplish this, we will follow our already established models through the Center for Experience and Opportunity and our academic departments, such as interview days, support for internships, and panels of local professionals (https://www.mcdaniel.edu/information/headlines/news-at-mcdaniel/archive/interviewing-day-at-mcdaniel-jobs-internships-and-career-contacts). These relationships will provide students direct access to employers while giving employers an opportunity to provide feedback on the program.

C. Quantifiable and Reliable Evidence and Documentation of Market Supply and Demand in the Region and State:

1. Describe potential industry or industries, employment opportunities, and expected level of entry (ex: mid-level management) for graduates of the proposed program.
According to Department of Labor statistics, actuary jobs in 2014 were distributed in the following industries:

- Almost 66% of actuary jobs (14,200 out of 21,490) were in the insurance industry
- Almost 15% in the consulting field (3,160 jobs)
- 10% were in corporate management (2,160 jobs)

Graduates of the McDaniel program will have completed requirements related to business and statistics and will be prepared to begin Certification exams. Central to the program development is the focus on preparing students for 6 of the actuarial exams as opposed to 4, which will better position our graduates for mid-level positions in insurance or business.

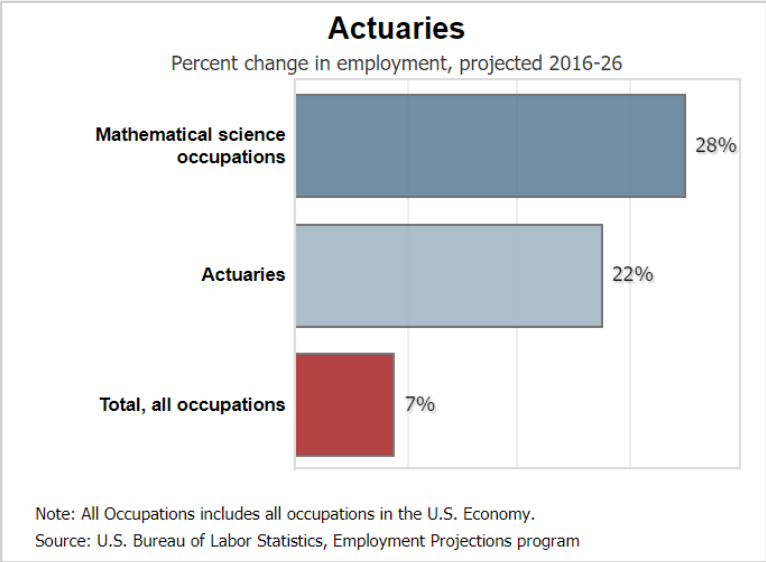


FIGURE 14

Top Degrees in Demand, by Broad Category

Broad Category	Number of Respondents That Will Hire	% of Total Respondents (N=101)
Business	84	83.2%
Engineering	83	82.2%
Computer & Information Sciences	63	62.4%
Math & Sciences	35	34.7%
Communications	19	18.8%
Social Sciences	21	20.8%
Humanities	6	5.9%
Agriculture & Natural Resources	6	5.9%
Healthcare	5	5.0%
Education	1	1.0%

Additionally, The National Association of Colleges and Employers indicates the degrees in Business and Math & Sciences are among the most in-demand by prospective employers. The actuary program falls within these two categories

2. Present data and analysis projecting market demand and the availability of openings in a job market to be served by the new program.

According to the Bureau of Labor Statistics, employment of actuaries is projected to grow 22 percent from 2016 to 2026, much faster than the average for all occupations.

The location quotient is the ratio of the area concentration of occupational employment to the national average concentration. A location quotient greater than one indicates the occupation has a higher share of employment than average, and a location quotient less than one indicates the occupation is less prevalent in the area than average.

The location quotient for actuaries in the state of Maryland is 1.23.

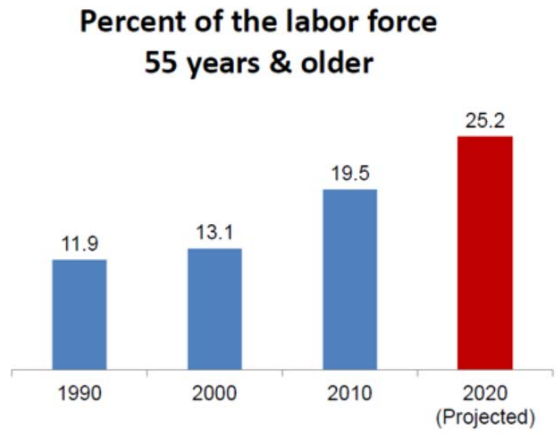
Additionally, the location quotient for Pennsylvania is 1.92, third highest in the country for actuaries. This is important because Pennsylvania is proximate to Maryland and is second only to Maryland regarding where McDaniel's enrolled students are from (and thus might return as graduates), indicating additional opportunities for employment.

3. Discuss and provide evidence of market surveys that clearly provide quantifiable and reliable data on the educational and training needs and the anticipated number of vacancies expected over the next 5 years.

Quick Facts: Actuaries	
2018 Median Pay	$102,880 per year $49.46 per hour
Typical Entry-Level Education	Bachelor's degree
Work Experience in a Related Occupation	None
On-the-job Training	Long-term on-the-job training
Number of Jobs, 2016	23,600
Job Outlook, 2016-26	22% (Much faster than average)
Employment Change, 2016-26	5,300

The Bureau of Labor Statistics indicates that the employment change between 2016-2026 will be 5,300 positions.
Additionally, the impact of the aging workforce will be felt in the actuary field. Though specific vacancies in the field have not been projected, it is reasonable to assume that this field will not be exempt from this phenomenon.

