JCEC

Jackson County
Early College

Student Guidelines

JACKSON COUNTY EARLY COLLEGE

Mission

Offer an inclusive Early College program designed to encourage students from all backgrounds and socio-economic levels to earn college credits, a degree, or a certification so they are prepared for a meaningful and successful career in the community.

Vision

Jackson County Early College will provide students and parents an exceptional academic experience that promotes student success in a college environment while reducing the time and expense of a college education.

Goals

- Develop a skilled workforce to meet the employment needs of Jackson County businesses.
- Prepare students as they transition from high school to college to career.
- Provide a quality college experience at little cost to families.
- Improve the high school and college completion rate for Jackson County students.

Design Principles of Jackson County Early College (JCEC)

1. **College- Focused Academic Program – emphasizing a career pathway.**
2. **Comprehensive Student Support – helping students adjust to college life.**
3. **Dynamic High School/College Partnerships – working together to benefit students.**
4. **Culture of Continuous Improvement – implementing best practices.**

- Students enroll in high school and college classes – simultaneously.
- College tuition and fees are paid by the district provided the amount of state aid generated for the courses is enough to cover the expense.
- Students may earn an Associate degree, a certificate, or up to 60 transferable college credits.

Each district has the right to determine if students are academically ready to participate in JCEC. Students should discuss college-readiness standards in their districts with their school counselors.

JCEC students are required to adhere to their districts' student handbooks, as well as Jackson College's student handbook, and the expectations outlined in this document.

JCEC website: www.jxncec.org

Jackson County Early College (JCEC) falls under the direction of the Michigan Early Middle College Association (MEMCA). This organization provides oversight of the responsibilities of JCEC. Through MEMCA, JCEC has established guidelines for students in regard to College & Career Readiness standards. The expectations for JCEC students will include curriculum that prepares them for post-secondary success, as well as work-related and community service opportunities.

Important Phone Numbers and Contact Information

Name	Position	Email	Phone
Jean Logan	**JCEC Administrator**	**jlogan@jccmi.edu or info@jxncec.org**	**517.581.2003**
Mike Reynolds	**JCEC Administrator**	**Mike.reynolds@jcisd.org**	**517.745.7634**
Christopher Kimball	**Director of JCEC**	**KimballChristoL@jccmi.edu**	**517.990.1432**
Corey Lewellyn	**Success Navigator**	**lewellycorey@jccmi.edu**	**517.990.1319**
Jerry Thompson	**Success Navigator**	**ThompsoGeraldJ@jccmi.edu**	**517.990.1459**
Jamie Witt	**Success Navigator**	**WittJamieA@jccmi.edu**	**517.990.1413**
Taylor Hudson	**Success Navigator**	**HudsonTaylorM@jccmi.edu**	**517.796.8548**
Mayce Nunez	**Success Navigator**	**nunezmaycej@jccmi.edu**	**517.990.1451**
Denise Cough	**Administrative Assistant**	**denise.cough@jcisd.org**	**517.990.8070**
Jackson College Bookstore			**517.796.8440**
Cashier's Office		**jccashier@jccmi.edu**	**517.796.8420**

Helpful Web Links

Jackson County Early College	**www.jxncec.org**
Jackson College Home Page	www.jccmi.edu
JCEC Information/Dual Enrollment	www.jccmi.edu/admissions/admissions-high-school-students/
Jackson College Programs of Study	www.jccmi.edu/academics/programs-of-study/
Transfer Equivalencies	www.michigantransfernetwork.org/
Jackson College Academic Calendars	www.jccmi.edu/academics/academic-calendar/
Jackson College –Payment Options	www.jccmi.edu/financial-aid/payment-options
Michigan Transfer Agreement	www.jccmi.edu/academics/transfer/transfer-options/michigan-transfer-agreement/?
Student Complaints/Appeals	www.jccmi.edu/services-support/student-services/student-resolution-advocate/student-complaints-and-appeals/?
Solution Center/Tech Help	www.jccmi.edu/services-support/technology-support/?
Center for Student Success/Tutoring	www.jccmi.edu/services-support/academic-support/center-for-student-success/?

Educational Development Plan

After students have completed the application and are successfully enrolled in JCEC, an educational development plan will be developed in collaboration with the student, school counselor, and Jackson College Success Navigator. These plans are updated annually to verify a student's progress for several reasons:

- To determine a student will meet high school graduation requirements;
- To monitor progress toward the student's career pathway;
- To prepare the student for transfer to a four-year college or university.

Since this program is a five-year high school program, students ***must take a math or math-related course in their final year to fulfill Michigan Department of Education high school graduation requirements.***

The intent of JCEC is to develop an Educational Development Plan specifically devised to support the career pathway of each student. The college coursework that a student is able to complete depends on different variables:

- Coordination of required high school courses needed for graduation and coursework at the postsecondary level;
- Commitment and responsibility toward college coursework;
- Time-management capabilities.

