For more information or questions, contact:

**John A. Johnson Senior High School**
1349 Arcade Street  
Saint Paul, Minnesota 55106

Main Office  
(651) 293-8890

School Counseling Office  
(651) 290-8396

FAX  
(651) 293-8895

**Administrative Team**
Micheal Thompson, Principal  
Steve Taylor, Assistant Principal  
Maureen Seibert, Assistant Principal  
Kevin Davis, Assistant Principal  

**School Counselors**
Can dy Pagel, Counselor  
John Eschenbacher, Counselor  
Ker Yang, Counselor  
Song Lor, Counselor  
Samina Ali, Counselor  

**District 625 Administration**
Joe Gothard, Superintendent of Schools

**Board of Education**
Chauntyll Allen  
John Brodrick  
Zuki Ellis  
Jeanelle Foster  
Jessica Kopp  
Steve Marchese  
Marny Xiong

**Cover Image:** Dechia Xiong, *LAZY BIRDS*, Pencil, 2019
This Curriculum Guide has been developed by the administrative staff, school counselors, department chairs, teachers and other members of our Johnson community. We hope you will find it helpful as you select the most appropriate courses for your high school years. It contains current information on graduation requirements, registration procedures, course descriptions, standardized testing, and special programs unique to our school and is intended to be a well-used resource as you and your family complete your educational and career planning. Selecting courses is a very important process which should be made only after careful consideration of your abilities, future academic and career goals, and personal interests. Instructions for filling out registration forms can be found in appendix C of this guide. Please keep in mind that you are planning for four years at Johnson High School and preparing for your post-secondary education in the future. Therefore, students and parents are encouraged to choose classes thoughtfully.

Student choices will not be changed except in cases where computer errors were made or where a student was incorrectly assigned to an inappropriate level of a course. Students who do not submit course requests relinquish their opportunity to choose and will receive whatever courses are undersubscribed.

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More Information on School Programs at Johnson High School

The faculty and staff of Johnson High School want your high school years to be enjoyable and productive. We are constantly striving to make this school and its programs the finest available in Saint Paul.

Academic Enrichment

Advanced Placement (AP)
The Advanced Placement Program of the College Board provides a way for high schools to offer college-level courses to their more advanced students and for such students to demonstrate satisfactory achievement in those studies. Through this program students may earn college credit, exemption from requirements or placement in advanced courses when they enroll in college. Pre-AP and accelerated courses prepare students for a specific Advanced Placement course. For more information, see your guidance counselor. When students register for an AP course, they are promising to take the AP test in that subject area. For a full listing of Advanced Placement courses currently offered please see Appendix A.

Aerospace & Engineering Program
Investigate! Innovate! Initiate! The Aerospace & Engineering magnet program actively engages students in solving problems. Students seek to examine, understand and protect our planet and explore the universe beyond. Students search for solutions to design challenges using science, technology, engineering and mathematics. Contributing to this approach are Johnson’s Project Lead the Way pre-engineering classes.

College in the Schools (CIS)
This program allows students to take the equivalent of introductory college level courses at the high school site from a high school teacher who has been approved to teach the course, and may receive both college and high school credit for those classes. These classes are offered by the English Department, the Math Department, the Science Department, and the Social Studies Department. Depending on the course taken, credits are offered through the University of Minnesota or Saint Paul College.

Post-Secondary Enrollment Options (PSEO)
The Post-Secondary Enrollment Options Act was signed into law as part of the 1985 Omnibus School Aids Bill. It allows high school sophomores, juniors and seniors in public high schools to attend a Technical Institute or College, either full or part time, at no cost to the student. These students may enroll in any non-sectarian course at an eligible 2-year or 4-year institution-and earn high school and college credits simultaneously.

Various colleges have eligibility requirements and application deadlines that apply. Typically, juniors must be ranked in the top third and seniors must be ranked in the top half in order to qualify for PSEO. It is your responsibility to work with your college and to ensure that you have the necessary credits for graduation. You need to see your guidance counselor for entry requirements and details.

Sophomores are able to take one Career and Technical Education (CTE) class though PSEO if they are eligible. In order to be eligible, a 10th-grade student must have taken the 8th-grade MCA reading test in the 8th grade and have met the composite proficiency level of “meets or exceeds.” If the student meets this standard, they may be eligible to enroll in a CTE course, as identified by the Minnesota State Colleges and Universities system (MNSCU), if they meet the specific course requirements and pre-requisites of the CTE course in which they desire to enroll. This option is open to Minnesota public school students. Students who successfully complete the course, earning a grade of C or better, may enroll in additional CTE courses in subsequent semesters.

Saint Paul Career Pathways Academy
The Saint Paul Career Pathways Academy is a high school program located at Saint Paul College where students can explore careers, take career and technical education courses, and have the opportunity to earn high school and college credit.
Academic Support
Gordon Parks Evening High School and Harding East Side Hub
This after-school program was developed and designed as an alternative to the regular on-campus traditional high school. It is for students who have not had their educational needs met within the regular setting. Typically, students who have failed classes recover credits through after-school classes at Gordon Parks or the Harding East Side Hub. Students who need to make up credits should contact their school counselor for information on how to enroll.

Career Emphasis
Project Lead the Way (PLTW)
This national curriculum is the leading provider of rigorous and innovative Science, Technology, Engineering, and Mathematics (STEM) educational programs used in middle and high schools across the U.S. PLTW's comprehensive curriculum for engineering has been collaboratively designed by teachers, university educators, engineering professionals and school administrators to promote critical thinking, creativity, innovation and real-world problem solving skills in students. Johnson High School is the only certified PLTW high school in Saint Paul. By introducing high school students to these fields it hopes to attract more students to engineering, and allow students, while still in high school, to determine if engineering is the career they desire. Students participating in PLTW courses are better prepared for college engineering programs and more likely to be successful, thus reducing the attrition rate in these college programs.

College Access
AVID
Advancement Via Individual Determination (AVID) is a full year elective course designed to prepare students for college success. The AVID elective course focuses on many of the skills necessary for college success: academic study skills, time management skills, note taking skills, and cooperative learning strategies. Throughout the course of a week, students meet with their AVID cohort and receive two days of tutorial support, instruction in critical reading strategies such as Text Marking, Cornell Notes, and Socratic Seminar, as well as team building opportunities. Students are also given multiple opportunities to learn about college options through guest speakers and college visits.

College Possible
College Possible is a nonprofit organization in the Twin Cities that is dedicated to helping low-income high school students in the 11th and 12th prepare for and earn admission to college. College Possible identifies students with the motivation and potential for college, and then provides them with (1) SAT and ACT test preparation; (2) intensive guidance in preparing college applications; and (3) help in obtaining financial aid and (4) guidance in transition to college. Since its founding in 2000, College Possible has succeeded in helping 95% of its students earn admission to college.

Educational Talent Search
Talent Search identifies qualified students with potential for higher education and encourages them to complete secondary school and undertake a program of post-secondary education. The program focuses on the availability of student financial assistance and provides support in the areas of personal/social development, educational achievement, and career exploration. Interested students should talk to their counselors for details and an application form.

Upward Bound
The Upward Bound/TRIO Program at Century College is designed to assist high school students who have the ability to go on to college. This year-round enrichment program helps to prepare students for college through:
- Tutoring and academic skill building
- Social and cultural activities
- College and career awareness
- Personal and academic advising
Students accepted into the program must be from limited–income families or whose parents have not completed four-year college degrees. These are conditions of the Federal law that provides funds for the Upward Bound Program.
Extra-Curricular Activities

Johnson offers a variety of activities that complement our curriculum. See your counselor if you are interested and watch for club activities at school. If you are interested in creating a new extra-curricular activity please see your counselor, some of our most popular groups were student created!

- 3M Step
- College Possible
- Band
- Choir
- Color Guard/AFJROTC
- Drill Team/AFJROTC
- Gay, Lesbian, Bi-sexual Transgender (GLBT) Support Group
- Gay-Straight Alliance (GSA)
- Educational Talent Search
- Fashion Team
- First Robotics Club
- Flag Detail/AFJROTC
- Hmong Club
- Indian Education Program
- Japanese Anime Club
- Jazz Band
- Johnson Asian Culture Club (JACC)
- Johnson Mirror (Arts Magazine)
- Junior Class Board
- Link Crew
- Marching Band
- Mathematics Team
- Musical
- National History Day
- National Honor Society
- Newspaper
- Pep Band
- Pit Orchestra
- Orchestra
- Ordway Honors Concert
- Rocket-Model Club/AFJROTC
- Speech
- Solo/Ensemble Contest
- Son Seekers
- Stage/Tech Crew
- Students Against Destructive Decisions (SADD)
- Student Council
- Theater/Drama
- Upward Bound
- Yearbook

Athletics

While at Johnson, you will have many opportunities to join a sporting team. Johnson offers twenty-five athletic activities during the school year. All extracurricular activities are governed by the Minnesota State High School League Rules and Regulations. All incoming ninth graders are eligible for athletics. Credit and grades requirements must be met to participate in an athletics program. Please consult with the Athletic Office if you have questions.

Table 1: Athletic Eligibility

<table>
<thead>
<tr>
<th>Credits at Beginning of Qtr</th>
<th>Aug.</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
</tr>
</thead>
<tbody>
<tr>
<td>9th Grade</td>
<td>0</td>
<td>4</td>
<td>8</td>
<td>12</td>
</tr>
<tr>
<td>10th Grade</td>
<td>24</td>
<td>28</td>
<td>32</td>
<td>36</td>
</tr>
<tr>
<td>11th Grade</td>
<td>52</td>
<td>56</td>
<td>60</td>
<td>64</td>
</tr>
<tr>
<td>12th Grade</td>
<td>78</td>
<td>82</td>
<td>86</td>
<td>90</td>
</tr>
</tbody>
</table>

The following programs are offered at Johnson High School:

Fall

- Adapted Soccer
- Cheerleading
- Cross-Country Running (Co-Ed)
- Football
- Boys’ Soccer
- Girls’ Soccer
- Girls’ Swimming/Diving
- Girls’ Tennis
- Girls’ Volleyball

Winter

- Adapted Floor Hockey
- Cheerleading
- Boys’ Basketball
- Girls’ Basketball
- Girls’ Gymnastics
- Boys’ Hockey
- Girls’ Hockey
- Boys’ Swimming/Diving
- Wrestling

Spring

- Adapted Team Bowling
- Boys’ Baseball
- Girls’ Badminton
- Boys’ Golf
- Girls’ Golf
- Boys’ Lacrosse
- Girls’ Lacrosse
- Girls’ Softball
- Boys’ Tennis
- Track & Field (Co-Ed)
Academic Honors

Grading System and Honor Roll:
St. Paul Public Schools uses both a 4.0 unweighted grading system for standard classes and a 5.0 weighted grading system for Honor classes. Standard classes use a 12-point grading scale: A+ = 4.0; A = 4.0; A− = 3.7; B+ = 3.3; B = 3.0; B− = 2.7; C+ = 2.3; C = 2.0; C− = 1.7; D+ = 1.3; D = 1.0; D− = 0.7; N = 0. Classes awarding honor points are designated in the catalog with the word “honor” in parentheses after the course name. Honor classes use a weighted grading system: 1.25 times the standard GPA. (e.g. the GPA for an “A” mark is 4.0x1.25 = 5.0; a “B” mark is 3.0x1.25 = 3.75, etc.).

The A and B Honor Rolls are determined at the end of each grading period. A quarterly weighted GPA of 3.75 is required to be on the A Honor Roll and a quarterly weighted GPA of 3.00 is required to be on the B Honor Roll.

Academic Letter Recognition:
Every fall the Johnson National Honor Society hosts an awards ceremony for all students who are academic letter winners from the previous school year. To be an academic letter winner, one must attain a G.P.A. of 3.5 or higher and receive no grade lower than a C- throughout the entire school year.

Senior Honor Students:
Senior Honor Students are identified from the weighted cumulative grade point average (GPA) after the first semester of their senior year. District policy for honor students is as follows.

1. Class rankings and the honor point averages for members of the senior class shall not be made public. This shall apply to school newspapers, yearbooks, public announcements, and public news media. In addition, no valedictorian or salutatorian shall be named.
2. Students will be recognized for academic achievement based on the Latin Honor system, using their weighted GPA.
   - High Honors with Distinction (Summa Cum Laude) – Cumulative GPA average of 4.000 and above
   - High Honors (Magna Cum Laude) – Cumulative GPA average of 3.75 to 3.99
   - Honors (Cum Laude) – Cumulative GPA average of 3.3 to 3.749
3. In addition, each high school may, with the involvement of students, staff, and community, develop a plan to identify and recognize other student achievements.

Academic Standards

General Information

Definition of Terms
Credit: Each course carries one credit per quarter upon successful completion.
Elective: Any course that is not required is an elective.
Prerequisite: A course that must be taken before a student may enroll in a class.
GPA: Grade Point Average is the average of all grade points earned in courses from the beginning of the ninth grade. GPA can be weighted or un-weighted (please see the Academic Honors section).

Instructions for filling out registration forms can be found in Appendix C of this guide.

Counseling
The school counselors at Johnson work with students and parents to support the success of the students. Students are encouraged to make regular contact with their counselors, especially with regard to future planning and course selection. Appointments are made through the guidance secretary. Registration for next year takes place each year during second semester. It is important for students to talk with their parents, teachers and counselors as they make course selections.

Course offerings presented in this catalog are subject to change reflecting student requests, staffing, and other considerations.
Student course changes
Students and parents are encouraged to choose carefully, as student requests are the basis for courses offered each year, hiring of teachers and purchase of books and equipment. Therefore, schedule changes are made for the following reasons: inappropriate course selection, prerequisite has not been met, required courses have not been selected, a class is filled and a substitute is needed or a health issue prevents the student from taking the class.

Deficiencies
Students who fail courses and need to make up the credit can do so by attending Gordon Parks Evening High School, Harding Eastside Hub, or summer school. Students should make an appointment with their counselor to get a referral to an appropriate site.

Communication Regarding Academic Progress
- Parent Conferences:
  Formal parent/teacher conferences are typically held three times each year. If parents are unable to attend conferences, they should contact the school to talk individually with teachers. A parent, teacher, counselor or student may request a special conference to deal with academic or behavioral concerns.

- One Stop Parent/Guardian Access:
  One Stop is the place to access either Campus Portal or Schoology. To access these sites, first go to spps.org/onestop. Once there you can select to enter either Campus Portal or Schoology by clicking on the appropriate icon.

Schoology:
Parents are able to view their child’s daily gradebook in Schoology. By logging into Schoology parents will also be able to see upcoming and overdue assignments, school and course announcements, and course materials.

Campus:
Campus will continue to be the place for parents to check attendance, class schedules, discipline, course registrations for next year, report cards, and transcripts.

Who is eligible to have a One Stop account?
Parents of current students are eligible to activate a One Stop account, after agreeing to the terms and conditions of use.

How can a parent gain access to the One Stop?
Parents should contact Dorene Brookins, Family Engagement and Project Coordinator, to request their username and password for the One Stop. Mrs. Brookins can be contacted by e-mail at dorene.brookins@spps.org or by phone at 651-744-3604.

How much does One Stop cost?
Nothing - it is a free service to parents.

What kind of software or computer is needed to use One Stop?
- Computer: Windows or Macintosh.
- Software: Web browser
- Internet access

Johnson High School Requirements for Graduation
In addition to meeting specific course requirements and state and district graduation standards, students must successfully earn credits in 24 of 28 quarter classes each year in order to maintain class standing and graduate with their class. Johnson students must successfully complete a senior project. College entrance requirements exceed these minimums. Students are responsible for making certain that graduation requirements are met or exceeded.

Students wishing to meet requirements through ANY experience or coursework outside of Johnson High School must first approve the coursework with their school counselor. This includes courses experienced through Post Secondary Enrollment Options, Career Pathways, ALC Programs, Online learning, etc. See your counselor for information.
<table>
<thead>
<tr>
<th>Credit Requirements</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>English: 16 credits</td>
<td>Freshmen must enroll in either L402401 or L432411. Sophomores must enroll in either L402511 or L432511. Juniors and seniors must pass 4 credits each year. Please see the English section of the catalog for choices.</td>
</tr>
<tr>
<td>Math: 12 credits</td>
<td>Math credits must encompass Algebra I, Geometry and Algebra II. Sophomores and juniors must take a minimum of 4 credits per year.</td>
</tr>
<tr>
<td>Science: 12 credits</td>
<td>Four physical science credits, four biology credits and four credits in chemistry or physics are required.</td>
</tr>
<tr>
<td>Arts: 4 credits</td>
<td>Acceptable courses include Art Department offerings or visual, performance, or media arts classes. Course numbers that meet this requirement begin with the letter P or V.</td>
</tr>
<tr>
<td>Health &amp; Wellness: 2 credits</td>
<td>Sophomores are required to take G407111 Individual and Community Health.</td>
</tr>
<tr>
<td>Fitness &amp; PE: 4 credits</td>
<td>Students are required to take G400111 Physical Education and one additional PE class.</td>
</tr>
<tr>
<td>* 2 credits for Class of 2022 and beyond</td>
<td></td>
</tr>
<tr>
<td>Family &amp; Consumer Science, Industrial Tech, or Business: 2 credits</td>
<td>Choose from classes that have course numbers beginning with the letters B, F, or T.</td>
</tr>
<tr>
<td>FOCUS, Frameworks &amp; Finale: 6 Credits</td>
<td>Freshman, Junior and Senior students are required to complete unique Johnson High School courses designed to prepare students for high school life and beyond.</td>
</tr>
<tr>
<td>Senior Project</td>
<td>Every senior at Johnson High School is required to complete a Senior Project to be eligible for graduation. See Appendix D for more information.</td>
</tr>
<tr>
<td>World Language: District recommends completion of Level 3 at minimum</td>
<td>Johnson strongly recommends that all students complete 12 credits (6 semesters) encompassing at least Level 3 in a World Language.</td>
</tr>
<tr>
<td>Post-Secondary Plan</td>
<td>Saint Paul Public Schools has created a website (<a href="http://connection.naviance.com/jhsstp">http://connection.naviance.com/jhsstp</a>) that guides each student to develop a personal post high school plan. Students work on this plan throughout their Frameworks and Finale classes. If you have question regarding your post-secondary plan, see your school counselor.</td>
</tr>
<tr>
<td>Total Credits Needed:</td>
<td>94</td>
</tr>
</tbody>
</table>
Post High School Planning

All high school students who plan to continue their education beyond high school should select their high school classes carefully because colleges and vocational schools have become more definitive with regards to high school course selection. Students are encouraged to take the American College Test (ACT) in February and/or June of their junior year. Listed below in Table 3 are the minimum recommendations for college preparation. This table is meant to serve as a guide to students planning to attend post-secondary schools in selecting their courses.

College and Career Resource Center (CCRC):
The CCRC is located in Room 1017. It is dedicated to helping all students with college, post secondary options, and career planning. Our mission is to provide individual help for ANY student to prepare for college and to prepare for life after high school. Specifically, we will help students complete Naviance Milestones, identify and fill out scholarships, complete college applications, give students financial aid information, register students for college entrance exams and help students develop vocational plans for their futures. We have a strong record of accomplishment in helping students with scholarships. The following events are planned by the Counselors at Johnson High School:

- **Family Scholarship Night/Financial Aid Night**
  Scholarship directors and experts will explain and help parents and students identify scholarships they are eligible for. Financial aid experts will help parents and students fill out the FAFSA and MN Dream Act and learn about the financial aid process.

