# Student Innovation Center @ R2i2


## 2025-2026 Course Guide

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**What is the Student Innovation Center @ R2i2?**

The Student Innovation Center is a facility that aims to offer students grades 10-12 CTE courses not available at the home schools (Blythewood, E-school, Spring Valley, Ridge View, Richland Northeast, Westwood.)

**Location of the Student Innovation Center**

The Student Innovation Center @ R2i2 is nestled within the Village at Sandhills. The entrance to our center is located on the right side of the Richland School District Two district office building.

**Our Mission**

Our mission is to empower a diverse community of students through innovative and authentic learning experiences, preparing them for success in an evolving world.

**Vision**

“To foster a culture of innovation and resilience, preparing students to become impactful leaders.”

**How to Register for Student Innovation Center Classes?**

If a student is interested in taking classes at the Student Innovation Center, they must contact their home school counselor. School counselors are able to assist students with determining if Student Innovation Center classes are the proper fit (career interests, avoiding scheduling conflicts, graduation requirements, etc.) If students or school counselors have questions, they can contact Natasha Vaughn (803) 738-3208 or navaughn@richland2.org.

## Course Withdrawal (Drop/Add Period)

With the first day of enrollment in a course as a baseline, students who withdraw from a course within five days in a semester course will do so without penalty. Students who withdraw from a course after the specified time of five days for a 90 day course without administrative approval shall be assigned a WF/50. The WF/50 will be calculated in the student's overall grade point average.

Students who dropout of school or are expelled after the allowed period for withdrawal, but before the end of the the grading period, will be assigned grades in accordance with the following policies:

- The student will receive a WP if he/she was passing the course. The grade of WP will carry no earned units of credit and no quality points will be factored into the student's GPA.
- The student will receive a WF if he/she was failing the course. The grade of WF will carry no earned units of credit but will be factored into the student's GPA as a 50.

## The Student Innovation Center's Bell Schedule
## (This bell schedule is subject to change)

### Morning Session

| Block | Monday, Tuesday, Thursday & Friday | Late Start Wednesday |
|---|---|---|
| 1-2 | 9:30-10:33 | 10:30-11:03 |
| 3-4 | 10:37-11:52 | 11:07-11:52 |

### Afternoon Session

| Block | Monday, Tuesday, Thursday & Friday | Late Start Wednesday |
|---|---|---|
| **1-2** | **1:00-2:06** | **2:00-2:36** |
| **3-4** | **2:10-3:16** | **2:40-3:16** |

**Transportation to and from the Student Innovation Center @ R2i2**

Students may take the SIC shuttle from their home school to the Student Innovation Center for the morning and afternoon sessions. The transportation schedule for each high school is below. If students take the SIC shuttle, they may choose one or two one-credit courses or one of the culinary arts classes.

**Regular Schedule**

| | Time | BHS | WWHS | RVHS | SVHS | RNE |
|---|---|---|---|---|---|---|
| **AM- HS to SIC** | Class starts @ 9:30 | 8:50 | When all buses have arrived | 9:05 | 8:50 | 8:50 |
| **Mid Day- SIC to HS** | Release @ 11:52 | 12:00 | 12:00 | 12:00 | 12:00 | 12:00 |
| **Mid Day- HS to SIC** | Class at @ 1:00 | 12:30 | 12:35 | 12:30 | 12:30 | 12:30 |
| **PM SIC to HS** | Release @ 3:16 | 3:30 | 3:30 | 3:30 | 3:30 | 3:30 |

**Late Start Wednesday**

| | Time | BHS | WWHS | RVHS | SVHS | RNE |
|---|---|---|---|---|---|---|
| **AM- HS-SIC** | 10:30 | 9:50 | 9:50 | 10:05 | 9:50 | 9:50 |
| **Mid-SIC-HS** | 11:52 | 12:00 | 12:00 | 12:00 | 12:00 | 12:00 |
| **Mid- HS-SIC** | 2:00 | 1:30 | 1:30 | 1:30 | 1:30 | 1:30 |
| **PM- SIC to HS** | 3:16 | 3:30 | 3:30 | 3:30 | 3:30 | 3:30 |