Figure 1



Source: Toossi, M. 2012. "Labor Force Projections to 2020: A More Slowly Growing Workforce." *Monthly Labor Review* (January, 2010–2020).

4. Provide data showing the current and projected supply of prospective graduates.
McDaniel's internal data reflects a strong interest in Business and the associated fields. 16.4% of the deposited students for the Fall 2019 class (100 total students) express their primary program of interest as Business, Accounting, Economics, or Math. These are students highly likely to have

interest in the actuary program. An additional 80 students (13%) identify as Undecided and would be a group to introduce to the program.

Given our own internal interest and the number of college-bound students interested in actuarial science nationally (see section D.2 below), we project annual enrollment of no fewer than 7 students per year. Applying standard attrition patterns, we project a minimum of 4-5 graduates per year.

D. Reasonableness of Program Duplication:

1. Identify similar programs in the State and/or same geographical area. Discuss similarities and differences between the proposed program and others in the same degree to be awarded.
According to the State Academic Program Inventory, found at https://mhec.state.md.us/institutions_training/Pages/searchmajor.aspx, and the degree trend data downloadable from the MHEC website (http://data.mhec.state.md.us/Trend_Aux/DTRENDSD18.zip), we offer the following information on Maryland schools with similar undergraduate programs:

		Degrees Awarded				
Institution	**Program**	**2014**	**2015**	**2016**	**2017**	**2018**
Morgan State University	Actuarial Science	7	2	6	9	1

Morgan State University also aligns its program towards the Society of Actuaries and not the Casualty Actuary Society. The course work for our major is therefore similar: the macro- and microeconomics, accounting, probability, mathematical statistics, and mathematical finance courses are all aimed at the same certification processes.

The main difference between the two programs is that ours will provide a more focused curriculum on the content in the beginning part of the certification sequence. This allows us to provide practical training while leaving plenty of credits for students to take advantage of the broader liberal arts curriculum.

2. Provide justification for the proposed program.
According to the College Board Student Search Service, a data pool that covers nearly 90 percent of all college-bound students, out of the students planning to enroll in college in fall 2019, 1,439 indicated an intended major of "actuarial science." When using a broader filter of *Business, Management, Marketing, and Related Support Services*, that number increases significantly to 222,923. There are more than 12,500 students in Maryland, Virginia, and Pennsylvania alone. Given the limited number of programs in the state and the high need identified in Section C, we believe the benefits of the program are clear.

E. Relevance to High-demand Programs at Historically Black Institutions (HBIs)

1. Discuss the program's potential impact on the implementation or maintenance of high-demand programs at HBI's.
N/A

F. Relevance to the identity of Historically Black Institutions (HBIs)

1. Discuss the program's potential impact on the uniqueness and institutional identities and missions of HBIs.

N/A

G. Adequacy of Curriculum Design, Program Modality, and Related Learning Outcomes (as outlined in COMAR 13B.02.03.10):

1. Describe how the proposed program was established, and also describe the faculty who will oversee the program.

The Actuarial Science major was created by

1. surveying Actuarial Science majors at similar sized institutions and at large institutions which have been deemed *Centers of Excellence* by the Society of Actuaries.
2. analyzing the requirements set by the Society of Actuaries for certification as an *Associate of the Society of Actuaries*, the first level of certification.
3. considering the courses already offered by the college and which new courses would need to be offered. Also considered were the strengths of current faculty to contribute to those additional courses.

The courses for the proposed Actuarial Science major will be taught by existing full-time tenured or tenure-track faculty at the college. These faculty will come from the Department of Economics and Business Administration and the Department of Mathematics and Computer Science, and all have terminal degrees in their respective fields of expertise.

2. Describe educational objectives and learning outcomes appropriate to the rigor, breadth, and (modality) of the program.

The educational objective of the Actuarial Science major is to prepare students for the initial steps in certification by the Society of Actuaries at the Associate level. This major will provide students with the skills and tools necessary to succeed in any risk analysis field of endeavor.

The learning outcomes of the Actuarial Science major are:

AS SLO 1: Students will demonstrate understanding of the role of insurance in society, basic economic theory, and how insurance and financial markets operate.
AS SLO 2: Students will be able to communicate technical information clearly and effectively to a range of audiences.
AS SLO 3: Students will demonstrate the necessary skills to pass the Society of Actuaries exams.
AS SLO 4: Students will exhibit the ability to construct actuarial models independently.

3. Explain how the institution will:

a) provide for assessment of student achievement of learning outcomes in the program

Student achievement of learning outcomes in the program is overseen by the Academic Assessment Committee (AAC) as part of McDaniel's established faculty governance. This

committee of five full-time teaching faculty is charged with fostering sound assessment of the College's academic programs, encouraging the collection of data that leads to action, and collecting departmental assessment plans and reports and responding to them as necessary. The program will provide a list of learning outcomes to the AAC along with a chart indicating the specific courses in which each outcome is developed as well as courses that serve as points of assessment. In the fall of each academic year, the program will select an outcome (or outcomes) to assess and provide a detailed plan for direct and indirect assessment to the AAC; the AAC will provide feedback on this plan, as needed. All the department's learning outcomes will be revisited and assessed on a regular basis so that changes made based on past assessments can be evaluated.

b) document student achievement of learning outcomes in the program
In the spring of each academic year, the program will document the degree to which students achieved the learning outcomes in the program by providing a report on the assessment of these outcomes to the AAC, based on the assessment plan submitted earlier in the year. These reports will include the assessment findings as well as a proposed plan of ways to address any areas in which students did not successfully meet the learning outcomes set forth by the department.