- **College Application Workshops**
  These after school workshops will be offered throughout the year. Counselors will assist students in the completion of college application materials. Students who have a hardship paying for a college application should discuss this with their counselor and may qualify for a fee waiver.

- **College and Scholarship Essay Panel**
  Rising seniors interact with professionals from various colleges and scholarship organizations as well as student scholarship recipients as they start working on their college and scholarship essays.

- **ACT Registration Workshops and Test Prep**
  Stop by the CCRC for assistance in signing up for an ACT test.

- **Accuplacer Testing**
  This test is for students applying to a two year college. Students can sign up for the test in the CCRC.

- **Opportunities Fair**
  Held each spring, the fair introduces students to summer camps, summer employment, internships, and enrichment program opportunities. Representatives from area trade unions, technical-vocational schools, and the military will be available in a Youth Opportunity Fair. Please contact the CCRC for exact dates.

**ACT and SAT Tests:**
These college entrance tests are taken by students who intend to enroll in a four-year college. The ACT test should be taken in February, April or June of a student’s junior year. September or October of the senior year is the last time to take the ACT test and still receive results before most college application deadlines occur.

**Career Café:**
The CCRC often schedules informational visits with local professionals who are interested in helping students learn more about different careers. Interested students can sign up in the CCRC to meet with the speaker in the CCRC during lunch. This allows students to ask many questions about the profession in order to help the student make decisions regarding their future.

**MNACC College Fair:**
Representatives of upper Midwest colleges, universities, technical colleges and vocational schools will be available to students and parents in a College Fair.
**College Representatives:**
Representatives of colleges, universities, technical colleges, military branches and private vocational schools schedule visits at our high school. Dates of these visits are given on morning announcements and are posted in Schoology as well as the JHS Bulletin. Interested students are responsible for signing up in the CCRC.

**College Visits:**
If juniors or seniors wish to visit a college, technical school or the military, they are encouraged to do so. A parent's written permission slip to the main office is necessary if the visit is scheduled during the school day.

**Financial Aid Applications:**
Applications for financial aid are available in the CCRC beginning in October.

**National College Fair:**
This college fair, held in downtown Minneapolis in the fall, has both daytime and evening hours. Colleges, universities and technical colleges from all over the country are represented there. Please contact the CCRC for exact dates.

**PSAT:**
PSAT: This national test, given in October to 11th grade students, acts as a screening for the National Merit Scholarships. 11th grade students who wish to take PSAT must sign up in CCRC room. Sophomores are allowed to take this as a practice test for the junior year PSAT.

**Scholarships:**
Scholarship information and newsletters are available in the CCRC. Appointments are also available for students seeking help applying for scholarships.

**Internship Opportunities:**
Information and application assistance is available regarding internships open to Johnson students. These opportunities include 3M STEP, Genesys Works, Right Track, among others.

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**NCAA Requirements for Division I and Division II Institutions**

Students who want to participate in NCAA Division I or II athletics should start the certification process by the end of their junior year or early in their senior year. Certification rules change from year to year; to be sure to get the most up-to-date information please visit www.ncaa.org. The breakdown for the core courses is as follows:

10 core courses must be taken before a student athlete’s senior year.

**Division I core course requirements**
4 years of English
3 years of mathematics (Algebra I or higher)
2 years of natural/physical science (1 year of lab if offered by high school)
1 year of additional English, mathematics or natural/physical science
2 years of social science
4 years of additional courses (from any area above, foreign language or non-doctrinal religion/philosophy)

**Division II core course requirements**
3 years of English
2 years of mathematics (Algebra I or higher)
2 years of natural/physical science (1 year of lab if offered by high school)
3 years of additional English, mathematics or natural/physical science
2 years of social science
4 years of additional courses (from any area above, foreign language or non-doctrinal religion/philosophy)
Table 3: Minimum Recommendations for College Preparation (Grades 9 Through 12) *Listed in Number of Years*

<table>
<thead>
<tr>
<th>What is your goal?</th>
<th>Vocational Technical / Community College</th>
<th>Traditional 4 Year College</th>
<th>*Selective 4 Year College</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example</td>
<td>Century, Dunwoody, St. Paul</td>
<td>MN State Universities / University of MN &amp; WI</td>
<td>Harvard, Carleton, U o f MN Carlson School of Mgmt.</td>
</tr>
<tr>
<td>English – Including Composition and Literature</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Math – Including Algebra, Geometry, and Advanced Algebra</td>
<td>3</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Science – Including Biological and Physical Science with Lab Experience</td>
<td>3</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Social Studies – Including U.S. History and Geography</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>World Language</td>
<td>Desirable</td>
<td>2</td>
<td>2-4</td>
</tr>
<tr>
<td></td>
<td>The Arts/World Culture</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Note: While the above is a good guideline, it is recommended that specific college bulletins be consulted for exact admission requirements.

* Selective colleges strongly encourage students to have a number of Advanced Placement or advanced level courses throughout high school.
Investigate! Innovate! Initiate! The Aerospace & Engineering magnet program actively engages students in solving problems. Students seek to examine, understand and protect our planet and explore the universe beyond. Students search for solutions to design challenges using science, technology, engineering and mathematics. In addition to Johnson’s Project Lead the Way pre-engineering classes, several aviation courses are offered.

Students and parents in Johnson’s Aerospace & Engineering magnet program should study Table 4. The table shows required classes that Aerospace & Engineering students have from ninth grade through their senior year. Please note, freshman are required to take Introduction to Engineering Design I and at least one more of the indicated required courses depending on their choice of pathway. Sophomores, juniors, and seniors must select at least one of the indicated courses each year to remain eligible for the program. Students are encouraged to take additional courses from these selections if their schedule allows. For example, a ninth grader could select a third course such as Introduction to Flight Simulators. Please consult with your guidance counselor if you have any questions.
<table>
<thead>
<tr>
<th>Selections</th>
<th>9th</th>
<th>10th</th>
<th>11th</th>
<th>12th</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intro to Engineering and Design I <em>(PLTW - IED 1)</em></td>
<td>R</td>
<td></td>
<td></td>
<td></td>
<td>All</td>
</tr>
<tr>
<td>Intro to Engineering and Design II <em>(PLTW - IED 2)</em></td>
<td>R</td>
<td></td>
<td></td>
<td></td>
<td>Engineering</td>
</tr>
<tr>
<td>Aviation I Introduction to Flight Simulators</td>
<td>R</td>
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<td></td>
<td></td>
<td>Aerospace</td>
</tr>
<tr>
<td>Beginning Woodworking</td>
<td>R</td>
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<td>Manufacturing</td>
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<tr>
<td>Principles of Engineering <em>(PLTW)</em></td>
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<tr>
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<td><strong>Required Selections By Grade</strong></td>
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R - Required  
S - Suggested  
O - Optional
In addition, students must meet general credit requirements to maintain eligibility. Students outside Area A need to make adequate progress within the program to maintain district transportation to Johnson High School.

<table>
<thead>
<tr>
<th>Credits at Beginning of Qtr</th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
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<td>12th Grade</td>
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Aerospace & Engineering Magnet Approved Courses

**Introduction to Engineering Design I (PLTW) (Honors)**

**Course Number(s):** T431481  
**Length:** 1 Semesters (2 Credits)  
**Prerequisites:** None  
**Grade:** 9-12  
IED is an introductory course into the basics of Aerospace, Engineering and Manufacturing- the three primary career pathways at Johnson High School. The first 1/3 of the course puts a focus on the basics of flight and the aerospace industry. Students will examine flight through a multitude of project-based experiments. Engineering will be the focus of the next third of the course. Students will design a project using computer based modeling software from which they will create on a 3D printer, laser engraver or vinyl cutter. The final third of the course will give students experience in creating and manufacturing a product using the most efficient means possible.

**Introduction to Engineering Design II (PLTW) (Honors)**

**Course Number(s):** T431471  
**Length:** 1 Semester (2 Credits)  
**Prerequisites:** Introduction to Engineering Design I or Gateway  
**Grade:** 9-12  
This class is a continuation of Introduction to Engineering Design I. This course emphasizes the development of a design. Students use computer software to produce, analyze and evaluate models of projects solutions. They study the design concepts of form and function, and then use state-of-the-art technology to translate conceptual design into reproducible products.  
**Note:** Students can earn college credit by passing PLTW summative test at the end of the semester.

**PLTW: Principles of Engineering with Physical Science (Honors)**

**Course Number(s):** S431711, S431713  
**Length:** 2 Semesters (4 Credits)  
**Prerequisites:** None  
**Grade:** 9  
PLTW: Principles of Engineering with Physical Science covers general concepts of engineering, physics, engineering technology and its career possibilities. This course involves a number of projects that explore careers in engineering, principles of design, control systems, materials science, general mechanics and chemistry. The projects involve learning and applying fundamental principles of physics and chemistry, solving problems, designing and modifying devices. The will also learn how engineers address concerns about the social and political consequences of technological change.  
**Note:** Students can earn college credit by passing PLTW summative test at the end of the semester.
Computer Integrated Manufacturing (PLTW) (Honors)
Course Number(s): T531711
Length: 1 Semester (2 credits)
Prerequisites: Principles of Engineering
Grade: 10-12
How are things made? What processes go into creating products? Is the process for making a water bottle the same as it is for a musical instrument? How do assembly lines work? How has automation changed the face of manufacturing? While students discover the answers to these questions, they’re learning about the history of manufacturing, robotics and automation, manufacturing processes, computer modeling, manufacturing equipment, and flexible manufacturing systems.
Note: Students can earn college credit by passing PLTW summative test at the end of the semester.

Computer Science and Software Engineering (CSE) (Honors)
Course Number(s): T431461, T431463
Length: 2 Semesters (4 credits)
Prerequisites: Principles of Engineering
Grade: 10-12
With an emphasis on computational thinking, in this 1-year long computer science course, students will be exposed to a diverse set of computational thinking concepts and tools, which will allow them to develop programming expertise and additionally, explore the workings of the internet. This will be achieved by having students create projects and solve problems thru story/game development, app creation, data visualization, web analysis and cyber security...time permitting. Programming languages utilized will include, “Scratch”, “MIT-AppInventor”, HTML and primarily, “Python”.
Note: Students can earn college credit by passing PLTW summative test at the end of the semester.

Intro To Computer Programming
Course Number(s): T405301
Length: 1 Semester (2 credits)
Prerequisites: None
Grade: 9-12
With an emphasis on computational thinking, in this 1-semester long introduction to computer programming course, students will be exposed to a diverse set of computational thinking concepts and tools which will allow the student to gain an understanding of, and confidence in, the language of computer programming. This will be achieved by students becoming proficient in the language of computer programming by using visual “block based” programming code to create logic statements and eventually, game and story based projects for demonstration to fellow classmates. The main programming languages utilized in this course are “Scratch” and “MIT-AppInventor”.

Physics
Course Number(s): S405111, S405113
Length: 2 Semesters (4 Credits)
Prerequisites: Introduction to Engineering Design I
Grade: 11-12
Aerospace Engineering engages students in engineering design problems related to aerospace information systems, astronautics, rocketry, propulsion, the physics of space science, space life sciences, the biology of space science, principles of aeronautics, structures and materials, and systems engineering. Using 3-D design software, students work in teams utilizing hands-on activities, projects and problems and are exposed to various situations encountered by aerospace engineers. Completion of this course fulfills the science graduation requirement for physics or chemistry.

Biotechnical Engineering (PLTW) (Honors)
Course Number(s): S434611, S434613
Length: 2 Semesters (4 Credits)
Prerequisites: Biology or Biology AP; Algebra II (can be taken concurrently)
Grade: 11-12
In Environmental Engineering, students investigate and design solutions to solve real-world challenges related to clean drinking water, a stable food supply, and renewable energy. Students are introduced to environmental issues and use the engineering design process to research and design potential solutions. Utilizing the activity-, project-, problem-based (APB) teaching and learning pedagogy, students will transition from completing structured activities to solving open-ended projects and problems that require planning, documentation, communication, and other professional skills. Students should take this course if they are interested in having experience in one of the fastest growing professions, environmental engineering.
Engineering Design and Development (PLTW) (Honors)
Course Number(s): T431621
Length: 1 Semester (2 Credits)
Prerequisites: Principles of Engineering
Grade: 12
In this capstone course, students work in teams to design and develop an original solution to a valid open-ended technical problem by applying the engineering design process. Students perform research to choose, validate, and justify a technical problem. After carefully defining the problem, teams design, build, and test their solutions while working closely with industry professionals who provide mentoring opportunities. Finally, student teams present and defend their original solution to an outside panel.

Civil Engineering & Architecture (PLTW) (Honors)
Course Number(s): T431611
Length: 1 Semester (2 Credits)
Prerequisites: None
Grade: 11-12
The major focus of the Civil Engineering and Architecture (CEA) course is a long-term project that involves the development of a local property site. As students learn about civil engineering and architecture, they apply what they learn to the design and development of this property. Developing the property as a simulation and model allows students to learn what civil engineers and architects experience while developing properties. The CEA course is structured to enable students to have a variety of experiences that will provide an overview of both fields. Students work individually and in teams exploring hands-on projects and activities to learn the characteristics of civil engineering and architecture. In addition, students will use state of the art software packages to help them design solutions to solve class assignments and projects. Students learn about documenting their project, solving problems and communicating their solutions to various audiences. Note: Students can earn college credit by passing PLTW summative test at the end of the semester.

Introduction to Flight Simulators
Course Number(s): N409011
Length: 1 Semester (2 Credits)
Prerequisites: None
Grade: 9-12
This foundation course introduces students to the basic principles of flight. Students’ learn about the lift and drag of an aircraft, torque effect, load factors, turbulence, aircraft systems and federal air regulations. Students acquire and apply knowledge and skills while flying in the simulators. Students will take on the roles of Pilot, Co-Pilot and air traffic control and utilize communication skills and problem solving throughout the course. There will also be exploration of careers in the aviation industry.

Flight Simulator: Scenario Flights
Course Number(s): N409021
Length: 1 Semester (2 Credits)
Prerequisites: Introduction to Flight Simulators
Grade: 10-12
Critical thinking, teamwork, problem solving, communication and integration of math and science skills will be utilized as students are presented with training scenarios. Challenges will include flying multiple types of aircraft.

Flight Sim Scenarios 3
Course Number(s): N409031
Length: 1 Semester (2 Credits)
Prerequisites: Completion of Flight Simulator
Grade: 10-12
Through a combination of simulator flying and classroom instruction, this course will prepare students to take their FAA Private Pilot written exam. Topics in the course include airplane systems, aerodynamic principles, communications, meteorology, navigation and flight planning.
**Beginning Woodworking**  
**Course Number(s):** T402111  
**Length:** 1 Semester (2 Credits)  
**Prerequisites:** None  
**Grade:** 9-12  
This course acquaints students with the essential skills used in woodworking and construction. Class work will include the development of part drawings, blueprint reading, plan of procedures, precise measurement and estimating materials. Student’s projects teach the safe and proper use of a variety of woodworking tools. Students are required to complete projects that are designed to develop primary woodworking skills. Safety glasses are required.  
Note: There is a $10 lab fee for this course.

**Introduction to Industrial Robotics**  
**Course Number(s):** S402601  
**Length:** 1 Semesters (2 Credits)  
**Prerequisites:** Aero & Engineering Phy Sci or PLTW Prin of Eng Physical Sci  
**Grade:** 10-12  
Introduction to Industrial Robotics Lab is a lab based science elective that introduces industrial robotic programming and applications. The course uses the Festo Mechatronics Training Systems to address the state of Minnesota’s physical science standards. Topics for the course include: electrical circuits, digital logic, sensors, pneumatic and electrical actuators, programmable logic controllers, and computer modeling and simulations with industrial applications. This course is designed to prepare students to continue training in electromechanical systems at St Paul College or other institutions.

The Aerospace & Engineering Program is sponsoring the following extracurricular activities:

**Science Fair Club**  
Johnson’s Science Fair Club offers an after-school opportunity to pursue in-depth extended research projects for possible credit. To earn credit, one must attend regularly and present at a regional science fair. Students who participate have additional opportunities for scholarships and they improve their resumes for college admissions.

**Real World Design Challenge**  
Students are given a challenge to design a part for an aircraft that meets certain conditions. Student teams compete for prizes at the national level.

**Robotics Club**  
Design, build and program a robot! Watch your creations play games, perform tasks, perhaps even compete against others. Do machines really think? What is behavior? Find out by making thinking machines yourself. Students will compete in the FIRST Robotics Regional Competition at the University of Minnesota in March.
Air Force Junior ROTC

All students enrolled in this program are REQUIRED to wear the AFJROTC service uniform and the issued fitness uniform at least one day each week. Males must keep their hair cut short in a military-style manner and must be clean-shaven at all times while in uniform. Females must keep hair cut short or worn up so that it does not touch the collar of their shirt while in uniform.

AFJROTC is a four-year program for high school students with an interest in becoming leaders in their communities. The program provides citizenship training with a curriculum that includes Aerospace Science, Leadership Education, and Wellness. Each course offered is divided into three categories: Academics (Aerospace Science) – 40%, Leadership (Leadership Education) – 40%, and Wellness (Physical Fitness Education) – 20%. Aerospace Science courses include Global Cultural Studies, Exploring Space, and Survival. Leadership studies include Air Force customs and courtesies, cadet corps activities, study habits, time management, communications skills and leadership and management studies. Wellness education is comprised of an exercise program focused upon individual baseline improvements with the goal of achieving a national standard as calculated with age and gender. Cadets are encouraged to lead active, healthy lifestyles beyond program requirements and into their adult lives.

All courses also include an introduction to military drill and ceremonies that concentrates on individual and group precision movements, procedures for saluting, reviews, parades, and development of military bearing and the command voice. Grades are based not only on curriculum, but also on participation in sporting and military competitions, community service projects, proper wear of the uniform, and maintaining an enthusiastic, positive attitude.

AFJROTC is a citizen-building program, not a military recruiting program. It imposes neither an obligation nor a guarantee to serve in the military upon graduation. However, for students interested in pursuing a military career, participation in at least two years of AFJROTC allows entry into any military service at a higher rank and pay grade.

Please see the AFJROTC page on the Johnson High School website for more detailed information at http://johnsonsr.spps.org/domain/6212
AFJROTC: Corps Management
Course Number(s): R402111, R402113
Length: 2 Semesters (4 Credits)
Prerequisites: Two of the following: AFJROTC Exploring Space, AFJROTC Global Cultural Studies, AFJROTC Survival or Senior Aerospace Science Instructor/Aerospace Science Instructor recommendation.
Grade: 12
The cadets manage the entire AFJROTC corps during their senior year in the AFJROTC program. This hands-on experience affords cadets the opportunity to put theories of previous leadership courses into practice. Planning, organizing, coordinating, directing, controlling, and decision-making will be done by cadets as they utilize their communication, decision-making, personal interaction, managerial, and organizational skills.
Associated Leadership Course: LE 400 - Principles of Management

Rotational Classes:
These rotational classes will be offered every three years as noted below in the course descriptions. In addition, each academic course is paired with a Leadership Education course. Leadership education provides an essential component for today’s high school students and is designed to prepare students for life after high school in the high-tech, globally-oriented, diverse workplace of the 21st century.