Students have three options in the Early College program:

1. Earn up to 60 transferable credits;
2. Earn a certificate;
3. Earn an Associate's degree.

Programs of Study

Jackson College offers several career pathways and more than 30 certificate programs. A student's course of study will be determined by his/her career interests. Students begin their college coursework with FYS 110, a College & Career Readiness course. Many of the initial courses in which students will be registered are Michigan Transfer Agreement (MTA) classes. These are general education courses and transfer to any public college or university in Michigan if the student has successfully completed them with a 2.0 or higher. Jackson College participates in several articulation agreements with colleges and universities around the state. It is important that students communicate their future plans with their navigators when registering for classes to plan for transfer to another college or university.

Academic Achievement

In order to maintain academic expectations set by the JCEC program, students will adhere to the academic achievement expectations which are intended to keep the focus on education as students take coursework at post-secondary institutions as well as their local high schools. Failure to meet academic expectations will result in probationary action and possible dismissal from the JCEC program.

Academic Achievement Expectations

As the JCEC program is an academic-based program, the student's home school, Jackson College, and parents are committed to the academic success of the student. Therefore, the following guidelines have been established. These actions may be taken should the student's grade point average fall to an unacceptable level.

Before a student will be enrolled in any Early College course, signatures will be required from:

1. ***The student***
2. ***The student's parent/guardian***
3. ***The high school counselor***

It is expected that the student will maintain a GPA of 2.0 or higher (this means a letter grade of "C" or higher) through the entirety of this program in all classes (high school and college) associated with the JCEC program.

Level 1: In the event the student's GPA falls below 2.0 at any point during the semester/trimester, the student needs to seek tutoring, contact the instructor, and communicate with their Navigator and Jean Logan.

Level 2: A student who is struggling academically, and whose grades do not improve to 2.0 or higher will be required to attend or participate in tutoring. The student will also be required to report to a JCEC staff member weekly.

Level 3: A student whose GPA does not improve to at least 2.0 during the semester/trimester may be dismissed from the JCEC program and is subject to the terms of the reimbursement agreement between the student and this/her local district.

College Class Failure Notice: A student who fails one (1) college class may be required to repay the local school district for his/her portion of the course cost depending upon the district's guidelines. Should a second college class be failed, the student will be required to repay the school district, and the student may be dismissed from the JCEC program.

These expectations are not intended to be punitive in nature. Each incident will be reviewed on a case-by-case basis. Students having trouble in maintaining acceptable grades are strongly encouraged to seek assistance from the Early College Administrator, Success Navigators, parents, instructors, counselors, tutors, employers, etc.

Opting Out of Early College

If a student determines Jackson County Early College is not the appropriate pathway, he/she must submit an "Opt-Out" form to the Early College Administrator. The form will require signatures from the student, the student's parent/guardian, high school counselor, and Early College Administrator. This form is located in the appendix.

JCEC Focuses on Success

Student success is the primary focus of the JCEC program. However, when expectations are not being met, dismissal from the program may occur. Possible ways to be dismissed from the JCEC program:

1. Academic Achievement expectations are not being met.
2. Student discipline issues at Jackson College or at the local district are occurring.

An intervention plan may be implemented for students who are struggling to meet the expectations of Jackson County Early College.

Course Materials/Textbooks

The cost of course materials and textbooks may be paid by a student's school district. Students should check with the school counselor for expenses paid by the district and the process for obtaining materials and textbooks. ***ALMOST ALL OF JACKSON COLLEGE'S COURSES HAVE DIGITAL TEXTBOOKS. BE SURE TO READ YOUR COLLEGE COURSE SYLLABUS FOR VERIFICATION.***

Textbook Rental

Students may also rent textbooks at a substantial cost savings. Jackson College Bookstore rents textbooks. Other options include Chegg, Amazon, and Barnes & Noble. Books must be returned at the end of each semester, otherwise students will be charged for the full cost of the book.

Textbook Purchase

Students also have the option of purchasing textbooks. Used textbooks are much less expensive than new editions. Textbooks may be purchased at the Jackson College Bookstore, but may also be available elsewhere.

Final Year – Math or Math-Related Course

All students are required to enroll in a math or math-related course during their final year. Each district has courses that satisfy this requirement. Jackson College also offers courses that will fulfill this stipulation. Math and math-related courses offered by Jackson College are located in the appendix.

Earning College Credit Through Advanced Placement

College credit may be granted to students who have received a qualifying score on an associated Advanced Placement test.

To receive credit for AP exams/scores requires that student exams and scores appear on an official high school transcript or that the student submit an official AP Score Sheet. The official AP Score Sheet should be sent to:

JC Office of the Registrar
Jackson College
2111 Emmons Road
Jackson, MI 49201

If you need to request your AP test score sheet, simply write
Advanced Placement, Box 977-IS
Princeton, New Jersey 08541
Or call: 609-771-7600

Jackson College			
College Board Advanced Placement Program			
AP Subject	**Score**	**Credit**	**JC Course**
United States History	5, 4, 3	6 credits	HIS 231, 232
	2, 1	no credit	
Art History	5, 4	6 credits	ART 111, 112
	3, 2, 1	no credit	
Studio Art: 2-D Design	5, 4	3 credits	ART 101
	3, 2, 1	no credit	
Studio Art: Drawing	5, 4	3 credits	ART 103
	3, 2, 1	no credit	
Biology	5, 4	8 credits	BIO 161, BIO 162
	3	4 credits	BIO 161
	2, 1	no credit	