4. Provide a list of courses with title, semester credit hours and course descriptions, along with a description of program requirements

Proposed Actuarial Science Major

Number	Title	Credits
ECO 1103	Introduction to Economics	4
ECO 3303	Microeconomic Theory	4
ECO 3320	Macroeconomic Theory	4
BUA 1101	Principles of Accounting I	4
BUA 1102	Principles of Accounting II	4
BUA 4323	Corporate Finance and Financial Management	4
MAT 1117	Calculus I	4
MAT 1118	Calculus II	4
MAT 3323	Probability	4
MAT 3324	Mathematical Statistics	4
MAT 3xxx	Financial Mathematics	4
MAT 4xxx	Investment and Financial Markets	4
MAT 449x	Capstone Experience in Actuarial Science	4
DEPARTMENTAL WRITING REQUIREMENT: Students who major in Actuarial Science are required to take ONE of the following any semester after the first year. ENG 2206 - Creative Writing—Poetry ENG 2207 - Creative Writing—Fiction ENG 2208 - Advanced Composition ENG 2212 - Professional Communication PHI 3200 - Writing in Philosophy Any 3000-level History (HIS) course		Credits included in general education table below

Total number of credits for major: (Not including Departmental Writing)	**52**

**These three courses have been approved by the Curriculum Committee and will be assigned course numbers once they have been presented at the September faculty meeting.*

Additional credits outside for the Major

Type of Course	**Details**	**Credits**
First Year Seminar	General education requirement	4
ENG 1101	Introduction to College Writing, general education requirement	4
Writing in the Discipline	General education requirement that students take course(s) to learn how to write in the discipline of their major.	4
Second Language	General education requirement is 2 semesters in the same language or placement/proficiency above the 2nd semester level.	8
Multicultural	Category of courses for general education requirement	4
International Nonwestern	Category of courses for general education requirement	4
International Western OR Nonwestern	Choice of 2 categories of courses for general education requirement	4
Quantitative Reasoning	Majors will take Calculus I to meet general education requirement	Credits included in major
Scientific Inquiry with Lab	Category of courses for general education requirement	4
Quantitative Reasoning OR Scientific Inquiry	Majors will take Calculus 2 to meet general education requirement	Credits included in major
Textual Analysis	Category of courses for general education requirement	4
Creative Expression	Category of courses for general education requirement	4
Social, Cultural, Historical Understanding	Majors will take Introduction to Economics to meet general education requirement	Credits included in major
Physical Activity & Wellness	General education requirement is 1 credit of physical activity courses OR participation in intercollegiate sports, ROTC, or some other approved experience.	0-1
Jan Term	General education requirement of 1 course during a January Term. Most students complete this by taking My Design.	2
My Career	General education requirement	1
Experiential Learning	General education requirement is that students complete credited or non-credited experiential learning which could include courses, internships, experiential independent studies, or study abroad.	0-4

Total number of general education credits outside of the major	**47-52**
Remaining elective courses (these could count toward a minor, another major, and/or elective credit)	**24-29**
Combined credits from general education and elective coursework	**76**
Total number of credits from the major (see previous table)	**52**
Total number of credits required for the B.A. degree	**128**

COURSE DESCRIPTIONS FOR THE MAJOR:

ECO 1103 - Introduction to Economics
Credits: 4
The study of the economic foundations of any society: price theory - the market system and allocation of resources; and macroeconomic theory - national income, employment, inflation, business cycles, and international trade.
Prerequisites Mathematics 1001, Mathematics 1002 or placement above Mathematics 1002.
McDaniel Plan: *Social, Cultural, and Historical Understanding*

ECO 3303 - Microeconomic Theory
Credits: 4
The theory of demand, production, cost, and resource allocation in a market economy. Models of market structure are developed and various forms of market failure are analyzed. Also developed are models of risk and uncertainty and theories of factor pricing and income distribution.
Prerequisites ECO 1103 or ECO 2201

ECO 3320 - Macroeconomic Theory
Credits: 4
The study of national income and price determination, growth, and business cycles; the consumption/ leisure tradeoff, expectations and dynamic decision making, asset markets and investment, nominal frictions, and the role of fiscal and monetary policy.
Prerequisites ECO 1103 or ECO 2201

BUA 1101 - Principles of Accounting I
Credits: 4
Fundamental principles of accounting with emphasis on the preparation and interpretation of financial statements. Attention is given to the collection and reporting of pertinent information for creditors, management, and investors. The second semester includes the preparation of data for internal management purposes; the collection, presentation, and interpretation of information for purposes of decision-making, cost control, and managerial planning.
Prerequisites Successful completion of MAT 1001 or MAT 1002 or higher level placement.

BUA 1102 - Principles of Accounting II
Credits: 4
Fundamental principles of accounting with emphasis on the preparation and interpretation of financial statements. Attention is given to the collection and reporting of pertinent information for creditors, management, and investors. The second semester includes the preparation of data for internal management purposes; the collection, presentation, and interpretation of information for purposes of decision-making, cost control, and managerial planning.
Prerequisites Placement above MAT 1001.

BUA 4323 - Corporate Finance and Financial Management
Credits: 4
The management of business funds, with emphasis on the techniques of financial analysis, the financial environment in which firms operate, the sources and forms of external financing, and the allocation of funds to competing alternatives such as plant and equipment, working capital, and financial investment.
Prerequisites BUA 1101, STA 2215, or permission of the instructor.

MAT 1117 - Calculus I
Credits: 4
Initial study of limits, derivatives and integrals; review of trigonometric functions; differentiation techniques and formulas applied to rational and trigonometric functions; applications of derivatives including curve sketching; extrema and rate problems; definition of the integral; elementary applications of integrals.
Prerequisites MAT 1107 or placement by the Department.
McDaniel Plan: *Quantitative Reasoning.*

MAT 1118 - Calculus II
Credits: 4
Further study of the trigonometric, exponential, and logarithmic functions and their derivatives, methods of integration; parametric equations; polar coordinates; sequences, infinite series, and power series.
Prerequisites MAT 1117 or placement by the Department.
McDaniel Plan: *Quantitative Reasoning.*

MAT 3323 - Probability
Credits: 4
A study of sample spaces, counting techniques, discrete and continuous random variables and related moments; binomial, Poisson, normal and other probability distributions; Chebyshev inequality, central limit theorem.
Prerequisites MAT 1118, MAT 2219 is recommended.