AFJROTC: Global Cultural Studies
Rotational class – available every three years (2021-2022)
Length: 2 Semesters (4 Credits)
Prerequisites: None
Grade: 9-12
This course introduces students to various cultures through the study of world affairs, regional studies, and cultural awareness. The course delves into history, geography, religions, languages, culture, political systems, economics, social issues, environmental concerns, and human rights, and looks at major events and significant figures that have shaped each global region.
Associated Leadership course: LE 200 - Communication, Awareness and Leadership

AFJROTC: Exploring Space
Rotational class – available every three years (2022-2023)
Length: 2 Semesters (4 Credits)
Prerequisites: None
Grade: 9-12
This course begins with the study of the space environment from the earliest days of interest in astronomy and early ideas of the heavens, through the Renaissance, and on to modern astronomy. It provides an in-depth study of the earth, sun, stars, moon and solar system, including the terrestrial and outer planets. It discusses issues critical to travel in the upper atmosphere and investigates the importance of manned and unmanned space flights, concepts surrounding spaceflight, space vehicles, launch systems, and space missions. The course also covers the human experience in space and examines the latest advances in space technology, including robotics and the Mars Rover.
Associated Leadership course: LE 300 - Life Skills and Career Opportunities
AFJROTC: Survival

*Rotational class – available every three years (2020-2021)*

**Course Number(s):** R402171, R402173

**Length:** 2 Semesters (4 Credits)

**Prerequisites:** None

**Grade:** 9-12

This course provides training in skills, knowledge, and attitudes necessary to successfully perform fundamental tasks needed for survival. Survival also presents “good to know” information that would be useful in any situation, such as individuals who become lost while hiking or hunting, or for persons stranded in a snowstorm. In this course cadets will learn basic elements of surviving, how first aid procedures, clothing, and shelter can provide personal protection, the necessities for maintaining life, and how to travel and prepare for recovery in a survival situation.

**Associated Leadership course:** LE 100 - Traditions, Wellness and Foundations of Citizenship
All Studio Art classes place a strong emphasis on the elements and principles of design, on the artistic process and on personal creativity. All students learn to see the world in new and interpretive ways in order to make expressive visual statements. Beginning classes focus on the development of technical skills and on understanding the elements and principles of design. Intermediate classes expand the student’s experience and exposure to a specific art form and help the student develop an artistic style. Advanced classes accelerate the student’s comprehension of higher level thinking within an art medium, prepare the student for a career in an art field and further develop the student’s artistic style.

<table>
<thead>
<tr>
<th>Drawing</th>
<th>Painting</th>
<th>Ceramics</th>
<th>Digital Media</th>
<th>Other</th>
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<tbody>
<tr>
<td>Drawing Beginning</td>
<td>Painting Beginning</td>
<td>Ceramics Beginning</td>
<td>Digital Imaging, Beginning</td>
<td>Jewelry-Beginning</td>
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<tr>
<td>Drawing Advanced</td>
<td>Painting Intermediate</td>
<td>Ceramics Intermediate</td>
<td>Digital Photography, Beginning</td>
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<tr>
<td>AP Studio Art</td>
<td>Ceramics Advanced</td>
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Ceramics Beginning
Course Number(s): V402111
Length: 1 Semester (2 Credits)
Prerequisites: None
Grade: 9-12
This course introduces the student to the skills, vocabulary, and techniques necessary to create pottery and clay sculpture. Students will learn basic clay techniques and processes including hand building and the use of the potter’s wheel. Some projects include pinch pot, coil, slab and cups. Aprons provided. They will explore how art, specifically ceramics, is made expressive and meaningful. Throughout the course students will participate in discussions regarding their work in process and as completed product.

Ceramics Intermediate
Course Number(s): V402121
Length: 1 Semester (2 Credits)
Prerequisites: Ceramics ONE grade: B- or higher
Grade: 10-12
This course will expand the student’s knowledge and understanding of ceramics. Many new technical skills will be taught which were not introduced in beginning ceramics, e.g. lidded containers, pitcher, salt and pepper shakers, platters, vases. A strong focus on wheel technique and hand build sculpture will be taught. Students explore how and why aesthetics are important when creating art and how aesthetics can influence the development of their own artistic style. Students will plan and create 2-3 projects of their choice and participate in discussions regarding their work as it relates to aesthetics and artistic style.
Ceramics Advanced
Course Number(s): V402131
Length: 1 Semester (2 Credits)
Prerequisites: Ceramics TWO grade: B or higher
Grade: 10-12
This course will give students the opportunity to gain an advanced level of understanding for the entire ceramic process. Students will create ceramic work independently as they further their technical skills and artistic style. Students will explore and demonstrate an understanding of clay and glaze chemistry, specific firing techniques, and career options within the ceramics field. Students will also learn how to formally critique, interpret, and analyze their own artwork.

Digital Imaging
Course Number(s): V408251
Length: 1 Semester (2 Credits)
Prerequisites: None
Grade: 10-12
Students will explore the use of a computer to create and manipulate imagery. The focus of the class will be the use of the elements and principles of art to teach the student techniques and functions of the equipment. Students will use computer software to create original art for publication or presentation. This course will develop a student’s technical computer skills and their artistic visual intelligence.

Digital Photography, Beginning
Course Number(s): V408271
Length: 1 Semester (2 Credits)
Prerequisites: None
Grade: 10-12
Students will use digital equipment and computer software to study the formal components of visual communication with a strong emphasis on Elements Art and Principles of Design. This course will include the study of the photographic image, image production, computer software, and the use of digital cameras.

Drawing Beginning
Course Number(s): V401111
Length: 1 Semester (2 Credits)
Prerequisites: None
Grade: 9-12
Students will explore basic drawing techniques through the study of a variety of subject matter, media and materials. Learning how to draw will involve learning how to see the world in terms of the elements of art: line, shape, value, form, texture, color and space. Students will also be exposed to the principles of design, balance, movement and contrast which are the framework for creative composition. All students will be involved in the critique of their own art as well as that of others.

Drawing Advanced
Course Number(s): V401141
Length: 1 Semester (2 Credits)
Prerequisites: Drawing ONE grade: B- or higher
Grade: 10-12
Intermediate drawing will help students continue to develop technical skills in drawing. The elements of art and principles of design will be discussed and built upon throughout the course. The students will explore a variety of new drawing media and techniques including charcoal, chalk, ink, dry and oil pastels. Color theory and application of color media will be a large portion of the course. The students will be expected to think creatively and work diligently throughout the Semester.

Painting Beginning
Course Number(s): V401211
Length: 1 Semester (2 Credits)
Prerequisites: Drawing ONE
Grade: 9-12
This course is designed to build on the drawing and compositional skills learned in Beginning Drawing by familiarizing students with color theory and painting technique. Students will be exposed to color schemes and learn to mix tints, shades, and tones to produce infinite colors. Painting medium used in this course will be tempera combined with acrylic medium. Painting terminology and a sampling of style from Art History will be covered in this course. Developing the technical skills to manipulate paint on a surface is the main focus of this course, but students will find that creative thinking and problem solving are a large part of this process. Determination and focus are the keys to success in this class.

Painting Intermediate
Course Number(s): V401221
Length: 1 Semester (2 Credits)
Prerequisites: Painting ONE grade: B- or higher
Grade: 10-12
This course is designed to be an extension of the skills and knowledge established in Beginning Painting. The students will continue to explore and apply rules of color theory, value, and composition to create more artistically expressive paintings. The contribution of diverse cultural and historical paintings will be examined as part of our study of the evolution of painting in art history. Tempera and watercolor paint will be the media used throughout the Semester. The students will also learn about a variety of painting surfaces that can be used with these media. Students
should expect a fun but continually challenging experience.

**AP Studio Art**

**Course Number(s):** V436001

**Length:** 1 Semester (2 Credits)

**Prerequisites:** Painting ONE grade: B- or higher

**Grade:** 10-12

AP Studio Art allows students to earn college level art credit through the creation of a portfolio of work that is scored by the College Board. The course is a year-long and requires that the student work independently to investigate, experiment, and develop a cohesive series of artworks. The students can work in any medium that relates to the portfolio type they choose. Three portfolio categories are available: Drawing, 2D Design, 3D Design. Students will be expected to develop a comprehensive portfolio, process journal. Portfolios that earn a satisfactory review by the College Board (a score of 3 or higher on a 6 point scale,) the student can earn three college credits, depending on the college. There is a large amount of work required for portfolio submission in early May, but it is a great opportunity to prepare a portfolio if a student plans on attending a college for an art or design major.

**Jewelry-Beginning**

**Course Number(s):** V402211

**Length:** 1 Semester (2 Credits)

**Prerequisites:** None

**Grade:** 9-12

Students will learn technical skills and formal organization to create expressive jewelry. Students will explore the properties, qualities and capabilities of jewelry media and relevant tools as well as an emphasis placed on planning for projects. Various mediums will be explored. Students will be introduced to a variety of tools such as round-nose and needle-nose jewelry pliers, sandpaper, files, and looms.
AVID

Advancement Via Individual Determination (AVID) is an academic elective course that prepares students for college readiness and success, and it is scheduled during the regular school day as a year-long course. Each week, students receive instruction utilizing a rigorous college preparatory curriculum provided by AVID Center, tutor-facilitated study groups, motivational activities and academic success skills.

If you will be in 9th, 10th, 11th, or 12th grade, and want to enroll in AVID, you must complete the application and interview process. To get the full benefit of the AVID program, students are invited and expected to participate in the AVID elective throughout their entire academic career at Johnson. Exits from AVID will only be considered at semester breaks and must go through the exit process.

AVID 9
Course Number(s): N402011, N402013
Length: 2 Semesters (4 Credits)
Prerequisites: Students must complete an AVID application and interview to be considered for the program.
Grade: 9
Some students will have previous experience with AVID, and some students will be experiencing AVID for the first time. Either way, the ninth grade AVID Elective course will serve as a review of the AVID philosophy and strategies. Students will work on academic and personal goals and communication, adjusting to the high school setting. Students will increase awareness of their personal contributions to their learning, as well as their involvement in their school and community. There is an emphasis on analytical writing, focusing on personal goals and thesis writing. Students will work in collaborative settings, learning how to participate in collegial discussions and use sources to support their ideas and opinions. College research will include financial topics and building their knowledge on colleges and careers of interest.

AVID 10
Course Number(s): N402021, N402023
Length: 2 Semesters (4 Credits)
Prerequisites: Students must complete an AVID application and interview to be considered for the program.
Grade: 10
During the tenth grade AVID Elective course, students will refine the AVID strategies to meet their independent needs and learning styles. Students will continue to refine and adjust their academic learning plans and goals, increasing awareness of their actions and behaviors. As students increase the rigorous course load and school/community involvement, they will refine their time management and study skills accordingly. Students will expand their writing portfolio to include: analyzing prompts, supporting arguments and claims, character analysis and detailed reflections. Students will expand their vocabulary use, continuing to prepare for college entrance exams and preparation. Lastly, students will narrow down their college and careers of interest, based on personal interests and goals.
AVID 11
Course Number(s): N402031, N402033
Length: 2 Semesters (4 Credits)
Prerequisites: Students must complete an AVID application and interview to be considered for the program.
Grade: 11
The eleventh grade AVID Elective course is the first part in a junior/senior seminar course that focuses on writing and critical thinking expected of first- and second-year college students. In addition to the academic focus of the AVID seminar, there are college-bound activities, methodologies and tasks that should be undertaken during the junior year to support students as they apply to four-year universities and confirm their postsecondary plans.

AVID 12
Course Number(s): N402041, N402041
Length: 2 Semesters (4 Credits)
Prerequisites: Students must complete an AVID application and interview to be considered for the program.
Grade: 12
The AVID Elective twelfth grade course is the second part in a junior/senior seminar course that focuses on writing and critical thinking expected of first- and second-year college students. Students will complete a final research essay project from research conducted in their junior year in AVID. In addition to the academic focus of the AVID senior seminar, there are college-bound activities, methodologies and tasks that should be achieved during the senior year that support students as they apply to four-year universities and confirm their postsecondary plans. All AVID seniors are required to develop and present a portfolio representing their years of work in the AVID program, as well as complete the requirements for the seminar course.
English

The Johnson High School English department cultivates the acquisition of language arts skills by actively engaging students in reading, writing, speaking and listening. Students improve their skills in comprehending and analyzing the literature of the United States and the world. All non-elective English classes meet the Minnesota Academic Standards in Language Arts. Johnson students also have the opportunity to earn college credit through Advanced Placement (AP) classes as well as two College in the Schools (CIS) classes through the University of Minnesota. Students are required to accumulate a minimum of four English credits per year (1 per quarter). Students are encouraged to go beyond the minimum requirement and further improve their communication skills by enrolling in English elective courses.

ALL FRESHMEN Must Enroll in One of the Following Two Courses:

English 9
Course Number(s): L402401, L402403
Length: 2 Semesters (4 Credits)
Prerequisites: None
Grade: 9
English 9 introduces students to the MN English Language Arts gr. 9-10 benchmarks for reading, writing, speaking, listening, media literacy, and language. This course establishes a foundation in the habits and skills for the critical thinking, analysis, argumentation, research, and writing types that will be expected of students throughout their high school years. Students will be able to select their own reading texts based on personal interests throughout the year, ensuring that every student is challenged and engaged. This honors course is distinguished by an expectation for a greater degree of outside reading, self-directed learning, student participation, and overall academic leadership.

ALL SOPHOMORES Must Enroll in One of the Following Two Courses:

English 10
Course Number(s): L402511, L402513
Length: 2 Semesters (4 Credits)
Prerequisites: English 9 or teacher recommendation
Grade: 10
English 10 focuses on mastery of the MN English Language Arts gr. 9-10 benchmarks for reading, writing, speaking, listening, media literacy, and language. Students will refine their habits and skills for the critical thinking, analysis, argumentation, research, and writing types required in the upper grades of high school. Students will study collections of literature and informational texts, including voices from within and outside of the U.S. and MN American Indian perspectives. In order to increase engagement, students will get to choose most novels they will be reading in this course. Students will write texts for a variety of purposes and audiences including narrative, persuasive, research and literary analysis.
English 10 Accelerated (Honors)
Course Number(s): L432511, L432513
Length: 2 Semesters (4 Credits)
Prerequisites: English 9 Pre-AP; teacher recommendation
Grade: 10
English 10 Accelerated focuses on the mastery of the MN English Language Arts gr. 9-10 benchmarks for reading, writing, speaking, listening, media literacy, and language. Students will refine their habits and skills for the critical thinking, analysis, argumentation, research, and writing types and processes required in the upper grades of high school. Specific works studied in this class include Richard Wright’s Native Son, Shakespeare’s Othello, John Howard Griffin’s Black Like Me and Ayn Rand’s Anthem. Students read a wide variety of literature through our independent reading focus which increases student choice and engagement in the literature. There is a special emphasis on syntax and vocabulary as students are expected to gain significant mastery of the former and expansion of the latter. This honors course is distinguished by an expectation for a greater degree of outside reading, self-directed learning, student participation, and overall academic leadership.

AP Language and Composition (Honors)
Course Number(s): L455201, L455203
Length: 2 Semesters (4 Credits)
Prerequisites: English 10 Pre-AP; teacher recommendation
Grade: 11-12
This rigorous class focuses on the rhetorical analysis of complex fiction and nonfiction. Students learn to identify and analyze the strategies that authors use in order to communicate their message. Students will write about a variety of subjects and demonstrate an awareness of audience and purpose. This will be accomplished through expository, analytical, and argumentative writing. This course will prepare students for the Advanced Placement Language and Composition Exam in May. It will also enable students to write effectively and confidently in their college courses across the curriculum.

Note: This course has required summer reading, which is available from the teacher, the counseling office, and from the Johnson English Department website.

ALL JUNIORS Must Enroll in One of the Following Three Courses:

English 11
Course Number(s): L402601, L402603
Length: 2 Semesters (4 Credits)
Prerequisites: English 10
Grade: 11
English 11 focuses on American Literature, including authors such as Arthur Miller, August Wilson, Tim O’Brien, and Sherman Alexie. Students also read a wide variety of literature through our independent reading focus which increases student choice and engagement in the literature. Students will engage with MN English Language Arts gr. 11-12 benchmarks for reading, writing, speaking, listening, media literacy, and language. Students will practice critical thinking and analytical writing for fiction and non-fiction literature. Essays may include narrative, research and argumentation. Writings and classroom discussions are used to enhance college and career readiness skills. It is a primary objective that students gain a deeper understanding of literature.

AP Literature and Composition (Honors)
Course Number(s): L453211, L453213
Length: 2 Semesters (4 Credits)
Prerequisites: English 10 Pre-AP; teacher recommendation
Grade: 11-12
In this rigorous course, students perform close reading of selected texts, through which they deepen their understanding of the ways writers use language to provide both meaning and pleasure for their readers. Students read independently from works representing several genres and periods from the 16th to the 20th century, as well as a variety of cultures. Students focus on the critical analysis of literature and write expository, analytical, and argumentative essays paying attention to organization and the elements of style. In their writing, students learn to use extensive vocabulary, demonstrate effective use of rhetoric and tone, and maintain a consistent voice.

This course will also prepare students for the Advanced Placement Literature test in May.

Note: This course has required summer reading, which is available from the teacher, the counseling office, and from the Johnson English Department website.
ALL SENIORS Must Enroll in One of the Following Five Courses:

**English 12**
Course Number(s): L402701, L402703
Length: 2 Semesters (4 Credits)
Prerequisites: American Literature and Composition or teacher recommendation.
Grade: 12
English 12 focuses on mastery of the MN English Language Arts gr. 11-12 benchmarks for reading, writing, speaking, listening, media literacy, and language. Students will deepen their critical thinking, analysis, argumentation, research, and writing skills in preparation for college and career level reading and writing. Examples include, but are not limited to, Sophocles, Shakespeare and various contemporary authors. Students read a wide variety of literature through our independent reading focus which increases student choice and engagement in the literature. Self expression, literary analysis, and research are three areas of emphasis in this class.

**CIS: College Writing & Critical Reading**
Course Number(s): L495501
Length: 1 Semester (4 Credits)
Prerequisites: Top 25% of Class; teacher recommendation
Grade: 12
In this college introductory writing course, students prepare for the wide variety of writing they will be expected to produce in college classes. Students focus on the writing process: brainstorming, organizing, drafting, revising, peer conferencing, proofreading and publishing. The possibilities of the journal as part of the writing process are explored. Students have conferences with their writing groups and individually with the teacher. Critical reading of a wide variety of texts is an important component of the class. Students develop and complete five major writing assignments: the personal essay, ethnography, persuasive, problem/solution and review/critique papers. Students also complete five minor writing assignments.

Since College in the Schools - Freshman Composition is a college course taught in high school; it is not a high school class. Students have more freedom than in other courses taught in high school – but they also have more responsibility for their own progress and work in this course. Upon successful completion of this course, students receive four semester credits from the University of Minnesota, Twin Cities.

**CIS: Introduction to Literature: Poetry, Drama and Narrative (Honors)**
Course Number(s): L493501
Length: 1 Semester (4 Credits)
Prerequisites: Top 25% of Class; teacher recommendation
Grade: 12
College in the Schools: Introduction to Literature, English 1001, is a University of Minnesota course that is taught in high school. It is offered for high school students who have demonstrated exceptional abilities in reading and writing. This course is nearly identical to the courses taught on campus at the University of Minnesota. Each Semester, students read seven or eight stimulating books of 20th Century Fiction, ranging from the traditional to the unconventional, by authors such as Rudolfo Anaya, Kate Chopin, Toni Morrison, and William Faulkner.