Calculus AB	5, 4, 3	4 credits	MTH 151
	2, 1	no credit	
Calculus BC	5, 4, 3	9 credits	MTH 151, 154
	2, 1	no credit	
Chemistry (only)	5, 4	8 credits	CEM 141, 142
	3	4 credits	CEM 131 or 141
	2, 1	no credit	
Computer Science A (only)	5, 4	2 credits	General CPS credit
	3, 2, 1	no credit	
Computer Science AB (only)	5	5 credits	General CPS credit/waive CPS 175
	4	2 credits	General CPS credit
	3, 2, 1	no credit	
Environmental Science	5, 4, 3	4 credits	BIO 158
	2, 1	no credit	
Microeconomics	5, 4	3 credits	ECN 232
	3, 2, 1	no credit	
Macroeconomics	5, 4	3 credits	ECN 231
	3, 2, 1	no credit	
English Language and Composition	5, 4	3 credits	ENG 131
	3, 2, 1	no credit	
French Language	5	8 credits	FRN 231, 232

	4	4 credits	FRN 231
	3, 2, 1	No credit	
German Language	5	8 credits	GER 231, 232
	4	4 credits	GER 231
	3, 2, 1	no credit	
Government and Politics: United States	5, 4	3 credits	PLS 141
	3, 2, 1	no credit	
Government and Politics: Comparative	5, 4	3 credits	PLS 141
	3, 2, 1	no credit	
Physics “C” Mechanics	5, 4	4 credits	PHY 251
	3, 2, 1	no credit	
Physics “C” Electricity & Magnetism	5, 4	4 credits	PHY 252
	3, 2, 1	no credit	
Physics “B”	5, 4	8 credits	PHY 231, 232
	3, 2, 1	no credit	
Psychology	5, 4	4 credits	PSY 140
	3, 2, 1	no credit	
Statistics	5, 4	4 credits	MAT 133
	3, 2, 1	no credit	
Spanish Language	5	8 credits	SPN 231, 232
	4	4 credits	SPN 231

	3, 2, 1	no credit	

Educational Support Services

Jackson County Early College and Jackson College provide services for students to support their academic success as they transition from high school to college. Specifically for Early College students, the following supports are included in the program:

1. Mentors for Early College students including the Early College Administrator and Success Navigator dedicated solely to the Early College.
2. College/Career-Readiness activities designed to help all students develop the skills, inner qualities and external behaviors needed to take charge of their academic and career success. Students will be guided through an extensive process in making career choices and selecting an academic program of study at Jackson College and beyond.
3. Prior to beginning college classes, Early College students will participate in Success Camp. During camp, students will review the expectations for Early College, learn success strategies for college students, tour the facilities and amenities, and discover the "how-tos" – how to find people/departments, purchase materials at the bookstore, read their schedule, and find their classes.
4. Supporting Parents of Early College Students. Informational meetings with parents of EC students are available before entrance to Early College, during Early College, and upon exit from the program. Training and resources will be provided to help parents help their students be successful college students.
5. Personalized Career Planning & Advising. Each student will be assigned a Success Navigator who has the responsibility for monitoring a student's progress, career pathway, and educational intent upon exit from Early College. The Success Navigator will collaborate with his/her assigned students to ensure that the students are enrolled in courses that support future educational/career plans.

FYS 110 – Navigating College & Life

Students will develop and apply soft skills such as self-management, emotional intelligence, interdependence and resiliency in order to promote success in education and in life. Learners will become better equipped as self-advocates in navigating the academic advising and financial aid systems of higher education. Student Education Plans (SEP) and the Life Maps Project will be completed and academic success strategies are introduced and reinforced throughout the course.

The Jackson County Early College program is required to provide curriculum that addresses the College and Career Readiness standards established by the Michigan Department of Education. These standards have been developed to prepare students for the challenges of post-secondary education and training.

FYS110 is designed to address those standards and include:

1. Career Exploration
2. Contextualized Academics

3. Career Preparation
4. Out-of-School Time/Family Engagement
5. Career Interest Inventories and Activities
6. Career Planning
7. Educational Development Plan (EDP)
8. Talent Portfolio

The Role of the School Counselor

Early College students will meet with their high school counselors for guidance from 9th grade through 12th grade in collaboration with the designated Success Navigator and Early College staff. In the 13th year, the Early College Administrator and Success Navigator become the primary academic support. The school counselor and Success Navigator work with each student to develop the 5-year Educational Development Plan and revise it at least annually. The EDP guides course selection in Early College as well as progress toward high school graduation. The school counselor's and Success Navigator's roles are to transition students from high school to college by monitoring progress, developing appropriate schedules, and supporting students in a variety of ways.

Student Success Navigator

The Student Success Navigator will be a critical mentor in planning college coursework in collaboration with the school counselor. The Navigator meets with students beginning with the application process and will be deeply involved in the creation of the Educational Development Plan and advising students on appropriate college courses for the intended career pathway. The Navigator will also coach students on transfer options for other colleges and universities.

The Early College Administrator/Assistant Administrator

The Early College Administrators (ECA) will serve as mentors in the program and will support the student through each step of Early College. The ECA will monitor student progress in coursework and provide opportunities in college and career readiness. The ECA also works closely with staff in the local districts to coordinate services for students.