MAT 3324 - Mathematical Statistics
Credits: 4
A systematic treatment of statistics from a theoretical point of view; sampling distributions, decision theory, estimation, hypothesis testing, modeling, and applications.
Prerequisites MAT 3323.

MAT 3xxx – Financial Mathematics
Credits: 4
This course will cover the fundamental concepts of financial mathematics, and how those concepts are applied in calculating present and accumulated values for various streams of cash flows. This course is designed to prepare students for the Society of Actuaries Actuarial Exam FM.
Prerequisites MAT 3323.

MAT 4xxx - Investment & Financial Markets
Credits: 4
This course will cover the theoretical basis of corporate finance and financial models and the application of those models to insurance and other financial risks. This course is designed to prepare students for the Society of Actuaries Actuarial Exam IFM.
Prerequisites MAT 3xxx (Financial Mathematics).

MAT 449x - Capstone Experience in Actuarial Science
Credits: 4
A large-scale independent project combining knowledge of risk analysis, problem-solving ability, and presentation, writing, and research skills. Projects will focus on a specific topic in actuarial science.
Prerequisites MAT 3323.

ENG 2206 - Creative Writing—Poetry
Credits: 4
A workshop in writing poetry. Student poems will be critiqued weekly in the class workshop. Students will read and analyze modern and contemporary poetry by such authors as Robert Frost, Elizabeth Bishop, Gwendolyn Brooks, Sylvia Plath, William Stafford, and Robert Hayden.
Prerequisites ENG-1101
McDaniel Plan: *Creative Expression.*

ENG 2207 - Creative Writing—Fiction
Credits: 4
A workshop in writing short fiction. Student writing will be critiqued weekly in the class workshop. Students will read and analyze modern and contemporary short fiction by such authors as Welty, Hemingway, O'Connor, and Oates.
Prerequisites ENG-1101
McDaniel Plan: *Creative Expression.*

ENG 2208 - Advanced Composition
Credits: 4
Designed to support writers' development as prose stylists. Primary emphasis placed on students' own nonfiction writing – about objects, places local or distant, and people familiar or famous. Students learn to generate material, to revise prose for fluidity and grace, and to recognize how style affects readers. Students also read published literary nonfiction (profiles,

literary journalism, nature writing, memoir) to learn about craft in prose, imitate the techniques of published writers, and reflect on the creative process.
McDaniel Plan: *Creative Expression.*

ENG 2212 - Professional Communication
Credits: 4
An opportunity for students to practice and think critically about communication in the workplace. Assignments will focus on writing forms and topics suitable for students' fields of major interest. Students will complete individual and collaborative projects designed to help them write clearly and effectively for audiences both within their professions and outside of them. Particular emphasis will be placed on electronic communication forms.
Prerequisites ENG 1101 and a minimum of 32 credits

PHI 3200 - Writing in Philosophy
Credits: 4
Focused, direct instruction in the writing skills necessary for successful research papers in Philosophy. Different topics are chosen for each offering, based on students interests and needs.
McDaniel Plan: *Departmental Writing*

5. Discuss how general education requirements will be met, if applicable.
Depending upon the specific courses a student chooses, the proposed Actuarial Science major covers a minimum of 4 general education requirements and a maximum of 5 general education requirements. All applied mathematics majors would complete both Quantitative Reasoning requirements (2 courses, 8 credits), the Social, Cultural, and Historical requirement (1 course, 4 credits) and the Writing in the Discipline requirement (1 course, 4 credits). Additionally, many of the courses that can be used to satisfy the Writing in the Discipline requirement satisfy the Creative Expression requirement for general education. Therefore, students will satisfy 16 credits of their general education requirements through the Applied Mathematics major. Students will meet the remaining general education requirements outside of their major.

6. Identify any specialized accreditation or graduate certification requirements for this program and its students.
The process by which a student becomes an Associate of the Society of Actuaries is a 12 step certification. The first three are called "Validation by Educational Experience." In order for the college to offer this validation in a seamless way, our courses must be approved by the Society of Actuaries. This process is done by a 1-page form and submission of course syllabi and supporting documents. Before this approval is obtained students can still petition individually.

No particular accreditation is needed by the program before students are allowed to sit for the examinations.

7. If contracting with another institution or non-collegiate organization, provide a copy of the written contract.
N/A

8. Provide assurance and any appropriate evidence that the proposed program will provide students with clear, complete, and timely information on the curriculum, course and degree requirements, nature of faculty/student interaction, assumptions about technology competence and skills, technical equipment requirements, learning management system, availability of academic support services and financial aid resources, and costs and payment policies.
The college catalog includes information on approved programs including all required coursework and total program hours. The catalog also addresses degree and McDaniel Plan (general education) requirements for students.

The Schedule of Classes for each semester outlines how classes are offered and the nature of faculty/student interaction—face-to-face, online, or hybrid. The learning management system for the online and hybrid classes is Blackboard. When student accounts are created, students receive an automated email that contains information about Blackboard and the system requirements. This information is in the student's inbox when they first access their email. If specific technological competencies or skills are required for any courses within the approved program, this information is outlined in the course description.

The college website and intranet contain pertinent information about student support services, including academic support, financial aid, tuition and fees, billing and payment, and policies relating to each.