In this course, students read, interpret, discuss, and write about substantial examples of literature. Students will learn to apply literary theories in their reading experiences, theories that connect with race, sexuality, religion, gender, and colonialism. Students will expand their awareness of themselves and others through the literature they read, class discussions, and writing assignments.

Since College in the Schools: Introduction to Literature is not a high school course, students have more freedom than in other courses taught in high school – but they also have more responsibility for their own progress and work in this course. Upon successful completion of this course students receive four semester credits from the University of Minnesota, Twin Cities.
AP Language and Composition (Honors)
Course Number(s): L455201, L455203
Length: 2 Semesters (4 Credits)
Prerequisites: English 10 Pre-AP; teacher recommendation
Grade: 11-12
This rigorous class focuses on the rhetorical analysis of complex fiction and nonfiction. Students learn to identify and analyze the strategies that authors use in order to communicate their message. Students will write about a variety of subjects and demonstrate an awareness of audience and purpose. This will be accomplished through expository, analytical and argumentative writing.

This course will prepare students for the Advanced Placement Language and Composition Exam in May. It will also enable students to write effectively and confidently in their college courses across the curriculum.

Note: This course has required summer reading, which is available from the teacher, the counseling office, and from the Johnson English Department website.

AP Literature and Composition (Honors)
Course Number(s): L453211, L453213
Length: 2 Semesters (4 Credits)
Prerequisites: English 10 Pre-AP; teacher recommendation
Grade: 11-12
In this rigorous course, students perform close reading of selected texts, through which they deepen their understanding of the ways writers use language to provide both meaning and pleasure for their readers. Students read independently from works representing several genres and periods from the 16th to the 20th century, as well as a variety of cultures. Students focus on the critical analysis of literature and write expository, analytical, and argumentative essays paying attention to organization and the elements of style. In their writing, students learn to use extensive vocabulary, demonstrate effective use of rhetoric and tone, and maintain a consistent voice.

This course will also prepare students for the Advanced Placement Literature test in May.

Note: This course has required summer reading, which is available from the teacher, the counseling office, and from the Johnson English Department website.

Elective Credit Classes Offered:

Acting Intermediate
Course Number(s): P405121
Length: 1 Semester (2 Credits)
Prerequisites: Introduction to Theater
Grade: 10-12
For students who have passed the introductory course, Theater Arts 2 will provide more advanced instruction. This course is designed to help students discover the powers of their artistic imagination through a variety of theater-based activities. The class has a final goal of a play production to be performed at the end of the Semester. Group collaboration is at the foundation of the class. The actual level of instruction will vary according to students' skills and interests. Acting, producing and aspects of technical theater will be included. Students will be required to participate in a final public performance of the play selected.

Asian American Literature
Course Number(s): L401201
Length: 1 Semester (2 Credits)
Prerequisites: None
Grade: 10-12
Students will learn about the history and experiences of Asian Americans groups such as the Chinese, Korean, Hmong, and Middle Eastern. Students will read works by Asian American authors while exploring topics of Asian American identity and culture, generational divides, immigrant experiences, and the on-going struggle and transformation of being an Asian American. This course will give all students a deeper understanding of the Asian American experience.
Creative Writing & Poetry
Course Number(s): L405401
Length: 1 Semester (2 Credits)
Prerequisites: Poetry
Grade: 10-12
Students will be introduced to a variety of writing genres: script writing, short fiction, creative non-fiction, and poetry. Understanding the creative process from inspiration through revision, how to stay motivated, and how to get published will also be covered in this elective. Students in this class will be strongly encouraged to submit their work for possible publication in The Mirror – Johnson’s creative writing and arts annual publication. As part of the script writing unit, students will write scripts that will be considered for performance by Mr. Fisher’s Advanced Theatre class in the spring. Students will be shown how to read like a writer by reading various literary works as a means of influencing and improving their own writing. While all of this sounds quite serious, this elective strives to provide students with serious fun.

Introduction to Journalism
Course Number(s): L405311
Length: 1 Semester (2 Credits)
Prerequisites: None
Grade: 9-12
Students learn to research and narrow topics for writing articles and using iPads to produce media. They will practice the skills necessary for an accurate, responsible and thoughtful publication and news video segments with their iPads. Students will be taught the essential skills related to gathering news, presenting the facts, and respecting the integrity of responsible journalism.

The changes in journalism throughout history will be covered as well as objective and subjective writing. Students will analyze journalistic publications such as the New York Times, the Pioneer Press, and the Star Tribune. The students will learn to evaluate different forms of media.

Horror, Mystery, Fantasy & Science Fiction
Course Number(s): L403641
Length: 1 Semester (2 Credits)
Prerequisites: English 9
Grade: 9-12
In this course, students will read horror, mystery, fantasy and science fiction short stories and novels. We will focus on famous authors and directors who have been deemed masters in their genres. Students will analyze and discuss the distinguishing elements of each genre. The reading list and focus is expected to vary based on the interest of the students in the class. Emphasis is on reading for pleasure. Students must write and tell an original story.

Film Studies 1: Is the Book Always Better?
Course Number(s): L407111
Length: 1 Semester (2 Credits)
Prerequisites: English 9
Grade: 9-12
Students will explore how pieces of literature translate into a film or television show by focusing on author’s and director’s choices. To do this, students will learn how to examine the elements of storytelling through reading and viewing numerous texts. Students will analyze the treatment of a text through personal responses and discussion. It is expected that students will read outside of class as well as silent reading in class.

Lovers Literature: From Jane Austen to John Green
Course Number(s): L403691
Length: 1 Semester (2 Credits)
Prerequisites: None
Grade: 9-12
Students will explore how the theme of romance is portrayed in both classic and modern texts while gaining a deeper understanding of how romance has been interpreted by various authors and time periods. Discussion and short writing pieces, as well as individual and group projects, will be assessed throughout the semester. Students will be expected to read outside of class as well as silent reading in class.
Public Speaking
Course Number(s): L406411
Length: 1 Semester (2 Credits)
Prerequisites: None
Grade: 10-12
This class is designed for anybody who wants to learn to become a better speaker in front of groups. The class will become a tight-knit group as students speak and listen to each other on a daily basis. A variety of speeches will be learned and performed, including informative speeches, demonstration speeches, persuasive speeches, and debate. This skill of knowing what you want to say and saying it well will help you to get what you want throughout your entire life!

World Mythology
Course Number(s): L403311
Length: 1 Semester (2 Credits)
Prerequisites: None
Grade: 10-12
Students explore mythology – the study of traditional legends and stories passed down by oral tradition. Students study the myths of a number of cultures as the cultures struggled imaginatively with basic questions of the origin of life, of evil, and of the universe itself. Students investigate myths of the ancient cultures of Greece, Rome, Africa, Asia, and the Americas.

English as a Second Language (ESL)

Students who are eligible for ESL services will be placed by their counselors in appropriate courses.
FOCUS, Frameworks & Finale Classes

All Johnson High School students have two courses that they share in common.

During their Junior year, students take Frameworks. This class allows students to explore educational opportunities available to them after high school.

Every Johnson student must complete a Senior Project as a graduation requirement. The Senior Finale is designed to support Seniors as they write their research paper, compile a portfolio and prepare their presentation.

**FOCUS class for Freshman**

Freshman FOCUS (grade 9)
Course Number(s): Z405101
Length: 1 Semester (2 Credits)
Prerequisites: None
Grade: 9

All ninth graders are required to complete a course called Freshmen FOCUS. This class helps students identify their skills and interests, make a successful transition to high school, and engage in career exploration.

**Frameworks Class for Juniors**

Junior Frameworks
Course Number(s): Z405191
Length: 1 Semester (2 Credits)
Prerequisites: None
Grade: 11

Students will develop individual plans for education after high. Students will learn about the college admission process and the financial aid process. They also learn how to prepare for the work world by creating a resume. The class concludes with a mock interview to give students an idea of what employers are looking for. Students will also frame a proposal for their senior project.

**Senior Finale**

Course Number(s): Z405111
Length: 1 Semester (2 Credits)
Prerequisites: None
Grade: 12

The senior project is a graduation requirement for seniors at Johnson High School. The Finale class is strongly recommended for all seniors in order to successfully complete their senior project.

The purpose of the senior Finale class is to provide students with the opportunity to complete their senior project. Students will develop their research, writing and presentation skills. Students will write their research paper, document their product, prepare their presentation and complete their portfolio during the course of this class. Students will rehearse their senior project presentation at the end of the class.

**Engineering Design and Development (PLTW) (Honors)**

Course Number(s): T431621
Length: 1 Semester (2 Credits)
Prerequisites: Principles of Engineering
Grade: 12

In this capstone course, students work in teams to design and develop an original solution to a valid open-ended technical problem by applying the engineering design process. Students perform research to choose, validate, and justify a technical problem. After carefully defining the problem, teams design, build, and test their solutions while working closely with industry professionals who provide mentoring opportunities. Finally, student teams present and defend their original solution to an outside panel.

**Senior Project options for Seniors**

Note: Students may choose to complete their senior project independently. Students must see their guidance counselor to explore this option.
Mathematics

The Johnson High School Mathematics Department offers a variety of courses to introduce students to the most powerful tool mankind has developed for investigating the world. Heavy emphasis on the standards for passing the Minnesota Comprehensive Assessment (MCA) in mathematics will be covered in Intermediate Algebra, Geometry and Algebra II. Passing this test is a graduation requirement in the state of Minnesota.

Mathematics Course Sequence

Regular mathematics pathway

<table>
<thead>
<tr>
<th>Grade</th>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>9th</td>
<td>Intermediate Algebra</td>
</tr>
<tr>
<td>10th</td>
<td>Geometry or Geometry Accelerated (Honors)</td>
</tr>
<tr>
<td>11th</td>
<td>Algebra II or Algebra II Accelerated (Honors)</td>
</tr>
<tr>
<td>12th</td>
<td>Electives</td>
</tr>
</tbody>
</table>

Electives
- Analysis
- Pre-Calculus (Honors)
- Probability and Statistics AP

Advanced mathematics pathway

<table>
<thead>
<tr>
<th>Grade</th>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td>9th</td>
<td>Geometry or Geometry Accelerated (Honors)</td>
</tr>
<tr>
<td>10th</td>
<td>Algebra II or Algebra II Accelerated (Honors)</td>
</tr>
<tr>
<td>11th</td>
<td>Pre-Calculus (Honors)</td>
</tr>
<tr>
<td>12th</td>
<td>Electives</td>
</tr>
</tbody>
</table>

Electives
- Probability and Statistics AP
- Calculus
- CIS: College Algebra through Modeling
- Probability and Statistics AP

Intermediate Algebra

Course Number(s): M403011, M403013
Length: 2 Semesters (4 Credits)
Prerequisites: Must have passed basic math. Students must be able to add, subtract, multiply, and divide.
Grade: 9

This course is the second half of a two-part Algebra course focused on linear and quadratic relationships. Students will learn to represent linear and quadratic functions as verbal descriptions, equations, tables, and graphs, as well as solve linear and quadratic equations with real numbers. Students will perform basic polynomial operations, factor polynomials, and use statistics and probability to describe data sets and make predictions. Students will apply this learning to solve real-world mathematical problems. This course prepares students to be mathematically literate, as well as prepare them for future math courses, the high school MN Math Standards, and MN standardized math tests.

Geometry

Course Number(s): M404111, M404113
Length: 2 Semesters (4 Credits)
Prerequisites: Intermediate Algebra 1 or Accelerated Algebra 1 in 8th grade
Grade: 9-12

This course is a foundational course focused on the geometry of shapes, planes and space. Emphasis is placed on understanding, applying, justifying, and developing geometric properties in two and three dimensions. Students will engage in an in depth study of geometric reasoning, coordinate geometry, parallel and perpendicular lines, triangle congruence, properties of polygons and circles, similarity, right triangle trigonometry, area, and volume. Students will apply this learning to solve real-world mathematical problems. This course prepares students to be mathematically literate, as well as prepare them for future math courses, the high school MN Math Standards, and MN standardized math tests.
Geometry Accelerated (Honors)
Course Number(s): M434111, M434113
Length: 2 Semesters (4 Credits)
Prerequisites: C or higher in Accelerated Algebra or B or higher in Intermediate Algebra I
Grade: 9-12
This course is a foundational course focused on the geometry of shapes, planes and space. Emphasis is placed on understanding, applying, justifying, and developing geometric properties in two and three dimensions. Students will engage in an in depth study of geometric reasoning, coordinate geometry, parallel and perpendicular lines, triangle congruence, properties of polygons and circles, similarity, right triangle trigonometry, area, and volume. Students will apply this learning to solve real-world mathematical problems. This course prepares students for the high school MN Math Standards and MN standardized math tests. The distinction between this course and Geometry is the pacing and depth at which the above content is covered.

Algebra II
Course Number(s): M403151, M403153
Length: 2 Semesters (4 Credits)
Prerequisites: C or higher in Intermediate Algebra I
Grade: 9-12
This course is organized around the study of families of functions. Emphasis is placed on linear, quadratic and exponential functions, as well as translating these functions between graphs, tables, symbolic representations and real-life context. Students will solve equations; use trigonometric ratios; describe, analyze and evaluate data in various contexts; and use counting principles to calculate probabilities. Students will apply these concepts using a variety of technologies and apply this learning to solve real-world mathematical problems. This course prepares students for future math courses, the high school MN Math Standards, and MN standardized math tests. The distinction between this course and Algebra 2 is the pacing and depth at which the above content is covered.

Pre-Calculus (Honors)
Course Number(s): M437051, M437053
Length: 2 Semesters (4 Credits)
Prerequisites: B or higher in Geometry Accelerated; B or higher in Algebra II Accelerated or A in Algebra 2; A in Geometry
Grade: 10-12
Students planning on taking Calculus must take this course. The focus of this course is to prepare students for AP Calculus. It involves an in depth study of algebraic topics not previously covered and concentrates on the use of a graphing calculator to solve difficult real world problems. This course is for the highly motivated mathematics student who wishes to develop mature study habits necessary for college work. Students will be encouraged to have a graphing calculator for this course.

The function concept provides the basis for most of the course’s study. Polynomial functions receive thorough treatment; logarithms and exponents are taught with primary emphasis given to solution of logarithmic and
exponential equations. Matrix algebra is studied, as are
series, sequences and probability. The slope of a curve
and tangent line to a curve are discussed in connection
with polynomial and exponential functions. Right
triangle and Unit Circle trigonometry are covered, along
with a study of the graphs of the trigonometric
functions. Time is also spent solving trigonometric
equations. Series, sequence and probability are also
covered. The use of computer software and graphing
calculators facilitates the learning of selected topics and
concepts.

**SPC: College Algebra**

**Course Number(s):** M491201, M491203  
**Length:** 2 Semesters (4 Credits)  
**Prerequisites:** A or B in Analysis, B or C in Pre Calculus  
**Grade:** 11-12

This course covers algebraic functions and their
applications. Topics include linear and quadratic
functions, functions and graphs, polynomial and
rational functions, exponential and logarithmic
functions, systems of equations and inequalities, matrix
algebra, discrete algebra, the binomial theorem and
probability. Graphing calculators are used to further the
student’s understanding of essential mathematical
concepts. Students wanting to take Calculus will have
the option of taking either Pre-Calculus or both College
Algebra and Trigonometry as their prerequisites.

**Note:** This course is a Saint Paul College course which is
taught in high school. Upon successful completion of
this course, students receive five semester credits from
Saint Paul College.

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**AP Statistics (Honors)**

**Course Number(s):** M456111, M456113  
**Length:** 2 Semesters (4 Credits)  
**Prerequisites:** C or better in Algebra II  
**Grade:** 11-12

Statistical data, summaries and inferences appear more
frequently in the work and everyday lives of people
than any other form of mathematical analysis. Students
in this course will learn to collect, organize and analyze
data and then draw reasonable, usable conclusions.
They will study applications in business, physical and
social science, economics, and engineering. A TI-83
graphing calculator is strongly recommended. Students
will be prepared to take the advanced placement exam
in Statistics in the spring. This is a wonderful way to
earn college credit while in high school!

**AP Calculus AB (Honors)**

**Course number(s):** M457101, M457103  
**Length:** 2 Semesters (4 Credits)  
**Prerequisites:** B or higher in Pre-Calculus  
**Grade:** 11-12

This course in differential and integral calculus is
equivalent to the freshman calculus course offered in
most colleges and universities. The course is demanding
and requires mature study habits.
Music

The Music Department offers both performance and nonperformance courses to address the needs and interests of Johnson students. Our performance ensembles are proud to represent the school and the community in public events throughout the year.

Performance Courses: Band

<table>
<thead>
<tr>
<th>Course Name</th>
<th>Course Number</th>
<th>Prerequisites</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning Band</td>
<td>P402411, P402413</td>
<td>None</td>
<td>2 Semesters (4 Credits)</td>
</tr>
<tr>
<td>Johnson Intermediate Band</td>
<td>P402431, P402433</td>
<td>Middle or high school band experience</td>
<td>2 Semesters (4 Credits)</td>
</tr>
<tr>
<td>Johnson Band - Honors</td>
<td>P432431, P432433</td>
<td>Johnson Band; audition; theory test; teacher permission</td>
<td>2 Semesters (4 Credits)</td>
</tr>
</tbody>
</table>

**Beginning Band**

**Course Number(s):** P402411, P402413  
**Length:** 2 Semesters (4 Credits)  
**Prerequisites:** None  
**Grade:** 9-12  
This band develops inexperienced new band members’ skills so they can join Johnson Band. Beginning instrumental technique, marching skills, and group rehearsal etiquette will be included. Students will consult with the director to select a woodwind or brass instrument to play. Members accept an obligation to participate in public performances, most of which are outside the school day, including concerts, parades, and athletic events. A limited number of school instruments are available for loan. (Students with previous band experience should register for Johnson Band.)

**Johnson Intermediate Band**

**Course Number(s):** P402431, P402433  
**Length:** 2 Semesters (4 Credits)  
**Prerequisites:** Middle or high school band experience  
**Grade:** 9-12  
This class is for band students with experience and skills. This band develops technique and musicianship through a wide variety of challenging music in different settings. All members will play in concert band, pep band and marching band, and more advanced students can audition into select concert band and/or jazz band. Members accept an obligation to participate in public performances, most of which are outside the school day, including concerts, parades, and athletic events. A limited number of school instruments are available for loan.

