Course of Study
Academy of Advanced Manufacturing and Applied Science

Freshman

Introduction to Advanced Manufacturing	15 credits
CP or Honors English I	5 credits
CP or Honors US History I	5 credits
CP or Honors Level Mathematics	5 credits
CP or Honors Lab Biology	5 credits
CP or Honors Spanish I or Italian I	5 credits
Fitness for Life I	5 credits

Sophomore

Introduction to Mechatronic and Digital Manufacturing Systems	15 credits
CP or Honors English II	5 credits
CP or Honors US History II	5 credits
CP or Honors Level Mathematics	5 credits
CP or Honors Lab Chemistry	5 credits
CP or Honors Spanish II or Italian II	5 credits
Fitness for Life II	5 credits

Junior

Advanced Materials, Designs, IIoT, Data Analytics and Networking	15 credits
CP or Honors English III	5 credits
CP, Honors or College Level World History	5 credits
CP or Honors Level Mathematics	5 credits
CP or Honors or Lab Science	5 credits
Fitness for Life III or Fitness for Life III – Indep/Sports	5 credits
Performing Arts or World Language III	5 credits

Senior

College Level Phys Fitness/Contemporary Health at RCSJ, Fitness for Life IV or Fitness for Life IV-Indep/Sports	5 credits
CP, Honors or College Level English Composition 101 at RCSJ	5 credits
Financial Literacy or Performing Arts or World Language IV or Electives	5-30 credits

Attention: Understand that registering for a college-level course, means college level credit will be awarded. Regardless of the final grade, this information will be posted to the student's PERMANENT academic transcript at Rowan College of South Jersey. Be aware that unsuccessful completion of these courses may negatively affect a students' eligibility for financial aid in the future.

Academy of Advanced Manufacturing and Applied Science – Freshman

Introduction to Advanced Manufacturing **15 credits**

In this course, students are introduced to the basic concepts of Advanced Manufacturing and the many modern technologies used to automate processes. The courses use highly engaging interactive multimedia computer course materials with simulations of the various technologies. The interactive multimedia simulations are combined with hands-on work using real automation equipment to provide an immersive experience. Technologies include: Machine automation, measurement, AC/DC electricity, electrical relay control, fluid power, robotics programming, computer aided design/additive manufacturing, print reading, and CNC programming. Topics include 3D Computer Aided Design (CAD), Robotics programming, CNC programming, electrical control systems, electronic sensors, pneumatics, basic measurement, safety, and materials and processes. Safety and workplace skills are incorporated throughout the curriculum.

Academy of Advanced Manufacturing and Applied Science – Sophomore

Introduction to Mechatronic and Digital Manufacturing Systems **15 credits**

Students will explore projects in Digital Enterprise Systems combining PLCs, robotics, and cloud technologies. This course also introduces networking, CAM, cloud-based data collections, and Lean Manufacturing.

Academy of Advanced Manufacturing and Applied Science – Junior

Advanced Materials, Designs, IIoT, Data Analytics, and Networking **15 credits**

This capstone course deepens the technical skills in Advanced Manufacturing processes, materials, and design while completing an advanced team project. This course features topics like CAD/CAM, CNC, welding, plastics, and materials engineering. This course enriches technical skills in Industry 4.0 systems and the Industrial Internet of Things using managed networks, data analytics software, cybersecurity, variable frequency drives, RFID barcode, and smart sensors. Students will utilize a combination of virtual interactive training, hands-on labs, and formative and summative assessments. A focus on certification and workplace readiness will be integrated throughout the course.

Academy of Advanced Manufacturing and Applied Science – Seniors

Advanced Manufacturing and Applied Science students may choose the following senior options:

1. Take HSOP courses on RCSJ's campus for a discounted fee.
2. Take College English Composition 101 and College Physical Fitness/Contemporary Health on RCSJ's campus and return to GCIT for elective courses that can be found under the "Elective" title in this course guide.
3. Take Honors level English and Fitness for Life and additional electives on GCIT or RCSJ's campus.