9. Provide assurance and any appropriate evidence that advertising, recruiting, and admissions materials will clearly and accurately represent the proposed program and the services available.
At McDaniel College, recruitment materials are updated annually. This provides the college flexibility to ensure accuracy.

Additionally, it is the habit of the Office of Admissions to introduce prospective students to departmental faculty when possible. Campus visits include the opportunity to sit in on a class or to meet with faculty (https://www.mcdaniel.edu/undergraduate/admissions/visit-mcdaniel). Emails written by department chairs are deployed by the Office of Admission and admitted student events feature one-hour sessions that give faculty and current students an opportunity to share details about the major.

The college's website is currently undergoing a complete redesign, but departmental practice in the Office of Communication and Marketing is to review academic program pages monthly for accurate content. Academic pages link to the most recent version of the college's catalog, giving prospective students a clear and accurate view of the program requirements and coursework (https://www.mcdaniel.edu/undergraduate/the-mcdaniel-plan/departments/economics-business-administration#econ-overview).

H. Adequacy of Articulation

1. If applicable, discuss how the program supports articulation with programs at partner institutions. Provide all relevant articulation agreements.
N/A

I. Adequacy of Faculty Resources (as outlined in COMAR 13B.02.03.11).

1. Provide a brief narrative demonstrating the quality of program faculty. Include a summary list of faculty with appointment type, terminal degree title and field, academic title/rank, status (full-time, part-time, adjunct) and the course(s) each faulty member will teach in the proposed program.

The courses for the proposed Actuarial Science major will be taught by existing full-time tenured or tenure-track faculty at the college from the Department of Economics and Business Administration and the Department of Mathematics and Computer Science, and all have terminal degrees in their respective fields of expertise.

Name	Terminal Degree	Academic Title/Rank	Status	Courses
Italo Simonelli	Ph.D in Mathematics	Professor of Mathematics	Full-time Faculty	MAT 1117: Calculus I MAT 3323: Probability MAT 3324: Mathematical Statistics
Spencer Hamblen	Ph.D in Mathematics	Associate Professor of Mathematics	Full-time Faculty	MAT 1118: Calculus II MAT 449x: Capstone Experience in Actuarial Mathematics
Benjamin Steinhurst	Ph.D in Mathematics	Associate Professor of Mathematics	Full-time Faculty	MAT 3xxx: Financial Mathematics MAT 4xxx: Investments & Financial Markets
Kevin McIntyre	Ph.D in Economics	Professor of Economics	Fully-time Faculty	ECO 1103: Introduction to Economics ECO 3320: Macroeconomic Theory
Nicholas Kahn	Ph.D in Economics	Assistant Professor of Economics	Full-time Faculty	ECO 3303: Microeconomic Theory
Julie Routzahn	Ph.D in Economics CPA, MBA, M.S. Finance	Associate Professor pf Economics & Business Administration	Full-time Faculty	BUA 4323: Corporate Finance and Financial Management
Kerry Duvall	M.S. Taxation, CPA	Assistant Professor of Business Administration	Full-time Faculty	BUA 1101: Principles of Accounting I BUA 1102: Principles of Accounting II

2. Demonstrate how the institution will provide ongoing pedagogy training for faculty in evidenced-based best practices, including training in:

a) Pedagogy that meets the needs of the students

McDaniel College prides itself on its excellent instruction and therefore provides many forms of faculty development to support professors in all stages of their careers. New faculty participate in a year-long orientation program of monthly professional development events which include a focus on evidence-based practices. Every August, new and returning faculty attend a day-long faculty development retreat which includes concurrent sessions on various topics including diversity, students with learning differences, evidence-based research about teaching and learning, best practices for hybrid and online teaching, handling challenging classroom situations, etc. Throughout the academic year, we offer 1 to 2 faculty development sessions each month which are open to all faculty. Each year, we run a faculty book group/learning community which approximately one third of our full-time faculty participate in; the book is always one which highlights evidenced-based practices. In addition to the group-based forms of

faculty development described above, the institution also provides one-on-one support to faculty who would like to receive formative feedback on their teaching through class observations and/or moderated focus groups with their students.

b) The learning management system

The Department of Instructional Design and Technology at McDaniel College offers the following resources to support faculty use of Blackboard: (a) 60-minute workshops throughout the year on Blackboard Basic, Intermediate, and Advanced features; (b) one-on-one Blackboard training for all new faculty members and anyone else who requests it; (c) a range of course design templates that enable/encourage backward design, outcome alignment, authentic assessment, appropriate rubrics, and a range of student-centered pedagogical methods; and (d) professional development lunch events about matters of instructional design.

c) Evidenced-based best practices for distance education, if distance education is offered.

All faculty who teach an online course are required to first take BPO 100: *Best Practices in Online Teaching and Learning*, a four-week (28-hour commitment) online course. By completing the course, participants (a) gain the benefit of the experience, research, and knowledge from those individuals and institutions who have been offering online instruction for many years, (b) develop specific strategies for maintaining social presence, teaching presence, and cognitive presence in an online classroom, and (c) develop specific strategies for facilitating collaboration, reflection, and learner-centered pedagogies. BPO 100--a constructivist, discussion-based class--is informed by the Community of Inquiry framework and standard best practices as measured by Quality Matters.

J. Adequacy of Library Resources (as outlined in COMAR 13B.02.03.12).

1. Describe the library resources available and/or the measures to be taken to ensure resources are adequate to support the proposed program.

McDaniel College's Hoover Library contains approximately 375,038 book volumes, access to 87 different databases, 77,676 titles of media, and 84,516 serials. The Hoover Library website (http://hoover.mcdaniel.edu) includes Research Guides—general and course specific—that assist students with identifying appropriate resources for academic writing. The guides also provide general assistance with the research process by covering topics such as source selection and evaluation.