Students will be required to maintain frequent contact with the Early College Administrators including personal consultation, email, Zoom, and phone.

Appendix

Contents:

EARLY COLLEGE EDUCATIONAL DEVELOPMENT PLAN:
JACKSON COLLEGE ADVISOR REVIEW AND RECOMMENDATIONS

Program of Study for Early College :

Career Pathway:

Student:

Current Grade:

Date:

	9th Grade/ Year 1	10th Grade/ Year 2	11th Grade/ Year 3	12th Grade/ Year 4	13th-Year/ Year 5
First Semester	District Courses: EC Course(s) (include class #, name & credits) HS Credits earned in Middle School/Jr. High:	District Courses: EC Course(s) (include class #, name & credits)	District Courses: EC Course(s) (include class #, name & credits)	District Courses: EC Course(s) (include class #, name & credits)	EC Course(s) (include class #, name & credits) **5th Year Math Course:**
Second Semester	District Courses: EC Course(s) (include class #, name & credits)	District Courses: EC Course(s) (include class #, name & credits)	District Courses: EC Course(s) (include class #, name & credits)	District Courses: EC Course(s) (include class #, name & credits)	District Courses: EC Course(s) (include class #, name & credits)
	# EC credit hours	**# EC credit hours**	**# EC credit hours**	**# EC credit hours**	**# EC credit hours**

Advisors: (Jackson College advisor Name Here) ECA: Jean Logan jean.logan@jcisd.org School District Counselor: (Name Here)

EARLY COLLEGE EDUCATIONAL DEVELOPMENT PLAN:
JACKSON COLLEGE ADVISOR REVIEW AND RECOMMENDATIONS

Student Name:
Student High School:
Jackson College Educational Program:
Placement Scores: (provided by home district)
Advisor Conducting Review:

NOTES:

Early College Educational Development Plans are initially developed by high school counselors, in cooperation with the Early College Administrator. Since transfer requirements vary from program to program and institution to institution, Jackson College is not able to guarantee the appropriateness or transferability of specific courses on specific Early College Educational Developmental plans. Students who have selected a specific long-term educational goal and/or transfer school are encouraged to meet with a Jackson College advisor as early as possible to make adjustments to their programs, as necessary, to meet their specific transfer goals. In addition, although Jackson College makes every effort to offer and run courses as indicated by the Master Schedule, it is not able to guarantee that courses will always be offered or run as indicated on specific Early College Educational Development plans. In reviewing specific Early College Educational Development Plans, Jackson College advisors assume that students will have completed the necessary prerequisite courses and/or achieved the necessary test scores to begin taking Jackson College courses as indicated on the specific Educational Development Plan. Although Jackson College advisors may make suggestions when reviewing Early College Educational Development Plans, they are primarily concerned with determining that course sequencing is correct, and that successful completion of all of the courses indicated on the plan will result in the student receiving the Certificate or Degree indicated on the plan.

JCEC College & Career Readiness Activity Sheet

Student Name:	
District:	
Current Grade:	
Current School Year:	

Volunteer Service:

Activity	Location	Supervisor	Supervisor's Phone Number or Email	Days/Times	Total # of Hours

Employment:

Position	Location	Supervisor	Supervisor's Phone Number or Email	Postion Began/Ended	Hours/Week

College Readiness: (XELLO, FYS 110, College Visits, Job Shadowing, Work-Basked Learning, EDP tasks, etc.)

Activity	Location	Supervised/Verified by	Supervisor's Phone Number or Email	Date	# of Hours

OPT-OUT FORM

Early College

Jean Logan, Early College Administrator
info@jxncec.org

5tudentNam.e:

District.'

I, _____, am officially withdrawing from the Jackson County Early College program. I understand that I will be unable to re-enroll at a later date,

Select this box !rf yau niish to have yourlackson College courses dropped.

Student signature: _____

Date: _____

Parent signature: _____

Date: _____

Counselor Signature: _____

Date: _____

Earl College Administrator signature: _____

Date: _____

Please return this document to your high school counselor.

67tX/ Brass Lake Boad
Jackson, MI 49201

Michigan Transfer Agreement

The Michigan Association of Collegiate Registrars and Admissions Officers (MACRAO) Articulation Agreement facilitates the transfer of students from community colleges to four-year colleges and universities in Michigan. By carefully choosing courses, students may obtain an associate degree from Jackson College and complete the Michigan Transfer Agreement (MTA). However, students do not need to obtain a degree to earn the MTA designation. If students meet all the requirements of the agreement, they should contact the Registration & Records Office and request the MTA designation on their transcripts.

More information can be found at http://www.macrao.org/ Publications/MTA.asp

Requirements of the Michigan Transfer Agreement
• Minimum 30 credits
• Minimum grade 2.0 for each course

Note: This list reflects only current courses. The Registrar's Office maintains a historical listing of courses that are accepted as part of MTA.

TAKE 30 CREDITS FROM:

ENGLISH COMPOSITION AND COMMUNICATIONS
(2 courses, 1 of which must be Composition)

English (ENG) 131, 132, 201*, 232
Communications (COM) 231, 240, 250
*Please note: ENG 201 Advanced Composition (3 credits) is a by-invitation-only English course that may be substituted for ENG 132.