**Johnson Band - Honors**

**Course Number(s):** P432431, P432433  
**Length:** 2 Semesters (4 Credits)  
**Prerequisites:** Johnson Band; audition; theory test; teacher permission  
**Grade:** 10-12  
This class is an honor point class for advanced musicians, and includes everything done in Johnson Band with additional rigor in the development of individual performance skills, knowledge of music theory, and introduction to music history. This band develops technique and musicianship through a wide variety of challenging music in different settings, including concert band, pep band, jazz band and marching band. Members accept an obligation to participate in public performances, most of which are outside the school day, including concerts, parades, and athletic events. A limited number of school instruments are available for loan.
### Performance Courses: Choir

<table>
<thead>
<tr>
<th>Course Name</th>
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<th>Prerequisites</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bass Choir</td>
<td>P402131, P402133</td>
<td>No prerequisites required. This course is for students who have not attained any high school choir credits on their transcript.</td>
<td>2 Semesters (4 Credits)</td>
</tr>
<tr>
<td>Treble Choir</td>
<td>P402151, P402153</td>
<td>No prerequisites required. This course is for students who have not attained any high school choir credits on their transcript.</td>
<td>2 Semesters (4 Credits)</td>
</tr>
<tr>
<td>Concert Choir (SAB/SATB) Intermediate Choir</td>
<td>P402491, P402493</td>
<td>Treble Choir or Bass Choir</td>
<td>2 Semesters (4 Credits)</td>
</tr>
<tr>
<td>“Govie Singers” Mixed Choir (SATB) Advanced Choir</td>
<td>P431701, P431703 (Honors)</td>
<td>This is an auditioned choir for students in grades 10-12. Auditions take place in the spring for the upcoming school year. No exceptions. Students must have completed Treble Choir or Bass Choir in order to audition.</td>
<td>2 Semesters (4 Credits)</td>
</tr>
</tbody>
</table>

#### Bass Choir
- **Course Number(s):** P402131, P402133
- **Length:** 2 Semesters (4 Credits)
- **Prerequisites:** None
- **Grade:** 9-12

Bass Choir is for students who have a tenor, baritone or bass vocal range and have not yet attained high school credit for choir on their transcript. In this course, students will discover the core fundamental basics of singing in an ensemble setting. Various musical concepts will be taught through daily rehearsal, self-discipline and constant teamwork. These concepts will build a skill set with an emphasis on vocal production and performance. This skill set will include: music literacy (sight singing and rhythm reading), music terminology, correct breathing and posture, proper diction, blend, balance, phrasing, intonation, tone quality, interval identification and aural training. Students will have the opportunity to sing a variety of choral literature and styles from around the world in two-four part harmony. Bass Choir will have multiple opportunities to perform before audiences throughout the school year. Members accept the obligation to participate in public performances, including some outside of the school day.

#### Treble Choir
- **Course Number(s):** P402151, P402153
- **Length:** 2 Semesters (4 Credits)
- **Prerequisites:** None
- **Grade:** 9-12

Treble Choir is for students who have a soprano or alto vocal range and have not yet attained high school credit for choir on their transcript. In this course, students will discover the core fundamental basics of singing in an ensemble setting. Various musical concepts will be taught through daily rehearsal, self-discipline and constant teamwork. These concepts will build a skill set with an emphasis on vocal production and performance. This skill set will include: music literacy (sight singing and rhythm reading), music terminology, correct breathing and posture, proper diction, blend, balance, phrasing, intonation, tone quality, interval identification and aural training. Students will have the opportunity to sing a variety of choral literature and styles from around the world in two-four part harmony. Treble Choir will have multiple opportunities to perform before audiences throughout the school year. Members accept the obligation to participate in public performances, including some outside of the school day.
Concert Choir
Course Number(s): P402491, P402493
Length: 2 Semesters (4 Credits)
Prerequisites: Treble Choir or Bass Choir
Grade: 10-12
Concert Choir is a performance-based ensemble for students in grades 10-12 with at least two previous semesters of a beginning level choir. If a student has only had one semester of a beginning level choir, they must audition and take a music theory pre-test in order to register. In this course, students will continue to expand on their knowledge from Treble or Bass Choir. This choir provides additional opportunities for students to learn self-discipline and teamwork as they continue to develop their voices within a choral ensemble. This choir is combined of soprano, alto, tenor, baritone, and bass vocal ranges. Students will sing a variety of choral literature and styles from around the world in three and four-part harmony. Through daily rehearsal, various musical concepts will be taught with an emphasis on those skills related to singing: music literacy (sight singing and rhythm reading), music terminology, correct breathing and posture, proper diction, blend, balance, phrasing, intonation, tone quality, interval identification and aural training.
Concert Choir will have multiple opportunities to perform before audiences throughout the school year. Members accept the obligation to participate in public performances, including some outside of the school day. This is a non-auditioned choir for students continuing in the choral program, and this course may be repeated.

Govie Singers
Course Number(s): P431701, P431703
Length: 2 Semesters (4 Credits)
Prerequisites: This is an auditioned choir for students in grades 10-12. Auditions take place in the spring for the upcoming school year. No exceptions. Students must have attained a minimum of four high school credits in a beginning or intermediate level choir in order to audition.
Grade: 10-12
Govie Singers is an advanced, performance-based, auditioned choir for students in grades 10-12. Auditions for Govie Singers will be held in the spring of the previous school year. Students who did not audition in the spring will not be eligible to register for this course. This choir is for music students who wish to pursue high quality ensemble performance opportunities, personal improvement through exposure to outside peer and professional performances, preparing and performing solo works, and dedication to excellent personal musical contributions to the school music program. This advanced choir performs literature in four-ten vocal parts in multiple performances in and out of the school building throughout the school year. Various, advanced, musical concepts will be taught through daily rehearsal, self discipline and constant teamwork. These concepts will build upon their current skill set with a heightened emphasis on vocal production and performance within a chamber choir setting. This skill set will include: music literacy (sight singing and rhythm reading), music terminology, correct breathing and posture, proper diction, blend, balance, phrasing, intonation, tone quality, interval identification and aural training. Day and evening performances are required. Members accept the obligation to participate in public performances, including some outside of the school day.
Performance Courses: Orchestra

<table>
<thead>
<tr>
<th>Course Name</th>
<th>Course Number</th>
<th>Prerequisites</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning Orchestra</td>
<td>P402211, P402213</td>
<td>None</td>
<td>2 Semesters (4 Credits)</td>
</tr>
<tr>
<td>Johnson Intermediate Orchestra</td>
<td>P402221, P402223</td>
<td>Middle or High School orchestra experience</td>
<td>2 Semesters (4 Credits)</td>
</tr>
<tr>
<td>Johnson Orchestra (Honors)</td>
<td>P432231, P432233</td>
<td>Orchestra Intermediate; Teacher Permission; Theory Test</td>
<td>2 Semesters (4 Credits)</td>
</tr>
</tbody>
</table>

**Beginning Orchestra**

**Course Number(s):** P402211, P402213  
**Length:** 2 Semesters (4 Credits)  
**Prerequisites:** None  
**Grade:** 9-12  
This class develops inexperienced new orchestra members’ skills so they can join orchestra. Beginning instrumental technique and group rehearsal etiquette will be included. Instruments include violin, viola, cello, and bass; a limited number of school instruments are available for loan. (Students with previous experience should register for Intermediate Orchestra.)

**Johnson Intermediate Orchestra**

**Course Number(s):** P402221, P402223  
**Length:** 2 Semesters (4 Credits)  
**Prerequisites:** Middle or High School orchestra experience  
**Grade:** 9-12  
This class is for orchestra students with experience and skills. Students will develop technique and musicianship through study of a wide variety of music. Instruments include violin, viola, cello, and bass; a limited number of school instruments are available for loan. Members accept the obligation to participate in public performances, most of which are outside the school day.

**Johnson Orchestra (Honors)**

**Course Number(s):** P432231, P432233  
**Length:** 2 Semesters (4 Credits)  
**Prerequisites:** Orchestra Intermediate; Teacher Permission; Theory Test  
**Grade:** 10-12  
This class is an honor point class for advanced musicians, and includes everything done in Orchestra with additional rigor in the development of individual performance skills, knowledge of music theory, and introduction to music theory. Students will develop technique and musicianship through study of a wide variety of music. Instruments include violin, viola, cello, and bass. A limited number of school instruments are available for loan. Members accept the obligation to participate in public performances, most of which are outside the school day.
# Performance Courses: Music Skills

<table>
<thead>
<tr>
<th>Course Name</th>
<th>Course Number</th>
<th>Prerequisites</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guitar 1: Beginning Class Guitar</td>
<td>P403311</td>
<td>None</td>
<td>1 Semester (2 Credits)</td>
</tr>
<tr>
<td>Guitar II: Intermediate</td>
<td>P403321</td>
<td>Guitar I or Audition with instructor</td>
<td>1 Semester (2 Credits)</td>
</tr>
<tr>
<td>Guitar III: Advanced</td>
<td>P403331</td>
<td>Guitar II or Audition with instructor</td>
<td>1 Semester (2 Credits)</td>
</tr>
<tr>
<td>Piano Beginning</td>
<td>P403211</td>
<td>None</td>
<td>1 Semester (2 Credits)</td>
</tr>
<tr>
<td>Piano Intermediate</td>
<td>P403221</td>
<td>Piano Beginning and/or teacher recommendation</td>
<td>1 Semester (2 Credits)</td>
</tr>
<tr>
<td>Piano Advanced</td>
<td>P403231</td>
<td>Piano Intermediate and/or teacher recommendation</td>
<td>1 Semester (2 Credits)</td>
</tr>
</tbody>
</table>

**Guitar 1: Beginning Class Guitar**
Course Number(s): P403311  
Length: 1 Semester (2 Credits)  
Prerequisites: None  
Grade: 9-12  
Learn to play the guitar! Guitar I includes basic chords and power chords, blues progressions, and basic note reading and tablature. Students will use school guitars in class, but having their own at home for practice would be helpful.

**Guitar II: Intermediate**
Course Number(s): P403321  
Length: 1 Semester (2 Credits)  
Prerequisites: Guitar I or Audition with instructor  
Grade: 9-12  
This is a continuation of Guitar I. Add to your skills in playing and reading chords, notes, and tablature. Start learning rock guitar riffs. Students will use school guitars in class, but having their own at home for practice would be helpful.

**Guitar III: Advanced**
Course Number(s): P403331  
Length: 1 Semester (2 Credits)  
Prerequisites: Guitar II or Audition with instructor  
Grade: 9-12  
This is a continuation of Guitar II. Continue to improve and advance your playing and reading chords, notes, and tablature. At this level we also work on playing in groups, and we start finger-picking. Students will use school guitars in class, but having their own at home for practice would be helpful. Guitar III may be repeated for credit.

**Piano Beginning**
Course Number(s): P403211  
Length: 1 Semester (2 Credits)  
Prerequisites: None  
Grade: 9-12  
This course is for beginning piano students who have little or no piano experience. The core objective of this course is for students to learn the basic techniques and functions of piano playing. Students will be allotted in-class time to practice piano and learn necessary performance skills such as hand positions, music reading, notation and rhythm. Students begin learning basic five-finger patterns in major keys, and learn to play pieces using those 5-finger patterns, including basic I, IV, and V7 chords. Worksheets, method books, flashcards and other supplemental materials will be used to reinforce student learning.
**Piano Intermediate**
Course Number(s): P403221  
Length: 1 Semester (2 Credits)  
Prerequisites: Piano Beginning and/or teacher recommendation  
Grade: 9-12  
This course is for piano students who have completed a beginning level piano course. The core objective of this course is for students to continue developing basic techniques and functions of piano playing. Students will be allotted in-class time to practice piano and learn necessary performance skills such as hand positions, music reading, notation, and rhythm. Students expand their five-finger pattern skills, progressing from major to minor keys, culminating in performance of one-octave scales and basic chord progressions. Repertoire selected will synthesize students’ understanding of musical elements, including melody, rhythm, harmony, dynamics, tone color, texture, and form. Worksheets, method books, and other supplemental materials will be used to reinforce student learning.

**Piano Advanced**
Course Number(s): P403231  
Length: 1 Semester (2 Credits)  
Prerequisites: Piano Intermediate and/or teacher recommendation  
Grade: 9-12  
This course is for students who have completed a beginning level and an intermediate level piano course. The core objective of this course is for students to expand their techniques and functions of piano playing. Students will be allotted in-class time to progress in their note-reading and piano performance skills. Students expand their technical skills as they learn to play scales, chords and arpeggios in major and minor keys. Individualized instruction and repertoire selected will expand students’ understanding of musical elements, including melody, rhythm, harmony, dynamics, tone color, texture, and form. Improvisation, playing “by ear” and time for creation of original compositions will be covered. Method books and other supplemental solo and ensemble literature will be used to reinforce student learning.

**Non-Performance Courses:**

**Classes About Music**

**American Music (Rock, Film, Broadway, Jazz)**
Course Number(s): P401421  
Length: 1 Semester (2 Credits)  
Prerequisites: None  
Grade: 9-12  
Discover the many sounds, styles, and artists that have influenced American music! Examples from rock, jazz, Broadway, and film music will show the evolution and variety of American music! Learn where musical styles originated and how they are continuing to change over time.

**Songwriting/Composition**
Course Number(s): P401761  
Length: 1 Semester (2 Credits)  
Prerequisites: Guitar I, Piano I, or teacher recommendation  
Grade: 9-12  
Do words and tunes inside your head look for a way to come out? Find out how songs are structured and written down, including lyrics, melody, and harmony. Create compositions of your own, and learn how to write it out so others can enjoy it, too! (Be sure to take the prerequisite course first!)

**World Music Appreciation: Writing About Music**
Course Number(s): P404111  
Length: 1 Semester (2 Credits)  
Prerequisites: None  
Grade: 9-12  
If you like to talk about music, why not try writing about it? This class explores writing descriptive critiques of music and performances, using examples from many different video and audio recordings.
Physical Education and Health

The Johnson High School Physical Education and Health Department offers courses intended to assist students in their physical fitness in High School and beyond.

Physical Education
Course Number(s): G400111
Length: 1 Semester (2 Credits)
Prerequisites: None
Grade: 9-12
This course will provide students with an opportunity to evaluate their own physical fitness and the necessary information to devise a personal lifelong physical fitness plan, as well as an opportunity to evaluate their plan once they have applied it. Students will also gain knowledge about and participate in a variety of physical activities and be able to observe the individual differences involved in the achievement of various levels of skill and fitness. This course will provide students with an opportunity to evaluate career choices through informed decision making.

Note: This is a required course for graduation.

All 10th grade students are required to take G407111 - Individual and Community Health

Individual and Community Health
Course Number(s): G407111
Length: 1 Semester (2 Credits)
Prerequisites: None
Grade: 10
This required course provides students with knowledge, attitudes, and skills to make health-promoting decisions. It addresses the physical, mental, emotional, social, and spiritual dimensions of health. Good health is not a one-time decision but a series of decisions continuing throughout a lifetime.

Graduation requires a minimum of one more course from the following list:

Advanced Physical Education
Course Number(s): G400201
Length: 1 Semester (2 Credits)
Prerequisites: Physical Education
Grade: 10-12
This course is for those students who wish to continue to develop physically, through activities that promote agility, cardiovascular conditioning and strength training. This course will also promote teamwork and cooperation and will take a closer look at rules and strategy of given games. This is an elective physical education class for those students who are willing to participate at a higher level.

American Football
Course Number(s): G402151
Length: 1 Semester (2 Credits)
Prerequisites: Teacher recommendation
Grade: 10-11
This course is for those students who wish to develop individual football skills and understanding the strategies of team play. Students will be asked to improve their strength, flexibility, agility, speed, and quickness. This is a demanding class so be ready to be physical.

Men’s Strength Training and Fitness
Course Number(s): G401211
Length: 1 Semester (2 Credits)
Prerequisites: Physical Education
Grade: 10-12
Students will learn core and machine lifting to develop overall body strength, improve flexibility and increase the efficiency of their cardiovascular system. Topics for study include nutrition, muscle anatomy, physiology, and current trends in strength training and fitness.

Physical Education
Course Number(s): G400111
Length: 1 Semester (2 Credits)
Prerequisites: None
Grade: 10-12
Students may take G400111 a second time.
**Badminton Beginning**

**Course Number(s):** G403301  
**Length:** 1 Semester (2 Credits)  
**Prerequisites:** Physical Education  
**Grade:** 10-12

Student can keep the racquet or return it (If the racquet is not broken) at the end of the class and be refunded the $15 Racquet Rental Fee.

This course is designed for students who would like to improve their badminton skills and strategies. A variety of activities promoting conditioning, agility, teamwork and cooperation will be taught throughout the course. The elective focuses on badminton rules, strategies, and the skills needed to participate at a higher level.

Be prepared to play badminton for over seventy days in the semester.

Cost: $10 Birdie Fee + $15 Racquet Rental/Own

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**Volleyball**

**Course Number(s):** G402201  
**Length:** 1 Semester (2 Credits)  
**Prerequisites:** Physical Education  
**Grade:** 10-12

This course is designed for students who would like to improve their volleyball skills and strategies. A variety of activities promoting conditioning, agility, teamwork and cooperation will be taught throughout the course. This elective focuses on volleyball rules, strategies, and the skills needed to participate at a higher level.
**Science**

In a world becoming increasingly driven by technology, the Science Department at Johnson High School is dedicated to the examination of the impact science has on the human experience. We offer insight into the various scientific disciplines and provide current information on careers in these fields of study. The department is staffed with teachers who are exceptionally interested in the courses they teach, are dedicated to the success of students, and are continually improving their own education.

**Science Course Sequence**

**Regular Science Pathway**

<table>
<thead>
<tr>
<th>Grade</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>9th Grade</td>
<td><strong>Required</strong>: PLTW Principles of Engineering Physical Science or Aerospace and Engineering Physical Science</td>
</tr>
<tr>
<td>10th Grade</td>
<td><strong>Required</strong>: Biology</td>
</tr>
<tr>
<td>11th-12th Grade</td>
<td><strong>Required</strong>: Chemistry or Physics</td>
</tr>
</tbody>
</table>

**Advanced Science Pathway**

<table>
<thead>
<tr>
<th>Grade</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>9th Grade</td>
<td><strong>Required</strong>: PLTW Principles of Engineering Physical Science</td>
</tr>
<tr>
<td>10th Grade</td>
<td><strong>Required</strong>: Accelerated Biology (Accelerated Chemistry can be taken concurrently)</td>
</tr>
<tr>
<td>11th-12th Grade</td>
<td><strong>Required</strong>: Accelerated Chemistry or CIS Physics</td>
</tr>
</tbody>
</table>

**Elective Courses**

- Biotechnical Engineering
- Forensics
- Environmental Science
- Anatomy and Physiology (CIS)
- Chemistry (SPC)
- Biology (SPC)

**Freshmen must enroll in one of the following two courses:**

**Aerospace and Engineering Physical Science**

- **Course Number(s)**: S403121, S403123
- **Length**: 2 Semesters (4 Credits)
- **Prerequisites**: None
- **Grade**: 9

Physical science is a year-long laboratory course that covers basic high school physics and chemistry concepts as well as engineering standards. These concepts are applied to Earth and space science phenomenon. Students learn about atomic structure, chemical reactions, types of energy transformations, forces, and motion. These concepts are used to investigate changes in geology, meteorology, and astronomy over time.

**PLTW: Principles of Engineering with Physical Science**

- **Course Number(s)**: S431711, S431713
- **Length**: 2 Semesters (4 Credits)
- **Prerequisites**: None
- **Grade**: 9

PLTW: Principles of Engineering with Physical Science covers general concepts of engineering, physics, engineering technology and its career possibilities. This course involves a number of projects that explore
Careers in engineering, principles of design, control systems, materials science, general mechanics and chemistry. The projects involve learning and applying fundamental principles of physics and chemistry, solving problems, designing and modifying devices. They will also learn how engineers address concerns about the social and political consequences of technological change. This course is meant to replace 9th grade science when taken with Project Lead the Way: Aerospace Engineering during 10th grade.

**Sophomores must enroll in one of the following two courses:**

**Biology**

**Course Number(s):** S406111, S406113  
**Length:** 2 Semesters (4 Credits)  
**Prerequisites:** Physical Science or Accelerated Biology  
**Grade:** 10  
This laboratory course studies living things and how they interact with each other. Students will learn about the chemistry of life, cells, genetics/DNA, evolution, ecology, and disease and human body systems while learning the skills of science and engineering. Students will participate in laboratory activities that promote scientific thinking. Successful completion of this course fulfills the state graduation requirement for biology and prepares students for future science courses.