The College's print collection is available for loan to all McDaniel College students, faculty, staff, and other community members. The library's website provides remote access to the online catalog and electronic databases so that students may access the library's resources from wherever they are working. No-fee interlibrary loans and document delivery from other institutions supplement the collection in support of research and classroom projects.

As part of the Carroll Library Partnership, Hoover Library shares an online catalog with Carroll County Public Library and Carroll Community College. Students, faculty, and staff may use,

request, and check out titles from any of the three collections. This arrangement makes an additional 700,000 volumes available to the McDaniel College community. McDaniel College students and faculty also have borrowing privileges at participating libraries at institutions in the Maryland Independent Colleges and Universities Association (MICUA), the Baltimore Area Library Consortium (BALC), and the Associated College Libraries of Central Pennsylvania (ACLCP).

K. Adequacy of Physical Facilities, Infrastructure and Instructional Equipment (as outlined in COMAR 13B.02.03.13)

1. Provide an assurance that physical facilities, infrastructure and instruction equipment are adequate to initiate the program, particularly as related to spaces for classrooms, staff and faculty offices, and laboratories for studies in the technologies and sciences.
The Mathematics and Computer Science Department has 7 offices, and typically uses 6 classrooms, 1 seminar room, and 2 computer labs in Lewis Hall of Science and Lewis Recitation Hall. The Economics and Business Administration Department also has individual offices for its full-time faculty, a seminar room, and several dedicated as well as shared classrooms. Students in the Actuarial Science major will have access to and training on mathematical and statistical software tools such as Excel, SageMath/CoCalc, and R. Students will be able to use these tools in computer labs in Lewis Hall of Science as well as any other computer lab across campus.

2. Provide assurance and any appropriate evidence that the institution will ensure students enrolled in and faculty teaching in distance education will have adequate access to:

a) An institutional electronic mailing system, and

b) A learning management system that provides the necessary technological support for distance education

All McDaniel students are provided with email accounts. The institution uses Blackboard for course delivery, community engagement, and content management for all face-to-face and online courses. Our Blackboard system is fully integrated with our Student Information System (SIS), such that (a) all students and faculty automatically have Blackboard accounts, (b) all classes are automatically built, and (c) all enrollments are automatically managed via SIS integration.

Instructors and students utilize iDevices, Adobe Connect, Ensemble, video from Hoover Library databases, and fast Internet connections. The Student Academic Support Services (SASS) office provides on-loan assistive technology to students. The Instructional Technology Office provides training and support for faculty and students using any technology used in the course. The department has adequate information technology resources to support faculty and students.

L. Adequacy of Financial Resources with Documentation (as outlined in COMAR 13B.02.03.14)

1. Complete Table 1: Resources and Narrative Rationale. Provide finance data for the first five years of program implementation. Enter figures into each cell and provide a total for each year. Also provide a narrative rationale for each resource category. If resources have been or will be reallocated to support the proposed program, briefly discuss the sources of those funds.

Rationale for enrollment projections

New student enrollment projections embedded in our strategic enrollment plans are developed by the Vice President for Enrollment. They are based on the VP's review of historical enrollment data in similar fields at McDaniel College, the size of the potential market in primary recruitment areas for the college, and enrollment trends nationally.

Rationale for reallocated funds

Last year, the College underwent a faculty-led review in response to a request from the McDaniel Board of Trustees to identify academic programs for possible reinvestment, as well as potential restructuring. The goal of this review was to strengthen the academic program of the College by aligning our academic offerings with current and prospective students' demonstrated interests.

In the spring of 2019, the Board of Trustees unanimously approved the recommendations that would suspend enrollment for future students in the following undergraduate majors: Art History, Religious Studies, French, German and Music. Minors in German, Music and Latin will also no longer be offered. These programs were selected, in large part, due to relative under-enrollment compared with other programs at the College.

The following chart indicates the number of students who were in the pipeline and in our prospective student pool as of November of 2018:

Program	5-yr avg degrees	Current majors	Current minors	F19 Admissions projections Apps→Admits→Yield
Art History Major (minor retained)	4.6	4	4	N/A: Art History not in survey General Art = **6 students**
Religious Studies Major (minor retained)	1.6	7	10	8 apps → 5 admits → **1 student**
French Major (minor retained)	3.8	8	6	9 apps → 6 admits → **1 student**
German Major and Minor	2.2	12	5	2 apps → 1 admits → **0 students**
Music Major and Minor (select music activities retained)	3.2	13	8	32 apps → 21 admits → **4 students**

Any prospective students who indicated an interest in these majors were notified of the program suspensions in advance of making their decision to enroll. The College guaranteed that all students who had declared a major in an impacted program would be able to graduate with their intended degree. McDaniel students were allowed to declare any major through the end of this spring semester regardless of whether there was a recommendation to suspend. And in every case except for German and Latin, courses will still be taught in these disciplines and students will be able to use these courses to fulfill their core education (McDaniel Plan)

requirements. Specifically related to Music, select performance opportunities that have existed for all students, regardless of major, will still be available, including choir and band, as well as music lessons. Students can still select from five second languages: Arabic, ASL, Chinese, French, and Spanish.

Because of our commitment that all students in an affected major can graduate with their intended degree, existing faculty may continue to teach in the affected programs of study for a number of years. The College is closely following American Association of University Professors (AAUP) guidelines.

The recommendations approved by the board resulted in nearly a million dollars worth of savings over the next five years, 100% of which will be re-invested to strengthen our academic programs. Investments will support the reorientation of existing programs to better meet the needs of the 21st century, and to create new programs that will expand the curricular offerings of the College. This was not a budget cut.

The Board also voted to investigate these strategic re-investments in four categories of strong and growing interest to current and prospective students: Health Sciences/STEM, Business and Technology, the Liberal Arts core curriculum, and professional certificates.

