

Peach State Pathways: Program of Study



Engineering & Technology

Learner Name _____

Date _____

Learner Signature _____

Advisor/Counselor Signature _____

Parent/Guardian Signature _____

This plan of study should serve as a guide, along with other career planning materials, as you continue your education. Courses listed within this plan are only recommended coursework and should be individualized to meet each learner's educational and career goals.

All plans will meet minimum high school graduation requirements as well as minimum college entrance requirements.

Applicants to Board of Regents institutions should be advised that meeting minimum requirements will not guarantee admission at any institution. Institutions may set additional and/or higher requirements.

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|--|---|--|--|---|---|---|
| High School Education and Career Plan Graduation Rules for 9 th grade enrolling 2008-2009 | I. English Language Arts (4 units) | II. Mathematics (4 units) | III. Science (4 units) | IV. Social Studies (3 units) | V. Required Electives (3 units) and Other Electives (4 units) CTAE and/or Modern Language/Latin and/or Fine Arts | VI. Health & Physical Edu (1 unit) |
| | English 9 English 10 English 11 English 12 AP Lit and Comp AP Lang and Comp IB English SL (Am Lit) IB English HL (World Lit) | Math 1 Math 2 Math 3 Math 4 OR Accelerated Math 1 Accelerated Math 2 Accelerated Math 3 | Biology Physical Science OR Physics Chemistry OR Environmental Science OR Earth Systems OR an AP/IB course | Am Gov/Civics (1/2 unit) World History US History Economics (1/2 unit) | Engineering Graphics & Design Career Pathway Sequence of Courses: 48.54100 Introduction to Engineering Drawing & Design 48.54200 Survey of Engineering Graphics 48.54300 Solid Modeling & Design CAREER PATHWAY RELATED COURSES: 21.42500 Foundations of Engineering & Technology 48.54500 Architectural Drawing & Design I | Health & Personal Fitness |
| | Sample Additional English Courses: Literary Types/Composition Oral/Written Communication | Sample Additional Math Courses: TBA | Sample Additional Science Courses: Microbiology Environmental Science AP Environmental Sci Aviation Meteorology Astrophysics | Sample Additional Social Studies Courses: Current Issues The Humanities Technology and Society Psychology Sociology | Modern Language/Latin 2 units required for admission to Georgia University System Colleges/Universities For a listing of Modern Language/Latin courses offered at your high school, please check with your advisor, counselor, or curriculum handbook. | Sample Additional Health & PE courses: Team Sports Rec Games Aerobics |
| Career-Related Education Activities | Postsecondary Options: | | Possible postsecondary credit opportunities may include: | | | |
| <input type="checkbox"/> Career Awareness <input type="checkbox"/> Career Exploration <input type="checkbox"/> Instructional Related <input type="checkbox"/> Connecting <input type="checkbox"/> Work-Based Learning <ul style="list-style-type: none"> • Employability Skill Dev. • Cooperative Education • Internship • Youth Apprenticeship • Clinicals | <ul style="list-style-type: none"> • 4-Year Universities/Colleges • 2-Year Colleges • Technical Colleges • State Registered Apprenticeships • Special Purpose Schools • On-the-Job Training • Military | | <ul style="list-style-type: none"> • *Advanced Placement • *Articulated Credit (Technical Colleges) • *Dual Enrollment/ACCEL (Degree Programs) • *Dual Enrollment/HOPE (Certificate and Diplomas) • Joint Enrollment (postsecondary credit only) <p><small>*Postsecondary credit opportunities allow high school students to earn both college and high school credit simultaneously while in high school. Check with your counselor/advisor and Education and Career Partnership program manager for more information regarding these opportunities and others, such as Early College which serves both middle and high school students.</small></p> | | | |

Go to GACollege411 at www.GACollege411.org for more information about your education and career planning, including valuable financial information (grants and scholarships including HOPE Program, loans, FAFSA and CSS forms).