**Accelerated Biology (Honors)**

**Course Number(s):** S436111, S436113  
**Length:** 2 Semesters (4 Credits)  
**Prerequisites:** C or better in PLTW Aerospace & Engineering Physical Science or teacher recommendation.  
**Grade:** 10  
This laboratory course is a detailed study of living systems. Students will learn about the chemistry of life, cells, genetics/DNA, evolution, ecology, and disease and human body systems while learning the skills of science and engineering. This course emphasizes investigative learning through laboratory experiences, with thorough record keeping, written analysis and presentation of results. The content and pace of the course are enhanced to be consistent with the CIS program and prepare students for CIS Biology. Successful completion of this course fulfills the state graduation requirement for biology and prepares students for future science courses.

**Juniors and Seniors must enroll in either Chemistry or Physics**

**Chemistry**

**Course Number(s):** S404111, S404113  
**Length:** 2 Semesters (4 Credits)  
**Prerequisites:** Physical Science; Intermediate Algebra I  
**Grade:** 11-12  
This laboratory course covers basic high school chemistry concepts that help students understand how the universe works at the micro-level. Students will learn about chemical and physical properties, atomic structure, periodicity, bonding, chemical reactions, the Mole, stoichiometry, solutions, and kinetic molecular theory while learning the skills of science and engineering. Class discussions, hands-on activities, group projects and laboratory work are an integral part of this course. Successful completion of this course fulfills the state graduation requirement for chemistry/physics and prepares students for future science courses.

**Accelerated Chemistry (Honors)**

**Course Number(s):** S434111, S434113  
**Length:** 2 Semesters (4 Credits)  
**Prerequisites:** ‘C’ or better in Biology or Accelerated Biology  
**Grade:** 10-12  
This rigorous laboratory course is designed to prepare students for the rigors of advanced chemistry courses. Students will learn about chemical and physical properties, atomic structure, periodicity, bonding, chemical reactions, the Mole, stoichiometry, solutions, and kinetic molecular theory while learning the skills of science and engineering. This course emphasizes investigative learning through laboratory experiences, with thorough record keeping, written analysis and presentation of results. The content and pace of the course are enhanced to be consistent with the IB/AP program and prepare students for further science courses. Successful completion of this course fulfills the state graduation requirement for chemistry/physics and prepares students for future science courses.

**Physics**

**Course Number(s):** S405111, S405113  
**Length:** 2 Semesters (4 Credits)  
**Prerequisites:** Introduction to Engineering Design I  
**Grade:** 11-12  
Physics engages students in engineering design problems related to aerospace information systems, astronautics, rocketry, propulsion, the physics of space science, space life sciences, the biology of space science,
principles of aeronautics, structures and materials, and systems engineering. Using 3-D design software, students work in teams utilizing hands-on activities, projects and problems and are exposed to various situations encountered by aerospace engineers. Completion of this course fulfills the science graduation requirement for physics or chemistry.

CIS: Physics with Writing (Honors)
Course Number(s): S495111, S495113
Length: 2 Semesters (4 Credits)
Prerequisites: Pre-Calculus
Grade: 11-12
This course is for the highly motivated science student. Mature study habits are a necessity. This course deals with more topics at greater depth and at a faster pace than regular physics. There is an emphasis on developing problem solving, computer, and scientific writing skills. The main emphasis will be on the branch of physics known as mechanics. This is the study of motion and the causes of motion through the applications of fundamental principles of physics.

Note: College in the Schools is a program in which a University of Minnesota course is taught in high school. Upon successful completion of this course, students receive four semester credits from the University of Minnesota, Twin Cities.

... Elective Classes Offered
The following elective classes satisfy the general Science credit requirements

CIS: Anatomy and Physiology (Honors)
Course Number(s): S495141, S495143
Length: 2 Semesters (4 Credits)
Prerequisites: B or better in Biology and Chemistry
Grade: 11-12
Anatomy and Physiology is an advanced biology course offering students the opportunity to examine in depth the unbelievably fascinating structure and function of human organ systems. Students examine body systems (skeletal, muscular, nervous, cardiovascular, respiratory, integumentary, and digestive). Lab work, class discussion, reading, and animal dissection will result in tremendous gains in the understanding of the human body. This course is highly recommended for any student who has a strong interest in science and medicine.

Note: College in the Schools is a program in which a University of Minnesota course is taught in high school. Upon successful completion of this course, students receive four semester credits from the University of Minnesota, Twin Cities.

PLTW Biotechnical Engineering (Honors)
Course Number(s): S434611, S434613
Length: 2 Semesters (4 Credits)
Prerequisites: Biology; Algebra II (can be taken concurrently)
Grade: 11-12
This fast-paced, challenging class requires students to put together relevant projects from the diverse fields of bio-technology, bio-engineering, bio-medical engineering, and bio-molecular engineering. It enables students to apply and concurrently develop secondary-level knowledge and skills in biology, physics, technology, and mathematics. This class is ideal for students interested in the growing biomedical field.
SPC: Biology I (Honors)
Course Number(s): S495151
Length: Fall Semester (5 Credits)
Prerequisites: C or better in Accelerated Biology or teacher recommendation.
Grade: 11-12
This is a fall semester, two period-long course that studies biological processes including cell chemistry, metabolism, reproduction, genetics, and complex cell physiology. The lab component covers the application of concepts through observation, experimentation, and problem analysis. This course is intended for students who may become biology majors, students requiring a strong biological background for selected majors, including nursing and other allied health fields, or interested college students. This class is only offered in the fall and should be taken the same school year as CIS Biology II
Note: SPC is a program in which a Saint Paul College course is taught in high school. Upon successful completion of this course, students receive five semester credits from Saint Paul College.

SPC: Biology II (Honors)
Course Number(s): S495251
Length: Spring Semester (5 Credits)
Prerequisites: CIS Biology I with a grade of C or better.
Grade: 11-12
This course is an extension of CIS Biology I and covers biological processes, including a variety of life forms (viruses, bacteria, protists, fungi, plants, and animals), their evolution, and ecology. The lab component covers organism taxonomy, classification, and mammalian systems, including comparative anatomy, organism dissections, ecological interrelationships of organisms and their environment, and independent biome research projects. Some activities include the dissection of preserved animals. This class is only offered in the spring and should be taken the same year as CIS Bio I.
Note: SPC is a program in which a Saint Paul College course is taught in high school. Upon successful completion of this course, students receive five semester credits from Saint Paul College.

SPC: Chemistry I (Honors)
Course Number(s): S495161
Length: Fall Semester (5 Credits)
Prerequisites: C or better in Accelerated Chemistry or teacher recommendation.
Grade: 11-12
This is a fall semester, two period-long course that uses the scientific method to study matter, what matter is comprised of, and how matter changes. Basic chemical theory and applications are covered with an emphasis on the principles and theories of atomic and molecular structure; periodic properties of elements; thermochemistry; reaction stoichiometry; behavior of gases, liquids and solids; molecular and ionic structure and bonding; energy sources and environmental issues related to energy use. The lab component includes the application of chemical concepts through observation, data collection, quantitative measurement, and problem analysis. This class is only offered in the fall and should be taken the same school year as CIS Chemistry II
Note: SPC is a program in which a Saint Paul College course is taught in high school. Upon successful completion of this course, students receive five semester credits from Saint Paul College.

SPC: Chemistry II (Honors)
Course Number(s): S495161
Length: Spring Semester (5 Credits)
Prerequisites: C or better in Accelerated Chemistry or teacher recommendation.
Grade: 11-12
This course is a continuation of SPC Chem I Principles of Chemistry 1 with an emphasis on chemical kinetics; radioactive decay; chemical equilibrium; solutions; acids and bases; solubility; second law of thermodynamics; electrochemistry and corrosion; descriptive chemistry of the elements; coordination chemistry; biochemistry; and applications of chemical principles to environmental problems. The lab component of this course provides students with the opportunity to apply chemical concepts through observation, data collection, quantitative measurement and problem analysis. This class is only offered in the spring and should be taken the same year as CIS Chemistry I.
Note: SPC is a program in which a Saint Paul College course is taught in high school. Upon successful completion of this course, students receive four semester credits from Saint Paul College.

Environmental Science
Course Number(s): S403111
Length: 1 Semester (2 Credits)
Prerequisites: Physical Science or Biology
Grade: 10-12
Environmental Science is the class for students interested in the interactions between people, economies, societies and the environment. Issues of pollution, population growth, urban sprawl and habitat destruction are investigated. Global and local environmental problems are discussed, researched, and approached from the laboratory perspective. Service learning projects to help solve local environmental issues are developed and implemented. Any student with an interest in environmental issues will find this a
provocative and stimulating classroom. Classroom discussions are thought-provoking and inspirational.

Forensics – Biology
Course Number(s): S406611
Length: 1 Semester (2 Credits)
Prerequisites: C or better in Biology or teacher recommendation
Grade: 11-12
This is an advanced comprehensive laboratory based exploration of many branches of Forensic Science such as the crime scene, prints, hairs and fibers, forensic anthropology, glass and soil, questioned document analysis, blood spatter analysis, entomology, impressions analysis, car crashes and criminal profiling. Students investigate a variety of crime scenes and develop their ability to make logical, rational inferences by employing the skills common in the discipline of biology, as well as practice analytical problem solving techniques used by local Police crime scene task forces and the Bureau of Criminal Apprehension.

Introduction to Industrial Robotics
Course Number(s): S402601
Length: 1 Semesters (2 Credits)
Prerequisites: Aero & Engineering Phy Sci or PLTW Prin of Eng Physical Sci
Length: 1 Semesters (2 Credits)
Grade: 10-12
Introduction to Industrial Robotics Lab is a lab based science elective that introduces industrial robotic programming and applications. The course uses the Festo Mechatronics Training Systems to address the state of Minnesota’s physical science standards. Topics for the course include: electrical circuits, digital logic, sensors, pneumatic and electrical actuators, programmable logic controllers, and computer modeling and simulations with industrial applications. This course is designed to prepare students to continue training in electromechanical systems at St Paul College or other institutions.
Social Studies

The Johnson High School Social Studies Department offers courses to introduce students to the world around them, both locally and globally. Students are required to take two semesters of World History, two semesters of Human Geography, two semesters of U.S. History, one semester of Economics, and one semester of U.S. Government before graduating.

Freshmen must enroll in one of the following two courses:

**World History**

**Course Number(s):** H405101, H405103  
**Length:** 2 Semesters (4 Credits)  
**Prerequisites:** None  
**Grade:** 9  
World History is a full year course that may be learned chronologically or thematically. In World History, students will use historical thinking skills to study themes, eras and societies from pre-history to modern times from a global perspective. SPPS students will meet the MN State Standards for Social Studies.

**World History AP (Honors)**

**Course Number(s):** H453101, H453103  
**Length:** 2 Semesters (4 Credits)  
**Prerequisites:** Grade level reading ability  
**Grade:** 9  
This advanced-level course approaches world history through a thematic lens, focusing on four chronological periods (1200 CE to the present). Students will examine global process by analyzing historical sources, making connections, and crafting historical arguments as they explore concepts like humans and the environment, cultural interactions, governance, economic systems, societal organization, and technological innovation. AP World History: Modern develops students’ ability to think and reason in a more systematic way, better preparing them for future college course.

Note: This course is strongly recommended for all future Advanced Placement coursework in Social Studies.

Sophomores must enroll in one of the following two courses:

**Human Geography**

**Course Number(s):** H402211, H402213  
**Length:** 2 Semesters (4 Credits)  
**Prerequisites:** None  
**Grade:** 10  
Human Geography is a full year course of where students will learn about local, national and global issues from a global perspective. These themes will build geo-spatial skills and understanding of places, regions and human systems. SPPS students will meet the MN State Standards for Social Studies.

**Human Geography AP (Honors)**

**Course Number(s):** H452211, H452213  
**Length:** 2 Semesters (4 Credits)  
**Prerequisites:** Grade level reading ability  
**Grade:** 10  
This course is designed to have students learn and apply AP-level skills. Students who enter this course should have the critical thinking and study skills necessary to perform and succeed at an AP level. Students will learn to study efficiently, but critically, will read a large amount of written material, and will practice rigorous methods for understanding and learning facts, for creating and testing hypotheses, and for organizing, debating and evaluating concepts and theories. This course provides practice in researching and discussing global issues, helps students to recognize and understand typical patterns of processes and behaviors, helps them to understand and explain statistical data, charts, graphs, and geographical documents, and expects a high quality of written analysis and interpretation. Students will study the nature and perspectives of geography, population, migration, agriculture, economic development, cultural geography, political geography and urbanization. This course will offer the opportunity to complete the Minnesota Graduation Standard for Social Studies, Human Geography. This course also fulfills the
Minnesota State University System’s entrance requirement. Finally, this course will prepare students for the AP Human Geography exam. Students are expected to take the Geography AP test in May.

Juniors must enroll in one of the following two courses:

**U.S. History Survey**  
**Course Number(s):** H404301, H404303  
**Length:** 2 Semesters (4 Credits)  
**Prerequisites:** None  
**Grade:** 11  
U.S. History Survey is a full year course that may be learned chronologically or thematically. Students will use historical thinking skills and multiple perspectives to study people, events and places in U.S. History. While in this course, students can expect to participate in History Day. SPPS students will meet the MN State Standards for Social Studies.

**CIS: United States History (Honors)**  
**Course Number(s):** H494101, H494103  
**Length:** 2 Semesters (4 Credits)  
**Prerequisites:** Top 20% of Class  
**Grade:** 11  
In this college history course, students prepare for the wide variety of writing expected at the collegiate level. This year-long course is comprised of two University of Minnesota classes American History 1307 and 1308. Each is a 3 credit course. The first semester surveys the political, economic, and social history of colonial America through Reconstruction. The second semester surveys two tumultuous centuries of conflict and change during the Gilded Age, the Progressive Era, American involvement in WWI, the Depression, World War II, the Cold War, and Globalization.

Unites States History: CIS is a college course taught in high school; it is not a high school class. Students have more freedom than in other course taught in high school but they also have more responsibility for their own progress. Upon successful completion of this course, students receive six semester credits from the University of Minnesota. Additionally, students will surpass the U.S. History high school standards of the state of Minnesota.

Seniors must enroll in Economics and one of the following government courses:

**Economics**  
**Course Number(s):** H406111  
**Length:** 1 Semester (2 Credits)  
**Prerequisites:** None  
**Grade:** 12  
Economics is a semester long course where students use economic reasoning skills and learn personal finance, fundamental economics concepts and microeconomic concepts. SPPS students will meet the MN State Standards for Social Studies.

**US Government**  
**Course Number(s):** H401401  
**Length:** 1 Semester (2 Credits)  
**Prerequisites:** None  
**Grade:** 12  
Government is a semester long course where students learn civic skills, civic values and principles of democracy, rights and responsibilities, governmental institutions and political processes to equip them with the knowledge and skills required for participation in civic life. SPPS students will meet the MN State Standards for Social Studies.

**CIS: The Challenge of Democracy (Honors)**  
**Course Number(s):** H491451  
**Length:** 1 Semesters (2 Credits)  
**Prerequisites:** Recommended: US History AP; Grade level reading ability  
**Grade:** 12  
In this college course, students will be introduced to the fundamentals of American government and the political process at the national, state, and local levels. We will examine the relationship between the American people and their political institutions with an emphasis on political culture, the electoral process, political parties, interest groups, and political communication. Students will be expected to actively participate in class discussions. This is a college course taught in high school; it is not a high school class. Students have more freedom then in other courses taught in high school – but they also have more responsibility for their own progress. Upon successful completion of this course, students receive four credits from the University of Minnesota.
Elective Credit Classes Offered:

**African American Studies**
Course Number(s): H404501  
Length: 1 Semester (2 Credits)  
Prerequisites: None  
Grade: 9-12  
This course examines historical periods and events in African and African-American history from African background to Reconstruction, their role in the evolution of America’s historical development, and their impact on African-Americans in the United States. Political, social, economic, and cultural aspects will be analyzed and evaluated. Special attention will be given to the conflict between slaves and slaveholders, as well as the issues and philosophies surrounding that conflict.

**Asian American Studies**
Course Number(s): H404701  
Length: 1 Semester (2 Credits)  
Prerequisites: None  
Grade: 9-12  
This course examines the Asian cultural experience in America. The course builds an understanding of the social construction of race, the role of Asian Americans in American history, and their role in current events. Students can expect to use materials from multiple voices, art, literature, and history. They will learn about identity, systems of power, resistance and resilience, transformation, continuity, and change.

**Hmong American Studies**
Course Number(s): H402401  
Length: 1 Semester (2 Credits)  
Prerequisites: None  
Grade: 10-12  
The Hmong American Studies course focuses on the Hmong American experience as an American experience. The course builds on understanding the intersection of identities, culture, history and lived experience of Hmong Americans today. Students can expect to use materials from oral history, multiple voices, art, literature and history. Students can expect to have an instructor who is experienced with the Hmong American experience.

**Law and Justice**
Next offered in 2021-22  
Length: 1 Semester (2 Credits)  
Prerequisites: None  
Grade: 11-12  
Interested in a career in law? Students in this class will be introduced to the basic structure of law and the United States justice system. Students will study the main legal institutions in the United States such as the legal profession, criminal & civil law, law enforcement, and juries. Students will also consider legal policy questions, such as racial, gender and class discrimination, the death penalty, prison systems, and policing. Students will shape their personal views of what justice is as they make connections between these issues, fundamental fairness, societal costs, and freedom.

**Psychology**
Course Number(s): H407301  
Length: 1 Semesters (2 Credits)  
Prerequisites: None  
Grade: 10-12  
This course introduces students to the systematic and scientific study of behavior and mental processes. It introduces the psychological facts, principles and phenomena associated with each of the major subfields. Topics covered include research methods, sensation and perception, states of consciousness, learning and memory, motivation and emotion, developmental psychology, theories of personality, and abnormal psychology. Students will use observation and theory to study human interaction, learning, or development, methods and techniques of primary research, and legal and ethical procedures related to research. Students will refine a topic into a research problem and will create a plan for data collection and for gathering and analyzing data.
Psychology AP (Honors)
Course Number(s): H457301
Length: 1 Semesters (2 Credits)
Prerequisites: Psychology
Grade: 10-12

AP Psychology introduces students to study of behavior and mental processes. It introduces the psychological facts, principles and phenomena associated with each of the major subfields. Topics covered include research methods, sensation and perception, states of consciousness, learning and memory, motivation and emotion, developmental psychology, theories of personality, and abnormal psychology. Students will use observation and theory to study human interaction, learning, or development, methods and techniques of primary research, and legal and ethical procedures related to research. Students will refine a topic into a research problem and will create a plan for data collection and for gathering and analyzing data. They will compare the findings to theories of human interaction, develop conclusions based on the findings, and identify implications for further study.

Students learn to study efficiently but critically, read a large amount of written material, practice rigorous methods for understanding and learning facts, creating and testing hypotheses, organizing, debating, and evaluating concepts and theories and explaining and using statistical data. Students will be expected to take the AP Test in Psychology.