# Student Innovation Center Courses

## Clean Energy Engineering

| | |
|---|---|
| **Clean Energy 1: Clean Energy Systems**<br>**"Next Energy Engineering 1"**<br>**(Honors or College Prep)**<br>**Course Code: 638000CW or 638000HW** | **Grade Level: 10, 11, 12**<br>**Credit: 1 Unit** |

In this course, students follow an engineering design process to build, test, and optimize clean energy solutions for local and global problems. Working with solar, thermal, chemical, and mechanical sources of energy, students develop prototypes to illustrate the interrelationships between forms of clean energy. Students engage in a variety of hands-on projects and activities to explore the relevant relationships between work, power and energy that will be directly applied to electric vehicles in Course 3.

| | |
|---|---|
| **Clear Energy 2: Clean Applications**<br>**"Next Energy Engineering 2"**<br>**(Honors or College Prep)**<br>**Course Code: 638100CW or 638100HW** | **Grade Level: 10, 11, 12**<br>**Credit: 1 Unit** |
| **Prerequisites: Clean Energy Systems** | |

Clean Energy Systems 2 builds on the foundation of Course 1 and introduces nuclear power, steam generation, fuel cells, geothermal power, waterpower, AC/DC power generation, heat transfer and the laws of thermodynamics. In addition, students now use chemical and thermal energy principles to create, store and use energy efficiently to power a variety of mechanical and electrical devices. Students will engage in a variety of hands-on design projects to demonstrate principles using advanced technology hardware and software.

| | |
|---|---|
| **EV Fundamentals**<br>**(Honors or College Prep)**<br>**Course Code: 680800CW** | **Grade level: 11, 12**<br>**Credit: 1 unit** |
| **PREREQUISITES: Clean Energy Systems and Mechanical Design 1 OR Siemens Engineering 1** | |

In the EV Fundamentals course, students will build on their foundational knowledge of circuits, electricity, and power from Clean Energy Systems in order to explore electric vehicles (EV), high voltage batteries, and the impact of emerging technologies on EV manufacturing and the charging infrastructure. Students will engage in a variety of hands-on design projects to demonstrate principles using advanced technology hardware and software, including the assembly, testing, and improvement of an electric vehicle. This course will also prepare students for the ASE xEV Electrical Safety Awareness (Level 1) certification.

| | |
|---|---|
| **Battery Research, Development, and Innovations**<br>**Course Code: 680900CW** | **Grade level: 11, 12**<br>**Credit: 1 unit** |
| **Prerequisites: Mechanical Design 1 OR Siemens Engineering 1**<br>**Clean Energy Systems**<br>**Electric Vehicle Fundamentals** | |

In this capstone course for the Advanced Automotive Engineering Technology pathway, students will apply prior knowledge of sustainable energy, electric vehicles, and design to create an innovation in the clean energy or automotive sector. Using an invention process from Lemelson-MIT, students will research a problem in local industry and follow human centered design to engineer a unique solution, resulting in a functional prototype and a provisional patent.

## Computer Programming With Python

| | |
|---|---|
| **Computer Programming with Python 1**<br>**"Coding Using Python"**<br>**506400CW** | **Grade level: 10, 11, 12**<br>**Credit: 1 unit** |

Computer Programming 1 with Python is designed to emphasize the fundamentals of computer programming. Topics include computer software, program design and development, and practical experience in programming, using modern, object-oriented languages. (Satisfies Computer Science Graduation Requirement).

| | |
|---|---|
| **Computer Programming with Python 2**<br>**506500CW** | **Grade level: 10,11, 12**<br>**Credit: 1 unit** |
| **Prerequisites: Computer Programming with Python 1** | |

Computer Programming 2 with Python is designed to emphasize the fundamentals of computer programming. Topics include computer software, program design and development, and practical experience in programming, using modern, object-oriented languages.

| | |
|---|---|
| **Game Design and Development**<br>**535200CW** | **Grade level: 11, 12**<br>**Credit: 1 unit** |

Game Design and Development is a course covering major aspects of game design including character and world development, game playing, game genres, and theories and principles of game design. Students will gain hands-on experience in simple game development. Concepts and practices will be explored to help students decide if they are interested in pursuing careers in game programming.

