**Major Selection Summary**

**Saved Majors**

**Careers That Match Mathematics**

<table>
<thead>
<tr>
<th>Saved</th>
<th>Occupation Name</th>
<th>Mean Salary</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Bank and Branch Managers</td>
<td>$113,730.00</td>
</tr>
<tr>
<td></td>
<td>Chief Financial Officer</td>
<td>$113,730.00</td>
</tr>
<tr>
<td></td>
<td>Controller (Finance)</td>
<td>$113,730.00</td>
</tr>
<tr>
<td></td>
<td>Physicist</td>
<td>$111,250.00</td>
</tr>
<tr>
<td></td>
<td>Air Traffic Controller</td>
<td>$106,990.00</td>
</tr>
<tr>
<td></td>
<td>Computer and Information Scientists</td>
<td>$105,370.00</td>
</tr>
<tr>
<td></td>
<td>Astronomer</td>
<td>$102,740.00</td>
</tr>
<tr>
<td></td>
<td>Computer Systems Engineer</td>
<td>$101,410.00</td>
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<tr>
<td></td>
<td>Actuary</td>
<td>$97,450.00</td>
</tr>
<tr>
<td></td>
<td>Purchasing Manager</td>
<td>$96,910.00</td>
</tr>
<tr>
<td></td>
<td>Aeronautical &amp; Aerospace Engineer</td>
<td>$96,270.00</td>
</tr>
<tr>
<td></td>
<td>Compensation Administrator</td>
<td>$95,230.00</td>
</tr>
<tr>
<td></td>
<td>Mathematician</td>
<td>$93,920.00</td>
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<tr>
<td></td>
<td>Brokers Floor Representative</td>
<td>$91,390.00</td>
</tr>
<tr>
<td></td>
<td>Financial Analyst</td>
<td>$85,240.00</td>
</tr>
<tr>
<td></td>
<td>Atmospheric and Space Scientist</td>
<td>$85,160.00</td>
</tr>
<tr>
<td></td>
<td>Meteorologist</td>
<td>$85,160.00</td>
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<tr>
<td></td>
<td>Biopsychologist</td>
<td>$84,220.00</td>
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<tr>
<td></td>
<td>Video Game Designer</td>
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<td></td>
<td>Quality Control Engineer</td>
<td>$77,090.00</td>
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<tr>
<td></td>
<td>Operations Management Analyst</td>
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<tr>
<td></td>
<td>Statistician</td>
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<td></td>
<td>Computer Programmer</td>
<td>$74,690.00</td>
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<td></td>
<td>Database Administrator</td>
<td>$74,290.00</td>
</tr>
<tr>
<td>Occupation</td>
<td>Salary</td>
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</tr>
<tr>
<td>------------------------------------------------</td>
<td>------------</td>
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</tr>
<tr>
<td>Psychometrist</td>
<td>$72,310.00</td>
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<tr>
<td>Math Professor</td>
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<tr>
<td>Logisticians</td>
<td>$70,400.00</td>
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<tr>
<td>Budget Analyst</td>
<td>$69,240.00</td>
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<tr>
<td>Government Budget Analyst</td>
<td>$69,240.00</td>
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<tr>
<td>Credit Analyst</td>
<td>$67,230.00</td>
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<tr>
<td>Technical Publications Writer</td>
<td>$65,610.00</td>
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<tr>
<td>Cost Estimator</td>
<td>$61,190.00</td>
<td></td>
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<tr>
<td>Aerospace Engineering Technician</td>
<td>$59,280.00</td>
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<tr>
<td>Purchasing Agent</td>
<td>$58,550.00</td>
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</tr>
<tr>
<td>Compensation Specialist</td>
<td>$58,520.00</td>
<td></td>
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<tr>
<td>Employee Benefits Analyst</td>
<td>$58,520.00</td>
<td></td>
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<tr>
<td>Buyer</td>
<td>$55,480.00</td>
<td></td>
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<tr>
<td>High School Teacher</td>
<td>$55,150.00</td>
<td></td>
</tr>
<tr>
<td>Middle School Teacher</td>
<td>$53,550.00</td>
<td></td>
</tr>
<tr>
<td>Elementary School Teacher</td>
<td>$53,150.00</td>
<td></td>
</tr>
<tr>
<td>Mathematical Technician</td>
<td>$46,230.00</td>
<td></td>
</tr>
<tr>
<td>Financial Aid Counselor</td>
<td>$40,930.00</td>
<td></td>
</tr>
<tr>
<td>Social Science Research Assistants</td>
<td>$40,340.00</td>
<td></td>
</tr>
</tbody>
</table>
Mathematician