Sociology
Course Number(s): H407151
Length: 1 Semester (2 Credits)
Prerequisites: None
Grade: 10-12

Sociology stresses the social contexts in which people live, how we choose friends, what we understand about the thoughts behaviors of the opposite sex, how inequalities shape our world and what social institutions shape us most. In this class, we will examine how relationships result from and sometimes change our social environment and ourselves. This course will emphasize making healthy individual decisions and how we can change the world through each person. This course will include a project on initiating social change.
Specialized Services

Course selections and placements for a student who has an Individualized Education Program (IEP) are determined by the student’s IEP team. Other specialized services offered at Johnson include mental health, speech and language therapy, transportation, paraprofessional, and nursing services. If you have any additional questions or concerns regarding course selections, please contact the case manager.

Career Seminar
Length: 1 Semester (2 credits)
Prerequisite: Active IEP & Participation in a work experience (i.e. STEPS site)
Grade: 11-12
The Career Seminar course is designed to help students explore different careers and become better prepared in job skills (including applying, interviewing, learning, and developing job skills) that are necessary to succeed in the world of work, including communication strategies. In this course, students will explore various careers and discuss important aspects of career readiness and related topics such as workplace safety, sexual harassment and workplace law.

STEPS 1 (Specialized Transition Employment Planning Services)
Length: Varies
Prerequisite: Active IEP
Grade: 10-12
In this course, students will be involved in one of the following: competitive employment, job shadowing, community service, apprenticeships, or internships.

Community Participation
Length: 1 Semester (can be taken multiple times)
Prerequisite: Active IEP
Grade: 9-12
This course is designed to provide “hands on” experiences in the community. Students will access and utilize services at a variety of community sites for the purpose of developing personal life skills. Sites are accessed by city bus, school bus, or by walking.

Human Growth & Development
Length: 2 Semesters (4 credits)
Prerequisite: Active IEP
Grade: 9-12
Students will develop the knowledge, attitudes and skills necessary to make health-promoting decisions. The course will teach health and wellness, responsible decision-making, physical fitness, mental/emotional health, self-esteem, sexuality and reproduction, safety and emergency care.

DAPE
Length: 2 Semesters (4 credits)
Prerequisite: Active IEP
Grade: 9-12
This course is designed to help students to work on individual, leisure, and team sport skills and activities.

Intermediate Algebra Concepts
Length: 2 Semesters (4 credits)
Prerequisite: Active IEP
Grade: 9-12
Intermediate Algebra Concepts course is intended to be the second half of a two-part Algebra course focused on linear and quadratic relationships. It is a full year course where students will learn to represent linear and quadratic functions as verbal descriptions, equations, tables, and graphs, as well as solve linear and quadratic equations with real numbers. Students will perform basic polynomial operations, factor polynomials, and use statistics and probability to describe data sets and make predictions. Students will apply this learning to solve real-world mathematical problems.
Geometry Concepts
Length: 2 Semesters (4 credits)
Prerequisite: Active IEP
Grade: 9-12
Geometry Concepts is a full year course focused on the geometry of shapes, planes and space. Emphasis is placed on understanding, applying, justifying, and developing geometric properties in two and three dimensions. Students will engage in the study of geometric reasoning, coordinate geometry, parallel and perpendicular lines, triangle congruence, properties of polygons and circles, similarity, right triangle trigonometry, area, and volume. Students will apply this learning to solve real-world mathematical problems.

World History Concepts
Length: 2 Semesters (4 credits)
Prerequisite: Active IEP
Grade: 9-12
Students in World History Concepts pursue in-depth study of historical thinking skills and world history to equip them with the knowledge and skills required for success in postsecondary education (i.e., freshman level courses), the skilled workplace and civic life. The amount of content in the standards for World History corresponds to the course credit graduation requirements identified in Minn. Stat. § 120B.024.

Human Geography Concepts
Length: 2 Semesters (4 credits)
Prerequisite: Active IEP
Grade: 9-12
Students in Human Geography Concepts pursue in-depth study of geo-spatial skills, places and regions and human systems to equip them with the knowledge and skills required for success in postsecondary education (i.e., freshman level courses), the skilled workplace and civic life. The amount of content in the standards for human geography corresponds to the course credit graduation requirements identified in Minn. Stat. § 120B.024.

Physical Science Concepts
Length: 2 Semesters (4 credits)
Prerequisite: Active IEP
Grade: 9-12
Physical Science Concepts is a year-long course that covers basic physics and chemistry concepts while learning the skills of science and engineering. Students will learn about atomic structure, chemical reactions, energy transformations, forces and motion. These concepts are used to investigate changes in earth and space systems over time including geology, meteorology and astronomy. Students use observations, laboratory investigations, and problem solving to analyze and understand the science of everyday phenomena.

Biology Concepts
Length: 2 Semesters (4 credits)
Prerequisite: Active IEP
Grade: 9-12
Chemistry Concepts is a year-long course that covers basic high school chemistry concepts that help students understand how the universe works at the micro-level. Students will learn about chemical and physical properties, atomic structure, the periodic table, bonding, chemical reactions, (the Mole, stoichiometry, solutions, and kinetic molecular theory) while learning the skills of science and engineering.

Reading Standards (1-6)
Length: 2 Semesters (4 credits)
Prerequisite: Active IEP
Grade: 9-12
This is a reading and writing course designed for special education students who need skill development to fully access content area curriculum. This course covers the Edge curriculum (red, orange, and blue) and Fusion curriculum to increase students reading, written language, and speaking skills. Students will be introduced to a variety of fiction and non-fiction reading materials at their independent and instructional levels, as well as basic reading and writing strategies. Most students enrolled in a reading class are also required to take an ELA class to meet the Minnesota graduation requirement for each grade.

Skills for College & Career Readiness (1-4)
Prerequisite: Active IEP
Length: Varies
Grade: 9-12
This course prepares students with Individualized Education Plans (IEPs) to improve their reading, writing, organizational, and collaborative skills. The objectives of the course are to teach the skills necessary for students with disabilities that will change their educational trajectories and improve the chance for both high school and post-secondary/career success. Students of color are over-represented in special education, and students in special education have inferior post-secondary outcomes compared with non-disabled peers. This course teaches the skills to change that predictable outcome.
World Languages

Each language course sequence prepares all learners to communicate effectively in the pluralistic society of the United States and look beyond our borders to participate fully in the global community. Cultural materials and technology provide learners with authentic experiences.

Students will:

- Speak, listen, read, and write in the target language;
- Develop insight into their own languages and cultures; and
- Gain direct access to information in the target language.

Each course is two Semesters in length. Successful completion of both Semesters is the prerequisite for the next level. The classes are available for students in grades 9 - 12.

French I
Course Number(s): W401211, W401213
Length: 2 Semesters (4 Credits)
Prerequisites: None
Grade: 9-12
Year one introduces the basic skills of listening, speaking, reading, and writing through reading and telling stories. Topics include home, school, family, and daily and leisure activities. Learning structures of the language enables students to move from recognition to creating with the language. In addition, students explore the culture, history and geography of the target-language-speaking communities.

French II
Course Number(s): W401221, W401223
Length: 2 Semesters (4 Credits)
Prerequisites: W401211 - French I
Grade: 9-12
Year two provides the language base for all further learning. It reviews the language and culture presented in year one and introduces new situations and stories. Learners increase proficiency in the language through expanded vocabulary and grammatical structures. Students communicate in the present, past, and future tenses more effectively.

French III (Honors)
Course Number(s): W431231, W431233
Length: 2 Semesters (4 Credits)
Prerequisites: W401221—French II
Grade: 9-12
This level recycles all learning from the previous two levels. More advanced practice refines the use of tenses and vocabulary as students participate in oral presentations and discussions, more advanced reading and storytelling, and creative and directed writing. Longer time segments are spent in exclusive use of the course’s language. The course’s extensive cultural materials provide more depth in comprehension and communication.

French IV (Honors)
Course Number(s): W431241, W431243
Length: 2 Semesters (4 Credits)
Prerequisites: French III
Grade: 9-12
This level integrates the vocabulary and structures from the previous three levels while substantively increasing the awareness and correct usage of verbs in multiple tenses. Students continue to develop and refine vocabulary and structures, allowing them to communicate in increasingly complex situations. Cultural materials provide increased depth in comprehension and communication.

French V (Honors)
Course Number(s): W431251, W431253
Length: 2 Semesters (4 Credits)
Prerequisites: W431241 – French IV
Grade: 9-12
This level integrates the vocabulary and structures from the previous four levels while substantively increasing the awareness and correct usage of verbs in multiple tenses. Students continue to develop and refine vocabulary and structures, allowing them to communicate in increasingly complex situations. Cultural materials provide increased depth in comprehension and communication.
French VI (Honors)
Course Number(s): W431261, W431263
Length: 2 Semesters (4 Credits)
Prerequisites: W431251 – French V
Grade: 9-12
This level integrates the vocabulary and structures from the previous five levels while substantively increasing the awareness and correct usage of verbs in multiple tenses. Students continue to develop and refine vocabulary and structures, allowing them to communicate in increasingly complex situations. Cultural materials provide increased depth in comprehension and communication.

Spanish I
Course Number(s): W401111, W401113
Length: 2 Semesters (4 Credits)
Prerequisites: None
Grade: 9-12
Year one introduces the basic skills of listening, speaking, reading, and writing through reading and telling stories. Topics include home, school, family, and daily and leisure activities. Learning structures of the language enables students to move from recognition to creating with the language. In addition, students explore the culture, history and geography of the target-language-speaking communities.

Spanish II
Course Number(s): W401121, W401123
Length: 2 Semesters (4 Credits)
Prerequisites: W401111 - Spanish I
Grade: 9-12
Year two provides the language base for all further learning. It reviews the language and culture presented in year one and introduces new situations and stories. Learners increase proficiency in the language through expanded vocabulary and grammatical structures. Students communicate in the present, past, and future tenses more effectively.

Spanish III (Honors)
Course Number(s): W431131, W431133
Length: 2 Semesters (4 Credits)
Prerequisites: W401121 – Spanish II
Grade: 9-12
This level recycles all learning from the previous two levels. More advanced practice refines the use of tenses and vocabulary as students participate in oral presentations and discussions, more advanced reading and storytelling, and creative and directed writing. Longer time segments are spent in exclusive use of the course’s language. The course’s extensive cultural materials provide more depth in comprehension and communication.

Spanish IV (Honors)
Course Number(s): W431141, W431143
Length: 2 Semesters (4 Credits)
Prerequisites: W431131 – Spanish III
Grade: 9-12
This level integrates the vocabulary and structures from the previous three levels while substantively increasing the awareness and correct usage of verbs in multiple tenses. Students continue to develop and refine vocabulary and structures, allowing them to communicate in increasingly complex situations. Cultural materials provide increased depth in comprehension and communication.

Spanish V (Honors)
Course Number(s): W431151, W431153
Length: 2 Semesters (4 Credits)
Prerequisites: W431141 – Spanish IV
Grade: 9-12
This level integrates the vocabulary and structures from the previous four levels while substantively increasing the awareness and correct usage of verbs in multiple tenses. Students continue to develop and refine vocabulary and structures, allowing them to communicate in increasingly complex situations. Cultural materials provide increased depth in comprehension and communication.

Spanish VI (Honors)
Course Number(s): W431161, W431163
Length: 2 Semesters (4 Credits)
Prerequisites: W431151 – Spanish V
Grade: 9-12
This level integrates the vocabulary and structures from the previous five levels while substantively increasing the awareness and correct usage of verbs in multiple tenses. Students continue to develop and refine vocabulary and structures, allowing them to communicate in increasingly complex situations. Cultural materials provide increased depth in comprehension and communication.
Career and Technical Education

Family and Consumer Sciences

The Family and Consumer Sciences department courses are designed to teach valuable living skills to Johnson Senior students. Please note that some classes have prerequisites and some require lab fees or students to purchase their own supplies.

Fashion and Construction

Clothing Tech I
Course Number(s): F403111
Length: 1 Semester (2 Credits)
Prerequisite: None
Grade: 9-12
If you are interested in learning how to sew, this is the class for you! Using a sewing machine and other equipment, you will learn the basic techniques for clothing construction on woven fabrics. You will also learn about the different fabric types, how to care for them, and to practice safe use of the sewing machine and other equipment.

Note: Students are required to pay a lab fee of $20.00 for all items used in class. At the end of the semester, they will be taking home multiple completed projects that will have been paid for with their lab fee.

Clothing Tech II
Course Number(s): F403121
Length: 1 Semester (2 Credits)
Prerequisite: C or better in Clothing Tech I
Grade: 10-12
If you have taken Clothing Tech 1 then Clothing Tech II is your next step. You will apply your advanced sewing/design skills through the process of making clothing, designing your own fabric and creating a usable quilt using math, design, color theory along with your creativity. We will also explore careers available in the fabric, apparel and design pathways. Students will be required to purchase fabric, patterns, and notions to complete their sewing projects that will be taken with them when the class is complete.

Note: Students are required to pay a lab fee of $20.00 for all items used in class. At the end of the semester, they will be taking home multiple completed projects that will have been paid for with their lab fee.
Housing and Design Technology
Course Number(s): F407111
Length: 1 Semester (2 credits)
Prerequisite: None
Grade: 9-12
Do you watch "HGTV" and wish you could design for the houses you see. If so, this class will teach you how to decorate your space like a pro. Through project work you will learn about housing design using the elements and principles of design. You will also become familiar with the history of housing, cultural influences in housing and various professions related to interior design.

Culinary Arts
The Culinary Arts classes often provide catering services for school events sponsored by many clubs and activities in the school.
Note: A $5.00 lab fee is required for all food courses.

Culinary Arts I
Course Number(s): F402311
Length: 1 Semester (2 Credits)
Prerequisite: None
Grade: 9-12
In this introductory course students will learn and practice safety and sanitation procedures as well as preparing basic foods. Emphasis is placed on cooking and kitchen terms, equipment, kitchen and meal management, and food preparation. Passing this course is a prerequisite to taking any advanced culinary course.
Note: A $5.00 lab fee is required for all food courses.

Culinary Arts II
Course Number(s): F402321
Length: 1 Semester (2 Credits)
Prerequisite: C or better in Culinary Arts I
Grade: 10-12
Students in the Culinary Arts II class will be able to prepare stocks, sauces, meats, along with yeast bread, pie and cakes. They will learn food preparation such as baking, broiling, and grilling. Safety and sanitation procedures for home and business will be emphasized. In the second half of the course, we will cover international cuisines. This course will focus on planning and preparing meals for a variety of food-service industries as well as for the family.
Note: A $5.00 lab fee is required for all food courses.

Child Development

Child Development
Course Number(s): F405111
Length: 1 Semester (2 Credits)
Prerequisite: None
Grade: 9-12
This course provides an overview of typical child development from conception through pregnancy, infancy, and childhood. Particular emphasis is placed on the process through which the normal human being reaches physical, social, mental and emotional maturity.

Independent Living
Course Number(s): F406201
Length: 1 semester (2 Credit)
Prerequisite: None
Grade: 11-12
This course is designed to prepare students to live on their own. Topics include making wise consumer choices, money management, setting goals, banking, checking accounts, credit, and insurance. Additional topics will include choosing a Cell phone, renting vs. buying a home, along with lifestyle and career investigation.
CIS Exploring the Teaching Profession I

Course Number(s): N490101
Length: 1 Semester (2 Credits)
Prerequisite: None
Grade: 11-12

In this College in the Schools Course CI 3901, students explore and respond to the question, “Why teach?” In doing so, they examine their own interests in teaching while taking a close look at the multiple factors (social, historical, political) that shape schools today. Students will volunteer in area schools in a service-learning capacity, attend class, make presentations, write reflective papers and blog posts in response to assignments, participate in discussions, and engage in small group learning activities. Service-learning experiences are central to learning, and along with course readings, provide the basis for discussion and reflection.

Note: College in the Schools is a program in which a University of Minnesota course is taught in high school. Upon successful completion of this course, students receive four semester credits from the University of Minnesota, Twin Cities.
Technology Education

The Technology Education department offers construction technology, basic woodworking, and CAD (computer aided design) drafting classes. In addition, Johnson High School is a certified Project Lead the Way (PLTW) school. PLTW is a national program designed to increase the quantity and quality of engineers and engineering technologists graduating from our educational system. It allows high school students to determine if engineering is a career they desire to pursue. Students participating in PLTW courses are better prepared for college engineering programs and more likely to be successful. The Technology Education department is offering five PLTW classes, Introduction to Engineering Design, Principles of Engineering, Digital Electronics, Physics of Aerospace Engineering, and Civil Engineering & Architecture.

Beginning Woodworking
Course Number(s): T402111
Length: 1 Semester (2 Credits)
Prerequisites: None
Grade: 9-12
This course acquaints students with the essential skills used in woodworking and construction. Class work will include the development of part drawings, blueprint reading, plan of procedures, precise measurement and estimating materials. Student’s projects teach the safe and proper use of a variety of woodworking tools. Students are required to complete projects that are designed to develop primary woodworking skills. Safety glasses are required.

Note: There is a $10 lab fee for this course.

Construction Carpentry
Course Number(s): T404501
Length: 1 Semester (2 Credits)
Prerequisites: Beginning Woodworking
Grade: 10-12
Construction Carpentry will provide students the opportunity to explore the construction trades in a classroom and lab environment. Students will develop a variety of technical skills associated with residential construction, build simple structures and make minor repairs on residential buildings. Areas of construction include but not limited to the following: safety procedures, building layout, rough construction, electrical systems, drywall, applied mathematics, communications, and career opportunities. Safety glasses are required.
Project Lead the Way (PLTW)
Johnson High School is a certified Project Lead the Way high school. The following pre-engineering classes use project-based, hands-on experiences to introduce students to the key elements and skills of engineering careers. To learn more about Project Lead the Way, please visit the website at http://www.pltw.org.

Introduction to Engineering Design I (PLTW)
Course Number(s): T431481
Length: 1 Semesters (2 Credits)
Prerequisites: Geometry or Current Enrollment in Geometry;
Grade: 9-12
This course emphasizes the development of a design. Students use computer software to produce, analyze and evaluate models of projects solutions. They study the design concepts of form and function, and then use state-of-the-art technology to translate conceptual design into reproducible products. This course teaches students to:
- Understand and apply the design process to solve various problems in a team setting;
- Apply adaptive design concepts in developing sketches, features, parts and assemblies;
- Interpret their own sketches in using computer software to design models;
- Understand mass property calculations – such as volume, density, mass, surface area, moment of inertia, product of inertia, radii of gyration, principal axes and principal moments – and how they are used to evaluate a parametric model;
- Understand cost analysis, quality control, staffing needs, packing and product marketing;
- Explore career opportunities in design engineering and understand what skills and education these jobs require; and
- Develop portfolios to display their designs and present them properly to peers, instructors and professionals.

Introduction to Engineering Design II (PLTW)
Course Number(s): T431471
Length: 1 Semester (2 Credits)
Prerequisites: Introduction to Engineering Design I or Gateway
Grade: 9-12
This class is a continuation of Introduction to Engineering Design I. Please see the IED I course description above for detailed information.
Note: Students can earn college credit by passing PLTW summative test at the end of the semester.