## Fashion Marketing and Merchandising

| | |
|---|---|
| **Fashion Marketing**<br>**541000CW** | **Grade level: 10, 11, 12**<br>**Credit: 1 unit** |

The Fashion Marketing course explores concepts and practices of the fashion industry to include an overview, the nature of fashion, elements and principles of design, textile basics, and career development. Students will incorporate marketing techniques and skills in the development of a marketing plan. Creativity, innovation, and collaboration are emphasized throughout the course.

| | |
|---|---|
| **Merchandising**<br>**543000CW** | **Grade level: 10, 11, 12**<br>**Credit: 1 unit** |

The Merchandising course prepares individuals to understand the process of merchandising as it relates to the resale of products and product lines for stores, chains, and other retail enterprises. Concepts included in the course include product planning and development, buying, pricing, branding, inventory management, visual merchandising and display, and the preparation of a marketing plan.

## Baking and Pastry

| | |
|---|---|
| **Baking and Pastry (Level 1)**<br>**572300CD** | **Grade level: 10, 11, 12**<br>**Credit: 2 units** |

Baking and Pastry for secondary students is a course that provides students an opportunity to develop foundational skills needed for a seamless transition to a postsecondary program, workforce, or military. Students will develop advanced skills in safety and sanitation in addition to management and professionalism. Specialized content includes units on formulas and techniques, basic baking principles, specialized dietary baking, breads, desserts and pastries, and advanced techniques for specialty cakes, confections, piping, plate presentation, and flavor pairing. Students are required to pass the ServSafe Food Handler assessment at the beginning of the semester prior to working in the lab (kitchen).

**The below listed course is for 2 credits and is all morning: (SECOND SEMESTER ONLY)**

| | |
|---|---|
| **Advanced Baking and Pastry (Level 2)**<br>**572400CD** | **Grade level: 10, 11, 12**<br>**Credit: 2 units** |
| **Prerequisite: Baking and Pastry; Chef's recommendation required** | |

A continuation of the study began in course 1. Students will receive ServSafe Manager certification during this course. This course is ideal for students who have a passion for baking and pastry arts and wish to pursue careers in culinary arts, pastry arts, hospitality, or related fields. By the end of the course, students will have gained the knowledge, skills, and confidence to create complex and elegant baked goods and pastries, preparing them for further study or entry into the industry.

## Foundations of Animation/Digital Multimedia/Advanced Animations

| | |
|---|---|
| **Foundations of Animation**<br>**5350000CW** | **Grade level: 10, 11, 12**<br>**Credit: 1 unit** |

This course focuses on developing the fundamental knowledge and technical skills required to create a 2D animation. Students will learn how to navigate an industry standard animation software and how to use digital drawing tools. They will develop animation techniques and learn creative processes utilized to produce realistic and believable movement and to animate objects and scenes. Students will be introduced to the 2D animation workflow that is used to plan, prepare and create animations. They will learn the basics of the animation processes within each stage of the workflow: pre-production, production and post-production.

| | |
|---|---|
| **Advanced Foundations of Animation**<br>**5351000CW** | **Grade level: 10, 11, 12**<br>**Credit: 1 unit** |
| **Prerequisites: Foundations of Animation** | |

This course builds on the Foundations of Animation course with a focus on establishing a working knowledge of animation tools and techniques. It provides students the opportunity to develop more advanced animation skills and to work towards creating a short animation project. Emphasis will be placed on asset & environment creation, character development, the processes within the 2D animation workflow such as scripting, storyboarding, compositing, key framing, visual effects, sound design, etc.

| | |
|---|---|
| **Digital Multimedia**<br>**5030000CW** | **Grade level: 10, 11, 12**<br>**Credit: 1 unit** |

This course focuses on developing skills and knowledge in various aspects of multimedia design and production. Students will use digital technology, software and tools. They will apply multimedia concepts and learn how to create, combine, manipulate, and present different forms of media such as text, graphics, animation, audio, and video. Through the practice of good design students will develop and produce compelling audio/beats & visual multimedia projects culminating with a portfolio.