| Current GEORGIA Graduation Rule for student entering the 9 th grade in fall of 2008-2009 Areas of Study: | Credits | Postsecondary Programs of Study Technical College | Postsecondary Programs of Study University of Georgia System |
|---|-----------|---|--|
| I. English/Language Arts | 4 | Select the following link for a list of Technical College System of Georgia (TCSG) institutions offering programs in Engineering Graphic Design . Each technical college varies in the specific degrees (AAS), diplomas, and certificates offered. https://kms.dtae.org/portal/tcsg/TCSGProgramOfferings.aspx Step 1: Use the drop-down box to select the term you plan to enter a TCSG institution; Step 2: From the Specific Program drop-down box select <u>Drafting Technology, Drafting and Design, Drafting and Design Technology, CAD Drafting, or Computer Aided Drafting.</u> You can then view a list of TCSG institutions that offer this program as well as the specific campus and awards (degree, diploma, or certificate) offered. | The following link will list Board of Regents institutions offering degrees in Engineering . In the first box titled "Major," type "Engineering." Then click the button at the bottom "View Matching Campuses" for a list. It will not be necessary to fill in all the other boxes. Further <u>research</u> will be required for specific programs of study that align with the pathway. http://www.gacollege411.org/Select/MatchAsst/default.asp |
| II. Math | 4 | | |
| III. *Science | 4 | | |
| IV. Social Studies | 3 | | |
| V. **Career, Technical and Agricultural Education (CTAE), and/or Modern Language/Latin, and/or Fine Arts | 3 | | |
| VI. Health & Physical Education | 1 | | |
| VII. Electives (4 units) | 4 | | |
| TOTAL UNITS | 23 | | |
| * 4 th Science may be used to meet both the required science and required elective in CTAE sequence of courses (V) **Student <u>must</u> complete 3 units in a pathway to complete CTAE pathway and take end of pathway assessment. Student <u>must</u> complete 2 years of the same Modern Language/Latin for admission to Georgia Board of Regents colleges/universities. | | | |

The sample ENGINEERING GRAPHIC & DESIGN PATHWAY occupations listed below meet two out of three of GDOE definitions for high-demand, high-wage and high-skilled. www.occsupplydemand.org

| Occupation Specialties | Level of Education Needed | Average Salary | Annual Average Openings in Georgia |
|-------------------------------------|-----------------------------------|----------------|------------------------------------|
| Graphic Designer | Bachelor | \$44,034 | 160 |
| Architectural and Civil Drafters | Postsecondary vocational training | \$42,078 | 80 |
| Commercial and Industrial Designers | Bachelor | \$52,312 | 30 |
| Industrial Engineer | Bachelor | \$67,600 | 210 |

ENGINEERING GRAPHIC & DESIGN

Engineering Graphics & Design occupations translate ideas from design layouts, specifications, rough sketches, and calculations of engineers & architects into working drawings, maps, plans, and illustrations that are used in making products. They prepare 3D computer models and 2D drawings using Computer Aided Drafting, Design, and 3D modeling systems. They perform design and drafting work in mechanical, electrical/electronic, structural, architectural, civil, piping, and technical illustration fields. They make mathematical calculations related to the above fields using algebra, trigonometry, plane and solid geometry, applied mechanics, strength of materials and basic physics. These occupations usually require working closely with both professional and nonprofessional people. It is essential they be neat in appearance and develops professional work habits. Degrees are not specifically in the Engineering Graphic and Design area. They are in manufacturing, mechanical, industrial, electrical, engineering, engineering technology, or engineering technician programs.

Students who have an interest in this pathway have numerous options and opportunities at the postsecondary level. The journey will depend on the individual's more specific occupational goal.

For more information:

American Design Drafting Association and the American Digital Design Association <http://www.adda.org/>

Drafters in the Occupational Outlook Handbook

<http://www.bls.gov/oco/ocos111.htm>