QUANTITATIVE REASONING
(at least 1 course)
Mathematics (MAT) 130, 133, 135, 139, 141, 151, 154, 251, 254

NATURAL SCIENCE
(at least 2 courses from two disciplines; 1 must be laboratory science) Courses that are not lab science are marked with an *.
Biology (BIO) 110, 132, 140*, 158, 161, 162, 220, 231, 232, 253, 254
Chemistry (CEM) 131, 132, 141, 142
Geology (GEL) 109, 160 Natural Science (NSC) 131
Physics (PHY) 131, 150*, 151, 231, 232, 251, 252

SOCIAL SCIENCE
(at least 2 courses from two disciplines)
Anthropology (ANT) 131
Criminal Justice (CRJ) 111, 117
Economics (ECN) 231, 232
Geography (GEO) 131, 132
History (HIS) 211, 231, 232, 235
Psychology (PSY) 130, 152, 245, 251, 252, 290
Political Science (PLS) 141
Sociology (SOC) 117, 152, 231, 236, 246

HUMANITIES
(at least 2 courses from two disciplines)
Art (ART) 111, 112
English (ENG) 210, 236, 246, 247, 249, 252, 254, 255, 256, 257
French (FRN) 131, 132
German (GER) 131, 132
History (HIS) 120, 131, 132
Humanities (HUM) 131
Music (MUS) 130, 131, 132, 151, 152
Philosophy (PHL) 231, 232, 243
Spanish (SPN) 131, 132, 231, 232
Theatre (THR) 116

MATH/MATH-RELATED COURSES FOR JCEC STUDENTS

Course	Title	Prerequisite (Math Related)	Course Description
ACC 214	Income Tax Accounting	MAT-030 or Higher	The student will learn current tax laws and how to apply them by preparing complex tax returns on the appropriate IRS forms. Both individual and small business tax returns will be studied and prepared. The student will have the choice of preparing the returns manually and/or using a popular tax software package.
ACC 216	Financial Accounting Concepts	MAT 030 or Higher	This course is designed for the non-accounting supervisor/manager who must have an understanding of financial and managerial accounting as it is used in decision making. Learn about annual reports, financial statements, balance sheet accounts and accounting transactions. Focus on how accounting information is used in decision making and not on the mechanics behind that accounting information. This is an introductory accounting course required for some BUS,CIS and HOC programs. Students should consider their academic program and select either ACC 216 or ACC 231 for their introductory accounting course.

ACC 231	Principles of Accounting	MAT 033 or Higher	This course is an introductory course in Financial Accounting. Learn the theory and practice of recording financial accounting data and preparation of financial statements in accordance with Generally Accepted accounting Principles (GAAP)with an emphasis on coprorations. Current software and online applications will be utilized.
ACC 232	Principles of Accounting II	ACC 231 / MAT 033	This course is an introductory course in Managerial Accounting. Learn how accounting impacts managerial decision making. Topcis include stocks, bonds, cash flow, cost accounting, break-even analysis, differential analysis, financial statements and budgeting. Current software and online applications will be utilized.
ACC 234	Managerial Accounting	ACC 232	Management level professionals from all disciplines will be faced with complex situations and decisions. Appropriate managerial accounting reports and critical thinking skills are crucial to a pro-active management process. Learn about financial statement analysis, cash flow forecasting, job order costing in manufacturing, process costing in manufacturing, activity based costing in manufacturing, cost-volume analysis, cost behavior analysis, budgeting, responsibility accounting, case study analysis, critical thinking and decision making skills. Prerequisite: ACC 232
ACC 240	Intermediate Accounting	ACC 231	Professional accountants must have a solid background in GAAP financial accounting concepts. Review and expand your knowledge of accounting theory and processes, nature and content of the balance sheet and income statement, present value tables and their application, currently applicable Generally Accepted Accounting Principles (GAAP) and recent Financial Accounting Standards Board (FASB) pronouncements. Prerequisite: ACC 231

BIO 161	Biology I	MAT 033 or higher	Biology 161 is the first semester of a one year general biology experience intended for science majors or pre-professional students. This course covers nature of science, a survey of the major groups of living organisms (bacteria, fungi, plants and animals), the process and evidence for evolution, and the fundamentals of ecology. It provides the foundation for upper level biology courses. This course includes a laboratory component which includes dissection of preserved specimens.
BUA 111	Personal Finance	CIS-095 / ENG 091	Provides a fundamental knowledge of financial concerns including financial services, stocks, bonds, budgeting, insurance, real estate, estate and tax planning, buying on credit, borrowing, saving, investing intelligently, and retirement. Analysis of personal objectives to financial planning will be discussed and put into practice.
CEM 131	Fundamentals of Chemistry	ENG-085 / MAT 033 or Higher	Fills requirement for some non-science majors. Provides background for CEM 141 for those with no recent high school chemistry. Fundamental principles of chemistry such as states of matter, simple atomic and molecular structure, and the periodic classification of elements. The study of water emphasizes the properties of solutions and acid-base relations.Course includess a laboratory component.Course includes a laboratory component.
CEM 132	Fundamentals of Organic & Biological Chemistry	CEM 131	This course is an extension of material covered in CEM 131. It is required in many Bachelor's degree programs, including nursing. Organic topics include the structure, physical properties and chemical behavior of the major classes of organic compounds. The structure, functions, formation and reactions of carbohydrates, fats, proteins, and nucleic acids are covered, including enzymes, chemical messengers, and biochemical energy production.Course includes a laboratory component.
CEM 141	General Chemistry I	ENG 091 / MAT 130 or Higher	This course is required for most sciences, engineering, and pre-professional health majors. Students who are required to take organic chemistry for their major should enroll in CEM 141 during their first semester. Topics include atomic and molecular structure, periodicity, chemical bonding, states of matter, kinetic molecular theory and stoichiometry. Recommendation: Recent algebra success.Course includes a laboratory component.Course includes a laboratory component. Replaces CEM 151.