Overview
Mathematicians can work in either theoretical or applied math areas. Theoretical mathematicians develop new computational principles. Applied mathematicians use techniques such as modeling to solve practical problems in business, engineering, government, physical and social sciences.

Education Requirements
A bachelor's degree in mathematics is the minimum requirement for positions in mathematics. A Master's is sufficient for some research positions and teaching jobs in 2-year colleges. A doctorate is needed for most research and development positions and university faculty jobs. Courses in computer science and applied statistics are essential.

People can enter this occupation with more than one type of credentials. The following are the most common:

Bachelor Degree
Masters Degree

Most Common Majors/Areas of Study:
- Algebra and Number Theory
- Applied Mathematics
- Computational and Applied Mathematics
- Computational Mathematics
- Computer Science
- Financial Mathematics
- Geometry/Geometric Analysis
- Mathematics
- Mathematics and Computer Science
- Mathematics and Statistics
- Physics
- Probability and Statistics
- Statistics

Duties
They design math solutions to test hypotheses or ideas in different scientific or business areas. Experiment with the new math solutions with computer models and simulations.
Work with professionals in applied sciences such as engineers, chemists, economists, psychologists, etc. to identify and resolve their mathematical problem solving needs.

They teach math in either an educational or business setting. and develop curriculum based on the learner's training needs.

Advise computer system analysts and programmers about math data processing approaches that should be incorporated into computer programs.

Skills
- Decision Making
  Weighing out the options in a situation or a problem and logically choosing the best course of action.
- Listening
  Paying attention to what other people are saying, and taking time to understand the points being made.
- Mathematics
  Using mathematics and/or statistics to solve problems.
- Problem Solving
  Ability to identify a problem, review related information, develop and evaluate options, and implement a solution.
- Reading Comprehension
The ability to understand complex written paragraphs, instructions, or reports.

**Reasoning**
Using logic to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.

**Science**
Using scientific methods to investigate and conduct experiments.

<table>
<thead>
<tr>
<th>Values</th>
<th>Creativity</th>
<th>Create new ideas, programs, things, or anything else not previously developed by another person.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income</td>
<td></td>
<td>Having a level of income that will afford you with luxuries, and which will allow you to become financially independent.</td>
</tr>
<tr>
<td>Independence</td>
<td></td>
<td>Being able to decide on how to get something done without significant direction from someone else.</td>
</tr>
<tr>
<td>Prestige</td>
<td></td>
<td>Gaining the respect of others by the nature and/or level of responsibility of your work.</td>
</tr>
<tr>
<td>Stability</td>
<td></td>
<td>Having a routine job where the duties are very predictable and not likely to change over a long period of time.</td>
</tr>
</tbody>
</table>

**Outlook**
Employment of mathematicians is expected to grow faster than average through 2018. Opportunities will be more plentiful in computer science and software development, programming, physics, engineering, operations research, financial analysis and life sciences research.

**Earnings**
People established in their career generally earn between $66,870 and $115,670 per year. Exceptional performers can earn in excess of $142,460.

**Interest Scores**
The graph below displays the typical interests for someone who is working in this career. Their profile is displayed in blue. Your interest profile is displayed in yellow. If the pattern is similar, this may be a good match.
The graph below shows the profile of people who are employed in this field. If you take the [Work Interest Assessment](#) the graph will also show your scores.

<table>
<thead>
<tr>
<th>Investigative</th>
<th>Conventional</th>
<th>Artistic</th>
<th>Realistic</th>
<th>Enterprising</th>
<th>Social</th>
</tr>
</thead>
</table>

**INTEREST LEVEL**
Scale:
0=Low 50=Moderate 100=High
**Accuracy**
*Accuracy or Being Exact* in this job is considered to be very important.