# Mechanical Design 1&2/Architectural Design 1&2

| | |
|---|---|
| **Mechanical Design 1**<br>**3D Printing and 3D Design w/CATIA (V.5) I**<br>**617200CW** | **Grade level: 10, 11, 12**<br>**Credit: 1 unit** |

The 3D Printing and Design I course will educate students on the use and application of CATIA V.5: a multi-platform computer-aided design (CAD)/computer-aided manufacturing (CAM)/computer-aided engineering (CAE) software suite. Students will design parts and assemblies according to the specifications of each assignment and manufacture these parts using 3D-Printing/Additive Manufacturing. Students will prepare for professional certification in CATIA V5 in Mechanical Design 2 and receive more information on the pursuit of careers in this industry.

| | |
|---|---|
| **DE Print Reading & Sketching**<br>**Code: EGT 106**<br>**(Midlands Tech Dual Enrollment class - Mechanical Design 1)** | **Grade level: 10, 11, 12**<br>**Dual Credit: 1 unit** |

This course covers the interpretation of basic engineering drawings and sketching techniques for making multiview pictorial representations. This course also includes an introduction to engineering technology, and an introduction to Computer Aided Design (CAD).

| | |
|---|---|
| **Mechanical Design 2**<br>**617300CW or 617300HW**<br>**(College Prep or Honors)**<br>**3D Printing and 3D Design w/CATIA (v.5) II** | **Grade level: 10, 11, 12**<br>**Credit: 1 unit** |
| **Prerequisite: Mechanical Design 1** | |

The 3D Printing and Design 2 course at the Student Innovation Center will advance student competency in the use and application of CATIA: a multi-platform computer-aided design (CAD)/computer-aided manufacturing (CAM)/computer-aided engineering (CAE) software suite. Students will expand on level 1 competencies with advanced topics including Kinematics, Parametric modeling, and Additive Manufacturing Certification. Students will test for professional certification in CATIA and be introduced to the professional careers within these industries. Additional coursework will be required of honors students.

| | |
|---|---|
| **Intermediate CAD Applications**<br>**Code: EGT 156**<br>**(Midlands Tech Dual Enrollment Class - Mechanical Design 2)**<br>**3D Printing and 3D Design w/CATIA (v.5) II** | **Grade level: 10, 11, 12**<br>**Dual credit: 1 unit** |
| **Prerequisite: Print Reading and Sketching** | |

This course builds on the fundamentals of computer-aided drafting and includes such concepts as 3D modeling and user interface customization. This course also provides the foundation for advanced computer-aided drafting concepts and applications.

| | |
|---|---|
| **Architecture Design 1**<br>**617000CW**<br>**Architecture with 3D Printed Modeling 1** | **Grade level: 10, 11, 12**<br>**Dual credit: 1 unit** |
| **Prerequisite: Mechanical Design 2** | |