None of these changes will adversely affect our ability to deliver our hallmark McDaniel Plan and McDaniel Commitment. Our students will continue to experience a broad education in the liberal arts and sciences while delving deeply into their program areas of special interest.

2. Complete Table 2: Program Expenditures and Narrative Rationale. Provide finance data for the first five years of program implementation. Enter figures into each cell and provide a total for each year. Also provide a narrative rationale for each expenditure category.
FTE & operating budget calculations were based upon existing departments which will contribute at least 25% of the courses in the proposed major. Using only those high-contributing departments, FTE & operating budgets were then calculated based on proportionate contributions.

M. Adequacy of Provisions for Evaluation of Program (as outlined in COMAR 13B.02.03.15).

1. Discuss procedures for evaluating courses, faculty and student learning outcomes.
Courses are evaluated via online student course evaluations which are reviewed by department chair and the individual faculty member at the end of each semester; these evaluations include quantitative and qualitative components. Programmatic student learning outcomes are assessed via direct and indirect measures under the guidance of the standing Academic Assessment Committee as described in G.3

Faculty teaching in the program will be evaluated in accordance with the faculty evaluation procedures of McDaniel College specified in the McDaniel College Faculty Handbook. At the time when franchised faculty are eligible for reappointment, tenure, promotion, or periodic review, the faculty member critically evaluates his or her performance as a teacher, reviews course evaluations, and provides evidence of effective teaching, service to the college, and scholarly and/or professional activity. The 5 elected members of the Faculty Affairs Committee

review the materials submitted by the faculty member as well as the student course evaluations, rate the candidate's performance, and make a recommendation to the Provost for employment action. Adjunct faculty are reviewed by their department chair on a regular basis; adjunct faculty are evaluated based on their course evaluations and other materials they may submit to document their teaching effectiveness.

2. Explain how the institution will evaluate the proposed program's educational effectiveness, including assessments of student learning outcomes, student retention, student and faculty satisfaction, and cost-effectiveness.

In addition to the annual assessments of student learning outcomes overseen by the Academic Assessment Committee described earlier (see G.3), the program will engage in a periodic program review. The program review process is overseen by the Academic Planning Committee (APC) – a standing committee that is part of our faculty governance system. Faculty who teach in the program will prepare a self-study that includes data about course and program enrollment, faculty professional activity, student retention/graduation rates, assessments of student learning outcomes, alumni outcomes and satisfaction, a comparison of the program to similar programs at other colleges, nationwide trends in the discipline, an evaluation of the current strengths and challenges of the program, and a five-year strategic plan. The self-study is reviewed by the APC and feedback is provided. External consultants review the self-study and make an on-site visit to further evaluate the program's educational effectiveness and make recommendations based for improvement. The last step of this year-long review process is the revision of the five-year plan to address any weaknesses or areas of improvement.

The student body is surveyed using several different methods. Annually, we complete the Higher Education Data Sharing (HEDS) Consortium's "Senior Survey," which asks seniors to report on five dimensions of their undergraduate experience: good teaching and high-quality Interactions with faculty, challenging assignments and high faculty expectations, interactions with diversity, growth on intellectual outcomes, and growth on civic outcomes. Secondly, we use the Student Satisfaction Inventory (SSI) from Ruffalo Noel Levitz, which measures student satisfaction and which issues are most important to them. Finally, we also utilize the National Survey of Student Engagement (NSSE), which looks at engagement indicators and high-impact practices. With each of these assessment methods, data can be disaggregated to a departmental/programmatic level. These reports are provided to department chairs for integration into their own assessment plans and departmental reviews as a measure of student satisfaction.

Regarding cost effectiveness, McDaniel College engages in a strategic planning process to determine the viability of its programs. This process involves developing a unique Strategic Enrollment Plan (SEP) for the program. As defined by Ruffalo Noel Levitz, Strategic Enrollment Planning is "a data-informed process that aligns an institution's fiscal, academic, co-curricular, and enrollment resources with its changing environment to accomplish the institution's mission and ensure the institution's long-term enrollment success and fiscal health." At McDaniel, this means each proposed academic program is reviewed through the lens of not only curricular innovation and mission alignment, but also program demand, departmental costs, investment needs, and long-term viability. This data is reviewed by the Provost and a faculty committee whose focus is strategic planning and the budgetary health of the institution. This program was

developed with the assumption that the program could continue to be sustained through existing institutional resources, but with plans for increased investments when the expected program growth occurs.

N. Consistency with the State's Minority Student Achievement Goals (as outlined in COMAR 13B.02.03.05).

1. Discuss how the proposed program addresses minority student access & success, and the institution's cultural diversity goals and initiatives.

McDaniel College is committed to minority student access and success. In accordance with this commitment, the College has articulated cultural diversity goals which include general education courses related to cultural diversity, co-curricular student programming, and faculty and staff development regarding working with a diverse student body.

Students of all ages, interests, professions, and backgrounds are encouraged to apply for undergraduate and graduate study. Fall enrollment data from 2018 show that 28% of our student population identified as students of color, a number that has steadily increased since 2010. The majority of students at McDaniel College (65%) come from the State of Maryland, and 26% are considered first-generation college students. McDaniel College actively recruits prospective students through campus events and career fairs throughout the mid-Atlantic region.

All the students in the proposed program will complete general education courses which have been designed to educate students about different forms of diversity. Students will complete at least one multicultural course which will give students an understanding of the cultural pluralism of American society. Multicultural courses focus on the cultures and experiences of diverse groups in the United States that have been historically subordinated or marginalized and defined by such categories as race, gender, sexuality, class, religion, and disability. Students will complete at least two international courses, one of which must focus on a non-western region. International courses examine the perspectives and customs of cultures outside the U.S. or the relationship between the U.S. and world cultures. In addition to these general education course, our orientation program for first year students includes 3 sessions focused on diversity-related issues relevant to college students and those sessions span from the summer orientation through the end of the first semester so that we can address diversity education at multiple stages of their first year.