PLTW: Principles of Engineering with Physical Science
Course Number(s): S431711, S431713
Length: 2 Semesters (4 Credits)
Prerequisites: None
Grade: 9
PLTW: Principles of Engineering with Physical Science covers general concepts of engineering, physics, engineering technology and its career possibilities. This course involves a number of projects that explore careers in engineering, principles of design, control systems, materials science, general mechanics and chemistry. The projects involve learning and applying fundamental principles of physics and chemistry, solving problems, designing and modifying devices. The will also learn how engineers address concerns about the social and political consequences of technological change.
Note: Students can earn college credit by passing PLTW summative test at the end of the semester.
Computer Integrated Manufacturing (PLTW) (Honors)
Course Number(s): T531711
Length: 1 Semesters (2 credits)
Prerequisites: Principles of Engineering
Grade: 10-12
How are things made? What processes go into creating products? Is the process for making a water bottle the same as it is for a musical instrument? How do assembly lines work? How has automation changed the face of manufacturing? While students discover the answers to these questions, they’re learning about the history of manufacturing, robotics and automation, manufacturing processes, computer modeling, manufacturing equipment, and flexible manufacturing systems.

Computer Science and Software Engineering (CSE) (Honors)
Course Number(s): T431461, T431463
Length: 2 Semesters (4 credits)
Prerequisites: Principles of Engineering
Grade: 10-12
With an emphasis on computational thinking, in this 1-year long computer science course, students will be exposed to a diverse set of computational thinking concepts and tools, which will allow them to develop programming expertise and additionally, explore the workings of the internet. This will be achieved by having students create projects and solve problems thru story/game development, app creation, data visualization, web analysis and cyber security…time permitting. Programming languages utilized will include, “Scratch”, “MIT-AppInventor”, HTML and primarily, “Python”.  
Note: Students can earn college credit by passing PLTW summative test at the end of the semester.

Intro To Computer Programming
Course Number(s): T405301
Length: 1 Semester (2 credits)
Prerequisites: None
Grade: 9-12
With an emphasis on computational thinking, in this 1-semester long introduction to computer programming course, students will be exposed to a diverse set of computational thinking concepts and tools which will allow the student to gain an understanding of, and confidence in, the language of computer programming. This will be achieved by students becoming proficient in the language of computer programming by using visual “block based” programming code to create logic statements and eventually, game and story based projects for demonstration to fellow classmates. The main programming languages utilized in this course are “Scratch” and “MIT-AppInventor”.

Biotechnical Engineering (PLTW) (Honors)
Course Number(s): S434611, S434613
Length: 2 Semesters (4 Credits)
Prerequisites: Biology or Biology AP; Algebra II (can be taken concurrently)
Grade: 11-12
This face-paced, challenging class requires students to put together relevant projects from the diverse fields of bio-technology, bio-engineering, bio-medical engineering, and bio-molecular engineering. It enables students to apply and concurrently develop secondary-level knowledge and skills in biology, physics, technology, and mathematics. This class is ideal for students interested in the growing biomedical field.

Engineering Design and Development (PLTW) (Honors)
Course Number(s): T434621
Length: 1 Semesters (2 Credits)
Prerequisites: Principles of Engineering
Grade: 12
In this capstone course, students work in teams to design and develop an original solution to a valid open-ended technical problem by applying the engineering design process. Students perform research to choose, validate, and justify a technical problem. After carefully defining the problem, teams design, build, and test their solutions while working closely with industry professionals who provide mentoring opportunities. Finally, student teams present and defend their original solution to an outside panel.
Civil Engineering & Architecture (PLTW) (Honors)

Course Number(s): T431611
Length: 1 Semesters (2 Credits)
Prerequisites: None
Grade: 11-12

The major focus of the Civil Engineering and Architecture (CEA) course is a long-term project that involves the development of a local property site. As students learn about civil engineering and architecture, they apply what they learn to the design and development of this property. Developing the property as a simulation and model allows students to learn what civil engineers and architects experience while developing properties. The CEA course is structured to enable students to have a variety of experiences that will provide an overview of both fields. Students work individually and in teams exploring hands-on projects and activities to learn the characteristics of civil engineering and architecture. In addition, students will use state of the art software packages to help them design solutions to solve class assignments and projects. Students learn about documenting their project, solving problems and communicating their solutions to various audiences.

Note: Students can earn college credit by passing PLTW summative test at the end of the semester.

Introduction to Industrial Robotics

Course Number(s): S402601
Length: 1 Semesters (2 Credits)
Prerequisites: Aero & Engineering Phy Sci or PLTW Prin of Eng Physical Sci
Grade: 10-12

Introduction to Industrial Robotics Lab is a lab based science elective that introduces industrial robotic programming and applications. The course uses the Festo Mechatronics Training Systems to address the state of Minnesota’s physical science standards. Topics for the course include: electrical circuits, digital logic, sensors, pneumatic and electrical actuators, programmable logic controllers, and computer modeling and simulations with industrial applications. This course is designed to prepare students to continue training in electromechanical systems at St Paul College or other institutions.
Saint Paul Career Pathways Academy
Located at Saint Paul College

The Saint Paul Career Pathways Academy is a district-wide high school program available for sophomores, juniors and seniors to attend Saint Paul College and have the opportunity to earn several college credits as well as high school credit. Participation in these courses allows students to explore careers in Medical, Business, and Computer Technology and earn industry certifications. All courses are FREE to students with transportation provided. Students attend a two-hour block course taught by a high school teacher and take their remaining courses at their home high school. See your counselor for admission requirements and details.

Saint Paul Career Pathways Academy is an option for:
- Students who want to explore college by taking rigorous courses with certification possibilities.
- Students who are ready to prepare for highly skilled technical workplaces or possible internships.
- Students in grades 10, 11 or 12 who are on track for graduation and who qualify for Post Secondary Education Options.
- Seniors need to have a 2.0 GPA or higher and be in the TOP 50% of their class.
- Juniors need to have a 2.0 GPA or higher and be in the TOP 33% of their class.
- Sophomores who would like to participate in the program need to have taken and passed their 8th grade MCA Reading test.

Transportation Provided:
Bus transportation from the student’s home high school will be provided to the Saint Paul Career Pathways Academy.

Registration Process:
Students interested in attending Saint Paul Career Pathways Academy must see their school guidance counselor for registration application information.

Schedule:
Students attend a two-hour block career course and take their remaining courses at their home high school.
**Medical Careers Pathway**

Focus on Nursing Assistants and Home Health Aides performing such tasks as feeding, bathing, positioning, ambulating and comfort measures for the client. Students explore and discuss legal, ethical and safety issues in client care. In addition, students will receive first-hand information from professionals in the medical and health-related fields. The course provides certification in Nursing Assistant/Home Health Aide, CPR and First Aid.

**C401511 Medical Careers/Nursing Assistant**

**Course Number(s):** C531511 or C531513  
**Length:** 1 Semester (2 Credits)  
**Prerequisites:** None (See school counselor for application information.)  
**Grade:** 12  
Nursing assistants and Home Health Aides provide direct client care under the direction of a nurse or doctor in a variety of health care settings. Using technical skills learned in both the classroom and clinical setting, nursing assistants and home health aides perform such tasks as feeding, bathing, positioning, ambulating and comfort measures for the client. Students explore and discuss legal, ethical, and safety issues in client care. Students are prepared to take the Nursing Assistant/Home Health Aide test to be placed on the Minnesota State Nursing Assistant Registry. This course will provide students with an opportunity to evaluate career choices through informed decision-making. Students will receive first-hand information from professionals in the medical and health-related fields. This exploration will be supported through a variety of activities including: library and internet research, career assessment instruments, informal interviews and/or volunteer opportunities.

**Business Careers Pathway**

Students take a practical and analytical approach to developing written and oral business communication skills. Additional focus on introductory information about computer hardware/software, working with drives, folders, files and the uses of the computer as a productivity tool.

**Introduction to Business**

**Course Number(s):** B538111  
**Length:** 1 Semester (2 Credits)  
**Prerequisites:** None  
**Grade:** 11-12  
Introduction to Business offers an introduction to the United States Business system. Students will explore economic principles, international business, business ethics, marketing, and financial principles.

**Business Communications**

**Course Number(s):** B538211  
**Length:** 1st Semester  
**Prerequisites:** Recommended Introduction to Business  
**Grade:** 11-12  
This course takes a practical and analytical approach to developing written and oral business communication skills. Students learn to analyze the audience and purpose of the communication, research and organize ideas, format and design written documents, and create oral presentations based on the subject matter and content. Students will learn to work cooperatively in groups and in meetings. Applying the rules for proper grammar and punctuation will be incorporated.

**Business Computer Fundamentals**

**Course Number(s):** B538511  
**Length:** 1 Semester (2 Credits)  
**Prerequisites:** None  
**Grade:** 11-12  
This computer applications course is offered at Saint Paul College Career Pathways Academy for college as well as high school credit. Students will learn skills in word processing, spreadsheets; database, and presentation; software along with integration of these applications, in word processing, students will learn advanced formulas, linking, charts, and formatting.

**Business Information Applications**

**Course Number(s):** B538611  
**Length:** 1 Semester (2 Credits)  
**Prerequisites:** Business Computer Fundamentals  
**Grade:** 11-12  
This second course in a series offered at the Career Pathways Academy at Saint Paul College, teaches advanced features of computer applications. Students will learn advanced skills in word processing, spreadsheets; database, and presentation; software along with integration of these applications, in word processing, students will learn advanced formulas, linking, charts, and formatting.
Saint Paul Automotive Center  
Located at Monroe Community School

The Saint Paul High School Automotive Center is a Nationally Certified Automotive Training Center located at Monroe Arts Plus Middle School and is open to all Saint Paul High School students in 10th, 11th, or 12th grade. The program complies with the National Automotive Technicians Education Foundation (NATEF) standards and requirements and follows the Automotive Youth Education Systems (AYES) curriculum. The Program prepares students for ASE certification and post-secondary automotive programs. The program has post-secondary articulation agreements with Dakota County Technical College and Dunwoody College automotive programs. Summer work and internships may also be available to qualified students. Students are provided Metro Transit bus cards for transportation between the automotive center and their high school. See your counselor for admission and details.

Maintenance and Light Repair 1  
Course Number(s): T432111  
Length: 1 Semester (2 Credits)  
Prerequisites: None  
Grade: 10-12  
This course allows students to explore career opportunities and requirements of a professional service technician.

- Content emphasizes beginning transportation service skills and workplace success skills.
- Students study safety, tools, equipment, shop operations, and the fundamentals of operation, maintenance, and basic repair procedures for automotive engine mechanical systems, heater and air conditioning systems, and drive train systems.
- Classroom and shop activities simulate automotive service industry operations through the use of training aids, shop vehicles, and customer work as available.

Completion of Maintenance and Light Repair 1 will give the student a good foundation in the operation, maintenance, and repair of an automobile and prepare students for employment, further advanced training in a post-secondary automotive program, and NATEF certification.

Maintenance and Light Repair 2  
Course Number(s): T432121  
Length: 1 Semester (2 Credits)  
Prerequisites: None  
Grade: 10-12  
This course allows students to explore career opportunities and requirements of a professional service technician.

Content emphasizes beginning transportation service skills and workplace success skills. Students study safety, tools, equipment, shop operations, and the fundamentals of operation, maintenance, and basic repair procedures for automotive electrical systems and engine performance systems, as well as the fundamentals of hybrid vehicle information.

Classroom and shop activities simulate automotive service industry operations through the use of training aids, shop vehicles, and customer work as available. Completion of Maintenance and Light Repair 2 will give the student a good foundation in the operation, maintenance, and repair of an automobile and prepare students for employment, further advanced training in a post-secondary automotive program, and NATEF certification.
Maintenance and Light Repair 3

Course Number(s): T432131
Length: 1 Semester (2 Credits)
Prerequisites: None
Grade: 10-12

This course allows students to explore career opportunities and requirements of a professional service technician.

- Content emphasizes beginning transportation service skills and workplace success skills.
- Students study safety, tools, equipment, shop operations, and the fundamentals of operation, maintenance, and basic repair procedures for automotive suspension systems, steering systems, and brake systems.
- Classroom and shop activities simulate automotive service industry operations through the use of training aids, shop vehicles, and customer work as available.

Completion of Maintenance and Light Repair 3 will give the student a good foundation in the operation, maintenance, and repair of an automobile and prepare students for employment, further advanced training in a post-secondary automotive program, and NATEF certification.
APPENDIX A: Advanced Placement (AP) Courses

English
L455201 Language and Composition AP
L453211 Literature and Composition AP

Mathematics
M456111 Probability and Statistics AP
M457101 AP Calculus AB

Social Studies
H452211 Human Geography AP
H457301 Psychology AP
H453101 World History AP

APPENDIX B: College in the Schools Dual Credit Courses

English
L495501 CIS: College Writing & Critical Reading (University of Minnesota)
L493501 CIS: Introduction to Literature: Poetry, Drama, and Narrative (University of Minnesota)

Social Studies
H491451 CIS: The Challenge of Democracy (University of Minnesota)
H494101 CIS: United States History (University of Minnesota)

Science
S495111 CIS: Intro to College Physics (University of Minnesota)
S495141 CIS Anatomy and Physiology (University of Minnesota)
S495151 SPC: Biology (Saint Paul College)
S495251: SPC Biology II (Saint Paul College)
S495161 SPC: Chemistry (Saint Paul College)
S495191 SPC: Chemistry (Saint Paul College)

Math
M491101 SPC: College Algebra (Saint Paul College)

Education
N490101 CIS: Exploring the Teaching Profession I (University of Minnesota)
APPENDIX C: Registration

Registration Instructions

1. The goal of registration is to select appropriate courses that match a student’s ability and future college/career interests. For a list of graduation requirements, please refer to the Academic Standards section in this guide. If students are unsure of which courses to select, they should contact or make an appointment with their counselor.

2. When choosing courses, please pay close attention to the Prerequisites and Grade level of the course. Students must have successfully completed the prerequisite course or conditions listed and enrolled at the appropriate grade level before selecting the class.

3. Students should begin by looking at the front page of the registration sheet. On this page, students should select courses in English, Social Studies, Math and Science by placing an “X” next to the course in which they would like to take. Courses in bold print are common choices for students in that grade. Other required courses for each grade level are already pre-selected with an “X.”

4. After completing the front side of the registration form by selecting one course from each core academic area (English, Social Studies, Math and Science), students must select 10 additional courses by placing numbers 1 to 10 next to the desired courses. The 1 to 10 numbers will rank the importance of the classes chosen. 1 being the class that a student wants to have most in their schedule. For example: A student’s first course selection is Beginning Woodworking and places a number “1” next to the course. The student’s second choice is Intro to Theatre, and places a number “2” next to the course. The student will continue selecting courses until they have selected 10 courses. These selections can be from the front or back of the form.

5. If you are entering Ninth Grade, please reference number 6 below for further instructions. Entering Tenth Graders should reference number 7. Entering Eleventh Graders should refer to number 8, and Twelfth Graders please refer to number 9 for additional instructions.

6. A Ninth Grade student’s schedule typically includes the following:
   - English (English 9 or English 9 Accelerated)
   - Social Studies (World History or AP World History)
   - Math (Intermediate Algebra I, Geometry, Geometry Accelerated, Algebra II or Algebra II Accelerated)
   - Science (Aerospace and Engineering Physical Science or Principles of Engineering with Physical Science)
   - Introduction to Engineering Design I
   - Students in the Aerospace / Engineering program must select one Pathway Course as per 9th grade registration form
   - Electives to fill the remaining classes, may include a world language, art, music or physical education

7. A Tenth Grade student’s schedule typically includes the following:
   - English (English 10 or English 10 Accelerated)
   - Social Studies (Human Geography or AP Human Geography)
   - Science (Biology, Biology Accelerated, or Chemistry Accelerated)
   - Mathematics (Geometry, Geometry Accelerated, Algebra II, Algebra II Accelerated or other appropriate Math course)
   - Health
   - Physical Education
   - For Tenth Grade students enrolled in the Aerospace and Engineering magnet program receiving transportation: Students in the Aerospace / Engineering program must select one Pathway Course as per 10th grade registration form
   - Electives (to fill the remaining classes, may include a world language, art, music or physical education)

8. An Eleventh Grade student schedule typically includes the following:
   - English (English 11, AP English Lang and Comp, or AP English Lit and Comp)
   - Social Studies (US History Survey or CIS US History)
   - Science (Chemistry, CIS Chemistry, Chemistry Accelerated, Physics, or CIS Biology)
   - Mathematics (Algebra 2, Algebra II Accelerated or other appropriate Math course)
   - Frameworks
   - For Eleventh Grade students enrolled in the Aerospace and Engineering magnet program receiving transportation: Students who have successfully completed the Computer Integrated Manufacturing PLTW
or Computer Science and Software Engineering PLTW course should select Aerospace Engineering or Civil Engineering & Architecture. Students who were unsuccessful in the Computer Integrated Manufacturing PLTW or Computer Science and Software Engineering PLTW courses, or are new to Johnson, and wish to stay in the magnet program with transportation, must choose one of the A / E Magnet Approved Courses on the back of the registration form.

- Electives (to fill the remaining classes, may include a world language, art, music or physical education)

9. A Twelfth Grade student schedule typically includes the following:
   - English (English 12, AP English Lang and Comp, AP English Lit and Comp, or CIS courses)
   - Social Studies (Economics and US Government or CIS Challenge of Democracy and Economics)
   - Science (Appropriate course for the student’s post-secondary plan)
   - Mathematics (Appropriate course for the student’s post-secondary plan)
   - Senior Finale or Engineering Design and Development PLTW
   - Electives (to fill the remaining classes, may include a world language, art, music or physical education)

**Note:** Twelfth grade students should continue to challenge themselves senior year as many colleges and scholarship organizations expect students to have college prep courses on their schedule.

**Additional Notes:**
*If you are interested in the St. Paul Pathways courses listed in the Saint Paul Career Pathways Academy section of this guide or the PSEO program found in the School Program section, please see your counselor for details and to complete the appropriate application. Students should still fill out their registration form per steps 1-5.

*If the student has an IEP plan and receiving special education services, please contact the student’s case manager to discuss options for course selection.
APPENDIX D: The Senior Project

Every student at Johnson High School is required to complete a Senior Project to be eligible for graduation. The Senior Project is a student-designed experience consisting of three components.

- **The Senior Paper** is a 5 page paper that combines research and reflection on the topic students choose to study for their Senior Product.

- **The Senior Product** is a hands-on learning experience designed by the student. Students spend a minimum of 15 hours outside of the classroom physically learning about a topic that interests them.

- **The Senior Presentation** is an 8-12 minute oral presentation, which allows students to tell the story of their Senior Project to an audience of interested adults and peers.

**Senior Project course options for Seniors**

Note: Students may choose to complete their senior project independently. Students must see their guidance counselor to explore this option.

**Senior Finale**

Course Number(s): Z405111
Length: 1 Semester (2 Credits)
Prerequisites: None
Grade: 12

The senior project is a graduation requirement for seniors at Johnson High School. The Finale class is strongly recommended for all seniors in order to successfully complete their senior project.

The purpose of the senior Finale class is to provide students with the opportunity to complete their senior project. Students will develop their research, writing and presentation skills. Students will write their research paper, document their product, prepare their presentation and complete their portfolio during the course of this class. Students will rehearse their senior project presentation at the end of the class.

**Engineering Design and Development (PLTW) (Honors)**

Course Number(s): T431621
Length: 1 Semester (2 Credits)
Prerequisites: Principles of Engineering
Grade: 12

In this capstone course, students work in teams to design and develop an original solution to a valid open-ended technical problem by applying the engineering design process. Students perform research to choose, validate, and justify a technical problem. After carefully defining the problem, teams design, build, and test their solutions while working closely with industry professionals who provide mentoring opportunities. Finally, student teams present and defend their original solution to an outside panel.