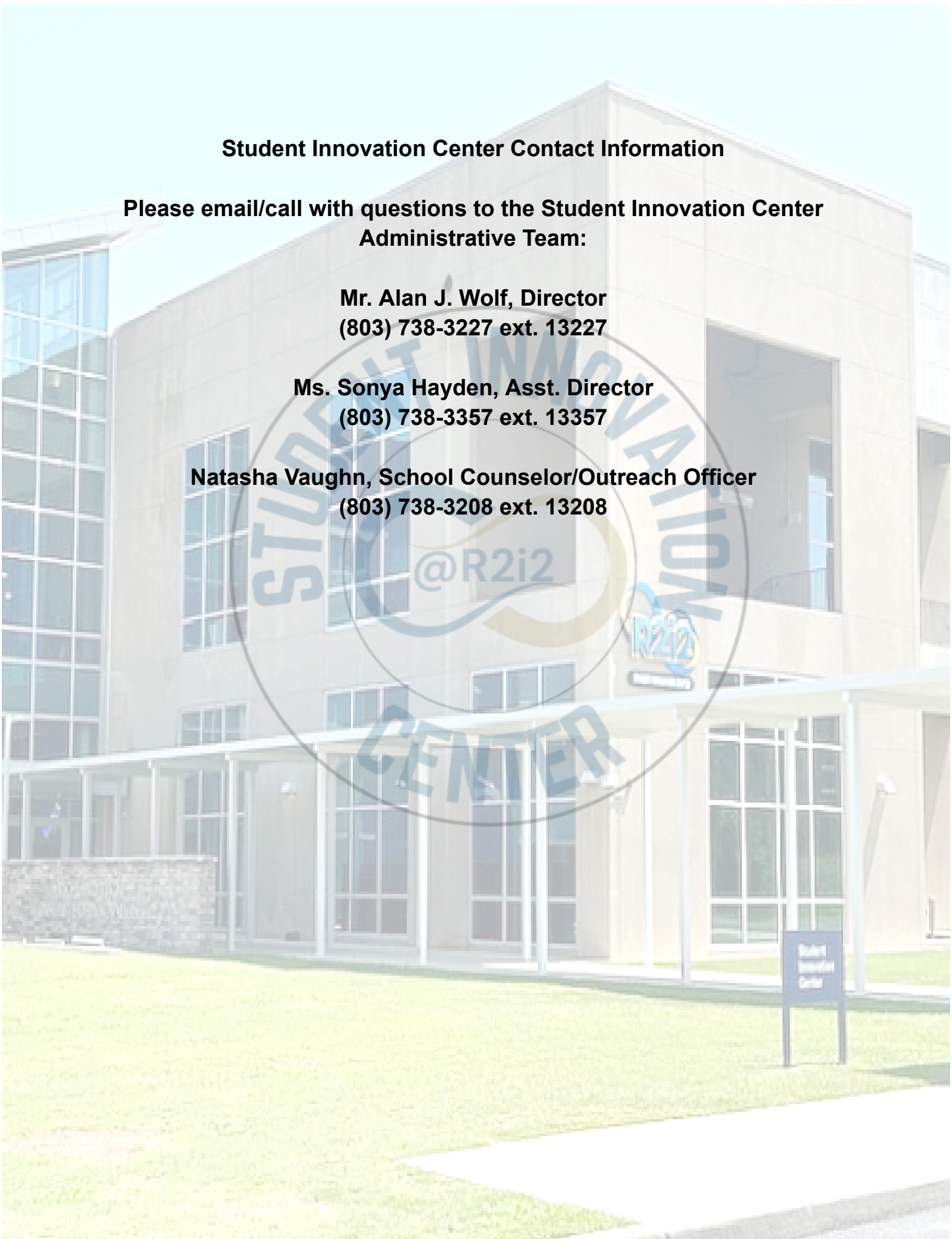
The Architectural Engineering program prepares students interested in architectural and engineering design professions through design technology and techniques. Using computer-aided software, students create working drawings that meet industry standards and codes. Upon successful completion of the Architectural Engineering program, students will be prepared for postsecondary education and entry level architectural and engineering-related careers.

| | |
|---|---|
| **Architectural Design 2**<br>**6171000CW** | **Grade level: 11, 12**<br>**Credit: 1 unit** |
| **Prerequisite: Architectural Design 1** | |

The Architectural Engineering program prepares students interested in architectural and engineering design professions through design technology and techniques. Using computer-aided software, students create working drawings that meet industry standards and codes. Upon successful completion of the Architectural Engineering program, students will be prepared for postsecondary education and entry level architectural and engineering-related careers.

| | |
|---|---|
| **Introduction to Artificial Intelligence**<br>**57M0** | **Grade Level: 10,11, 12**<br>**Credit: 1 Credit** |
| **Prerequisite: Basic computer science course, Algebra 1** | |

Artificial Intelligence involves simulating intelligent behavior in computers, encompassing programming, data science, mathematical reasoning, creative problem solving, ethics, and practical experiences. With the increasing demand for AI skills, traditional careers like Data Analyst or Software Developer are evolving to incorporate AI solutions. The Foundations of Artificial Intelligence course introduces students to essential AI concepts, preparing them to comprehend common applications, tackle real-world challenges, and develop solutions using advanced technologies.