Many co-curricular, cultural activities are sponsored by the Office of Diversity and Inclusion, while other activities are initiated by our many student organizations which provide social support and co-curricular events for students. (e.g., the Black Student Union, the Gender Sexuality Alliance, the Hispano-Latinx Alliance, the Asian Community Coalition, the Muslim Student Association, and the Jewish Student Union).

The faculty members who will teach in the proposed program participate in multiple professional development events focused on teaching and supporting students from diverse groups. Every August, McDaniel College holds a faculty development retreat and requires that faculty attend at least one session focused on diversity-related issues. Our newest full-time

faculty members participate in a year-long orientation series which includes sessions about teaching our diverse student body as well. In addition, throughout the academic year, professional development sessions focused on diversity-related issues are open to all faculty and staff.

O. Relationship to Low Productivity Programs Identified by the Commission:

1. If the proposed program is directly related to an identified low productivity program, discuss how the fiscal resources (including faculty, administration, library resources and general operating expenses) may be redistributed to this program.
This proposed program is not directly related to an identified low productivity program.

P. Adequacy of Distance Education Programs (as outlined in COMAR 13B.02.03.22)

1. Provide affirmation and any appropriate evidence that the institution is eligible to provide Distance Education.
While we are eligible to provide Distance Education as an institution at the Graduate level, this proposed Undergraduate program will not be offered in Distance Education format.

2. Provide assurance and any appropriate evidence that the institution complies with the C-RAC guidelines, particularly as it relates to the proposed program.
While we are eligible to provide Distance Education as an institution at the Graduate level, this proposed Undergraduate program will not be offered in Distance Education format.

TABLE 1: PROGRAM RESOURCES

Resource Categories	Year 1	Year 2	Year 3	Year 4	Year 5	Narrative
1. Reallocated Funds	$0.00	$0.00	$0.00	$0.00	$0.00	
2. Tuition/Fee Revenue (c + g below)	$0.00	$68,277.00	$140,650.62	$241,450.20	$348,171.18	
a. Number of F/T Students	0	3	6	10	14	Because we did not market this new major when recruiting students for Fall 2019, any students who might declare this major in Year 1 will be already-enrolled students. Therefore, we are projecting no NEW students and no additional tuition revenue during Year 1 attributed to this program.
b. Annual Tuition/Fee Rate	$0.00	$22,759.00	$23,441.77	$24,145.02	$24,869.37	
c. Total F/T Revenue (a x b)	$0.00	$68,277.00	$140,650.62	$241,450.20	$348,171.18	
d. Number of P/T Students	0	0	0	0	0	We have so few part-time undergraduates that we are not including part-time students in our projected enrollments.
e. Credit Hour Rate	0	0	0	0	0	
f. Annual Credit Hour Rate	$1,391.89	$1,433.07	$1,476.07	$1,520.35	$1,565.96	
g. Total P/T Revenue (d x e x f)	$0.00	$0.00	$0.00	$0.00	$0.00	
3. Grants, Contracts & Other External Sources	$0.00	$0.00	$0.00	$0.00	$0.00	
4. Other Sources	$0.00	$0.00	$0.00	$0.00	$0.00	
TOTAL (Add 1 – 4)	$0.00	$68,277.00	$140,650.62	$241,450.20	$348,171.18	

TABLE 2: PROGRAM EXPENDITURES:						
Expenditure Categories	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Narrative**
1. Faculty (b + c below)	$0.00	$0.00	$0.00	$0.00	$0.00	
a. Number of FTE	7.5	7.5	7.5	7.5	7.5	No new faculty needed. Projected new students: Y2 = 3 students, Y3 = 6, Y4 = 10, Y5 = 14, add new faculty for every 15 new students.
b. Total Salary	$0.00	$0.00	$0.00	$0.00	$0.00	
c. Total Benefits	$0.00	$0.00	$0.00	$0.00	$0.00	
2. Admin. Staff (b + c below)	0	0	0	0	0	
a. Number of FTE	0	0	0	0	0	We do not need to hire new administrative staff because the department within which this major will be offered has sufficient staffing.
b. Total Salary	$0.00	$0.00	$0.00	$0.00	$0.00	
c. Total Benefits	$0.00	$0.00	$0.00	$0.00	$0.00	
3. Support Staff (b + c below)	0	0	0	0	0	
a. Number of FTE	0	0	0	0	0	We do not need to hire new support staff because the department within which this major will be offered has sufficient staffing.
b. Total Salary	$0.00	$0.00	$0.00	$0.00	$0.00	
c. Total Benefits	$0.00	$0.00	$0.00	$0.00	$0.00	
4. Technical Support and Equipment	$0.00	$0.00	$0.00	$0.00	$0.00	All technical support and equipment is already available through existing departments which will offer courses in this program.
5. Library	$0.00	$1,506.00	$1,566.24	$1,628.89	$1,694.05	Cost of adding 4 new journals. Other resources are already available through existing databases. Assumes annual 4% increase.
6. New or Renovated Space	$0.00	$0.00	$0.00	$0.00	$0.00	
7. Other Expenses	$0.00	$603.00	$1,206.00	$2,010.00	$2,814.00	Based on current operating budgets, the cost per student in Math/Computer Science = $346 and in Business/Econ = $30. Based on the proportionate contributions of each department to this major (54%/46%), the cost per student = 201 X new student projections.
TOTAL (Add 1 – 7)	$0.00	$2,109.00	$2,772.24	$3,638.89	$4,508.05	