CEM 142	General Chemistry II	CEM 141	This course is the second semester of general chemistry and extends material covered in CEM 141. Covered concepts include chemical thermodynamics, electrochemical reactions, reaction kinetics, acid-base theories, nuclear chemistry, and aqueous solutions with emphasis on equilibrium. Experiments include quantitative methods, stoichiometry, colorimetry, and gravimetric analysis.Course includes a laboratory component. Replaces CEM 152.
CEM 241	Organic Chemistry I	CEM 142	A comprehensive study of the major classes of organic compounds, their structures and reactions. The sterochemical properties and spectra (IR and NMR) of molecules and their mechanisms of reactions are stressed. The laboratory experiments demonstrate techniques used in organic reactions, syntheses illustrating types of reactions, analyses of major classes of compounds and kinetic studies.Course includes a laboratory component.
CEM 242	Organic Chemistry II	CEM 241	Continuation of CEM 241 - Contains Lab component
ECM 101	Ecommerce Fundamentals	CIS 095 / ENG 091 / MAT 030 or Higher	The course introduces revenue models for conducting business transactions globally with customers over the Internet. Topics include integrating e-business strategies with traditional storefront objectives, procuring hardware and software resources, optimizing web marketing opportunities, and complying with legal, ethical and regulatory restrictions. Student will apply concepts to real-life scenarios through active-learning strategies
ECN 231	Macroeconomics	ENG 085 / ENG 091 / MAT 130 or Higher	Covers macroeconomics. Explains the operation of free markets, the role of government in the economy, measurement of the national product, inflation and unemployment, monetary and fiscal policy, and economic growth.
ECN 232	Microeconomics	ENG 085 / ENG 091 / MAT 130 or Higher	Concerns micro-economics, the market structure of firms operating in competition and monopoly, labor markets and unions, how income is distributed, current economic problems, international economics, and alternative economic systems.
ELT 106	Basic Elec. & Fluid		This course will cover the principles of basic electrical, hydraulic, and pneumatic circuits. Students will learn how to identify components of electrical and fluid circuits, how to analyze circuits, and how to troubleshoot industrial systems. At the end of the course they will be able to take the Certified Production Technician Maintenance Awareness exam.

HOC 140	Pharmacy Technician Concepts & Calculations	MAT 130 or Higher	This course applies mathematics in the calculations required for determination of proper dosages, conversion operations, as well as preparation skills of parenteral solutions for injections, IVs, etc. Detailed instruction in the techniques used in dosage preparation and aseptic techniques will be demonstrated. Topics covered will include pharmaceutical and medical terms, abbreviations, and symbols commonly used in the prescribing, dispensing, charting medications, drug purchasing and inventory control concepts. This course will provide direction to students for Pharmacy Technician Certification Board (PTCB Exam) preparation.

MAT 030	Foundation of Math		This course is designed to prepare non-STEM major students for MAT 130, Quantitative Reasoning. Cultivates student skills in interpreting, understanding, and using quantitative information. Develops facility with numeracy, problem, solving strategies, proportional and statistical reasoning through a quantitative literacy lens. Fosters skills in reading and writing quantitative information. Emphasizes critical thinking and the use of multiple strategies in applied contexts.
MAT 033	Algebra for Stats		As an alternative pathway toward college-level mathematics, this course introduces fundamental algebra concepts within an underlying framework of statistics and mathematical modeling based on real-world data. Major concepts and themes include: problem solving and experimental design; unit analysis and error in measurement; dimensional analysis and scientific notation; representing data and coordinate graphing; introduction to basic descriptive statistics and probability theorems; basic geometric principles (area, volume, perimeter); arithmetic operations on numbers, ratios, summations, and percents; solution and manipulation of formulas; modeling relationships (linear and exponential regression); solving equations and inequalities; and function arithmetic and graphing. Appropriate technology includes a graphing calculator. The mathematics department recommends that the prerequisite not be more than two years old. If the prerequisite is more than two years old, then the recommendation is that the course placement exam be taken or the prerequisite be retaken to ensure the success of the student.
MAT 039	Beginning Algebra	Placement Exam	Students will build algebraic skills working with linear and quadratic expressions and equations. The course particularly emphasizes graphs and equations of lines, factoring techniques, and methods of solving quadratic equations. The mathematics department recommends that the prerequisite not be more than two years old. If the prerequisite is more than two years old, then the recommendation is that the course placement exam be taken or the prerequisite be retaken to ensure the success of the student.