**Student Innovation Center Contact Information**

**Please email/call with questions to the Student Innovation Center Administrative Team:**


**Mr. Alan J. Wolf, Director**
**(803) 738-3227 ext. 13227**

**Ms. Sonya Hayden, Asst. Director**
**(803) 738-3357 ext. 13357**

**Natasha Vaughn, School Counselor/Outreach Officer**
**(803) 738-3208 ext. 13208**

# Semester 1

| Teacher | Block 1 (Period 1-2) | Block 2 (Period 3-4) | Lunch | Block 3 (Period 5-6) | Block 4 (Period 7-8) |
|---|---|---|---|---|---|
| **K. Bullington** | Clean Energy Systems<br>Clean Energy Systems 1<br>Clean Energy Applications 2 | Clean Energy Systems<br>Clean Energy Systems 1<br>Clean Energy Applications 2 | | Clean Energy Systems<br>Clean Energy Systems 1<br>Clean Energy Applications 2 | EV Fundamentals |
| **N. Jones** | Mechanical Design 1-2<br>Architectural Design 1-2 | Mechanical Design 1-2<br>Architectural Design 1-2 | | Mechanical Design 1-2<br>Architectural Design 1-2 | Mechanical Design 1-2<br>Architectural Design 1-2 |
| **R. Jones** | Game Design and Development | Computer Programming 1/Python<br>Computer Programming 2/Python | | Game Design and Development | Computer Programming 1/Python<br>Computer Programming 2/Python |
| **K. Rembert** | Fashion Marketing | Merchandising | | Merchandising | Fashion Marketing |
| **M. Ross** | Baking and Pastry | Baking and Pastry | | Baking and Pastry | Baking and Pastry |
| **D. Vaughan** | Digital Multimedia | Foundation of Animation<br>Advanced Animation | | Digital Multimedia | Foundations of Animation<br>Advanced Animations |
| **Mon, Tues,Thurs, Fri** | **9:30-10:40** | **10:43-11:53** | | **1:00-2:10** | **2:13-3:23** |
| **Wed** | **10:30-11:10** | **11:12-11:52** | | **2:00-2:40** | **2:42-3:22** |

# Semester 2

| Block 1 (Period 1-2) | Block 2 (Period 3-4) | Lunch | Block 3 (Period 5-6) | Block 4 (Period 7-8) |
|---|---|---|---|---|
| EV(Electric Vehicles) Fundamentals | Clean Energy Systems<br>Clean Energy Systems 1<br>Clean Energy Applications 2 | | Clean Energy Systems<br>Clean Energy Systems 1<br>Clean Energy Applications 2 | Inventing Smart Energy Solutions (Capstone course, AAPET sequence, pending approval) |
| Mechanical Design 1-2<br>Architectural Design 1-2 | Mechanical Design 1-2<br>Architectural Design 1-2 | | Mechanical Design 1-2<br>Architectural Design 1-2 | Mechanical Design 1-2<br>Architectural Design 1-2 |
| Computer Programming 1/Python<br>Computer Programming 2/Python | Intro to Artificial Intelligence | | Intro to Artificial Intelligence | Computer Programming 1/Python<br>Computer Programming 2/Python |
| Fashion Marketing | Merchandising | | Merchandising | Fashion Marketing |
| Advanced Baking and Pastry | Advanced Baking and Pastry | | Baking and Pastry | Baking and Pastry |
| Foundation of Animation<br>Advance Animation | Digital Multimedia | | Digital Multimedia | Foundations of Animation<br>Advanced Animation |
| **9:30-10:40** | **10:43-11:53** | | **1:00-2:10** | **2:13-3:23** |
| **10:30-11:10** | **11:12-11:52** | | **2:00-2:40** | **2:42-3:22** |