MAT 040	Quantitative Reasoning Fundamentals		Quantitiative Reasoning Fundamentals provides extra support for students concurrently enrolled in MAT 130 Quantitative Reasoning. The course will review mathematical topics needed to be successful in MAT 130, and will offer students the opportunity to review, ask questions, and receive extra help with the content of MAT 130.
MAT 130	Quantitative Reasoning	MAT 030 or 040	Quantitative Reasoning develops student skills in analyzing, synthesizing and communicating quantitative information. Cultivates algebraic reasoning and modeling skills through a quantitative literacy lens. Emphasizes critical thinking and ane the use of multiple strategies in applied contexts. Topics include proportional and statistical reasoning, probability, and evaluation of bias and validity.
MAT 131	Intermediate Algebra	MAT 039 or 130	This course emphasizes simplifying expressions, solving equations, and graphing functions, including linear, quadratic, polynomial, rational, radical, exponential and logarithmic. Problem solving and mathematical modeling are integrated throughout. Appropriate technology includes a graphing calculator. The mathematics department recommends the pre-requisite not be more than two years old. If the pre-requisite is more than two years old the recommendation is the course placement assessment be taken or the prerequisite be retaken to ensure the success of the student.
MAT 133	Introduction to Probability & Statistics	MAT 033 or MAT 130	This course is an introduction to experimental design, data representation, basic descriptive statistics, probability theorems, frequency distributions and functions, binomial and normal probability distributions and functions, probability density functions, hypothesis testing, statistical inference, Chi-square analysis, linear regression, correlation and application of the above in making informed, data driven decisions in real-world contests. Both graphing calculators and computer-based statistical software (MS Excel) will be used. If the prerequisite is more than two years old, then the mathematics department recommends the course placement exam be taken or the prerequisite be retaken to ensure the success of the student.

MAT 135	Finite Mathematics	MAT 039 or 131	This course is for student whose programs do not require trigonometry (or the Calculus sequence). The topics included are linear, exponential, quadratic, polynomial and logarithmic functions and models: systems of linear equations; linear regression; mathematics of finance and financial modeling; matrices, linear programming; permutations; combinations, probability theory; probabilistic simulations; decision theory; descriptive statistics; and Markov chains. The mathematics department recommends the pre-requisite not be more than two years old. If the pre-requisite is more than two years old the recommendation is the course placement assessment be taken or the prerequisite be retaken to ensure the success of the student.
MAT 139	College Algebra	MAT 039 or MAT 131	Algebraic functions, graphs and models are addressed. Emphasis is placed on the following function types: polynomial, exponential, logarithmic, rational and radical. In all topic areas, covered content includes simplifying expressions, solving equations, graphing using transformations, mathematical modeling and problem solving.
MAT 141	Precalculus	MAT 139	This course's major emphasis is on the concept functions. Study polynomial, rational exponential, logarithmic, trigonometric and inverse trigonometric functions, their properties, graphs and related equations and applications. Additional topics include systems of equations, matrices and conic sections. A graphing calculator is required and used extensively. The mathematics department recommends the pre-requisite not be more than two years old. If the pre-requisite is more than two years old, the recommendation is the course placement exam be taken or the pre-requisite be retaken to ensure the success of the student

MAT 151	Calculus I	MAT 141	First calculus course for business, mathematics, engineering and science students explores introductory plane analytic geometry, the derivative, the integral and their applications for algebraic, trigonometric, exponential and logarithmic functions. The mathematics department recommends that the prerequisite not be more than two years old. If the prerequisite is more than two years old, then the recommendation is that the course placement exam should be taken or the prerequisite be retaken to ensure the success of the student.
MAT 154	Calculus II	MAT 151	This course explores the following topics: methods and applications of the derivative and integral for inverse trigonometric and hyperbolic functions, indeterminate forms, series and polar/parametric representation of functions. Graphing calculator required. The mathematics department recommends the pre-requisite not be more than two years old. If the pre-requisite is more than two years old, the recommendation is the course placement exam be taken or the pre-requisite be retaken to ensure the success of the student
MAT 210	Foundations of Mathematics	MAT 131 or Higher	This course provides background material for students preparing to teach at the elementary level and emphasizes the structure and properties of the number system. It also covers concepts, models in algorithms for whole numbers, integers, fractions, decimals and percents. Some additional hours of on-site field work may be required. The mathematics department recommends that the prerequisite not be more than two years old. If the prerequisite is more than two years old the recommendation is the course placement exam be taken or the prerequisite be retaken to ensure the success of the student.
MAT 211	Foundation of Mathematics II	MAT 210	This course will provide the second semester of math content for elementary education majors. It is a continuation course for MAT 210, Foundations of Mathematics I. Topics include probability and statistics, geometry and measurement. The mathematics department recommends that the prerequisite not be more than two years old. If the prerequisite is more than two years old then the recommendation is that the course placement exam be taken or the prerequisite be retaken to ensure the success of the student

MAT 251	Calculus III	MAT 154	Solid analytical geometry is integrated thought this course covering the calculus of vector valued functions, multivariable functions, and vector fields with applications. Graphing calculator required. The mathematics department recommends that the prerequisite not be more than two years old. If the prerequisite is more than two years old then the recommendation is that the course placement exam be taken or the prerequisite be retaken to ensure the success of the student.
MAT 254	Differential Equations	MAT 154	Explore solutions of first order differential equations, linear differential equations with constant coefficients, variation of parameters, series solutions, Laplace transforms, eigenvectors and eigenvalues and application to solution of systems of linear first order equations. Graphing calculator required. The mathematics department recommends that the prerequisite not be more than two years old. If the prerequisite is more than two years old then the recommendation is that the course placement exam be taken or the prerequisite be retaken to ensure the success of the student.
MED 135	Pharm & Med Math	Take MED-120 or MOA-120; Minimum Grade 2.5. - Must be completed prior to taking this course. Take MED 125 or BIO 132 or BIO 253 and BIO 254; - Must be completed prior to taking this course.	The course covers the top 50 prescribed medications along with how to perform math conversions and dosage calculations.
MFG 136	Blueprint & Measurement	None	This course will provide students with in depth knowledge of how to read blueprints and technical drawings, and use gauges to obtain precise measurements. Topics covered include print reading, measurement, tolerancing, and quality. Students may sit for Certified Production Technician exam in Production Quality at the end of the course.

NRS 116	Pharmacology	MAT 133 / BIO 132	This course introduces students to basic principles of drug actions and nursing implications within the framework of the nursing process. Students will develop clinical reasoning and drug computation skills necessary to safely administer medications in a cultrually responsive, client-centered manner.
PHY 131	Conceptual Physics	ENG 085 / MAT 030 or Higher	Become familiar with basic concepts used in physics to describe and explain various physical phenomena. The course covers the following topics: kinematics (the description of motion); mechanics (the study of force, momentum, and energy); the behavior of solids, liquids and gases; temperature and heat; waves and sound; electricity and magnetism; and optics. The course is designed to familiarize the student with the basics of physics using a minimum of mathematics.Course includes a laboratory component.Course includes a laboratory component.
PHY 150	Concepts in Astronomy	ENG 085 / MAT 033 or Higher	A one semester conceptual astronomy course for non-science majors. This is a survey course that focuses on four broad content categories: the motions of the sky, the solar system, light & stars, and the universe. The emphasis of the course is on critical thinking about specific topics in these categories with a minimum of mathematics. There is no laboratory component.
PHY 151	Astronomy	ENG 085 / MAT 033 or Higher	A one semester conceptual Astronomy course for non-science majors. This is a survey course that focuses on four broad content categories: motions of the sky, the solar system, light and stars, and the universe. The emphasis of the course is on critical thinking about specific topics in these categories. The course has an associated laboratory in which students run experiments to verify the concepts presented. The mathematical skills necessary for this course include working with ratios, rates, scaling, unit conversion, percentages, exponents, graphing, basic geometry and substitution into formulas.
PHY 231	College Physics I	MAT 131 or Higher	Students who are pre-professional and engineering technology students explore kinematics, mechanics, dynamics, thermodynamics, acoustics, and general wave motion. Course includes a laboratory component.

PHY 232	College Physics II	PHY 231	Students cover topics in electricity, magnetism, and modern physics. A continuation of PHY 231. Course includes a laboratory component.
PHY 251	Modern University Physics	MAT 151 or Higher	Students cover classical mechanics, thermodynamics, and wave motion. This course should be elected by all science and engineering students
PHY 252	Modern University Physics II	PHY 251	Students cover topics in classical electricity and magnetism, optics, special relativity, and modern physics. A continuation of PHY 251.
PSY 144	Introduction to Probability & Statistics for Behavioral Research	MAT 033 / MAT 130 or Higher	This course is an introduction to experimental design, data representation, basic descriptive statistics, probability theorems, frequency distributions and functions, binomial and normal probability distributions and functions, probability density functions, hypothesis testing, statistical inference, Chi-square analysis, linear regression, correlation and application of the above in making informed, data driven decisions in real-world contests. Both graphing calculators and computer-based statistical software (MS Excel) will be used.

It is the policy of the Jackson County Intermediate School District not to discriminate on the basis of race, color, religion, national origin or ancestry, age, sex (including sexual orientation and transgender identity), marital status, height, weight or disability in its educational programs, activities or employment as required by federal laws (Title VI of the Civil Rights Act of 1964, Section 504 of the Rehabilitation Act of 1973, or Title IX of the Educational Amendment of 1972) and state law (Michigan Persons with Disabilities Civil Rights Act and Elliott-Larsen Civil Rights Act). In addition, arrangements can be made to ensure that the lack of English speaking skills is not a barrier to admission or participation. Board policies related to discrimination may be reviewed on our website: www.jcisd.org or www.neola.com/jacksonisd-mi/. Designated coordinators are the Human Resources Director, Kratz Education Center; the Principal of the Jackson Area Career Center; and the Principal of the Torrant Center and Kit Young Centers. Contact Information: JCISD Title IX Coordinator, 6700 Browns Lake Road, Jackson, MI 49201; Phone 517-768-5200; Fax 517-768-5296; TDD – Hearing Impaired 800-356-3232.

For further information, you may also contact: Office for Civil Rights, U.S. Department of Education, 600 Superior Avenue East, Suite 750, Cleveland, OH 44114-2611; Phone 216-522-4970; Fax 216-522-2573; TDD – 877-521-2172. E-mail: OCR.Cleveland@ed.gov