**Serious Consequence of Error**
If you made a mistake while working and did not catch it, there may be serious consequences.

**Sitting**
A significant amount of time is spent sitting at a desk.

**Working Inside**
Most of the work day is spent indoors.

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**Contacts**

- American Mathematical Society, P.O. Box 6248, Providence, RI 02940
  Website: [http://www.ams.org/](http://www.ams.org/)

- American Statistical Association, 806 Fifteenth Street, NW, Suite 640, Washington, D.C. 20005
  Website: [http://www.amstat.org/](http://www.amstat.org/)

- Mathematical Association of America, 1529 Eighteenth Street, NW, Washington, D.C. 20036
  Website: [http://www.maa.org/](http://www.maa.org/)
**Video Game Designer**

**Overview**
Design core features of video games. Specify innovative game and role-play mechanics, story lines, and character biographies. Create and maintain design documentation. Guide and collaborate with production staff to produce games as designed.

**Education Requirements**
A bachelor’s or master’s degree in computer science is a must for a video game programmer, along with good analytical and reasoning skills. Many universities and colleges these days offer bachelor’s degrees in computer game development. These degrees are good stepping stones for aspiring game programmers. Active involvement in open source software development projects also help a lot. Video game programmers must have good knowledge of games and must be passionate about playing games as well. Experienced video game programmers may pursue a degree in management disciplines and shift towards managerial positions.

**People can enter this occupation with more than one type of credentials.**
**The following are the most common:**
- Associate or 2 Year Degree
- Bachelor Degree
- Masters Degree

**Most Common Majors/Areas of Study:**
- Animation, Interactive Technology, Video Graphics and Special Effects
- Computer Graphics
- Computer Programming
- Computer Science
- Digital Arts and Media
- Graphic Design
- Mathematics
- Visual Communications and Design

**Duties**
A game designer is responsible for designing the layout and gameplay of a video game, including the characters, plot, different levels, and scoring of the game. Heavy coding and programming skills are often a requirement.

Game designers need artistic abilities for creating graphical and animated components of the games. The ability to work well in a team and time management skills are also necessary if you're serious about gaining game design employment.

**Skills**
- **Computer Programming**
  Writing computer programs to perform specific information handling operations.
- **Decision Making**
  Weighing out the options in a situation or a problem and logically choosing the best course of action.
- **Designing**
  Analyzing requirements for a new product or service and creating a design to satisfy those needs.

**Values**
- **Artistic Creativity**
  Being able to express creative ideas through the arts.
- **Creativity**
  Create new ideas, programs, things, or anything else not previously developed by another person.
- **Independence**
  Being able to decide on how to get something done without significant direction from someone else.
- **Tangible Results**
  Doing something where you can physically see the results of your work.
Outlook

Employment of video game designers is expected to grow much faster than average through 2018 driven by consumer interest in games for handheld devices. New technical developments will also help spur growth.

Earnings

People established in their career generally earn between $58,460 and $96,890 per year. Exceptional performers can earn in excess of $115,050.

Advancement

Advancement in video game programming primarily depends on the programmer’s skills, and how quickly he/she is able to improve upon those. Concepts of game programming are undergoing rapid changes with every passing year, and the faster a video game programmer can adapt to the continuously evolving trends, the better his/her career prospects. Demand for video game programmers has increased to a good extent in the last few years, and is expected to grow even further in the coming decade.

Interest Scores

The graph below displays the typical interests for someone who is working in this career. Their profile is displayed in blue. Your interest profile is displayed in yellow. If the pattern is similar, this may be a good match.

The graph below shows the profile of people who are employed in this field. If you take the Work Interest Assessment, the graph will also show your scores.

Investigative

Realistic

Conventional

Artistic

Enterprising

Social

0 50 100

Video Game Designer

INTEREST LEVEL

Scale:
0=Low  50=Moderate  100=High

Working Conditions

Accuracy

Accuracy or Being Exact in this job is considered to be very important.

Sitting

A significant amount of time is spent sitting at a desk.

Structured

The tasks to be performed by the worker are generally pre-determined. That is, this job is relatively structured.

Teamwork

You will be working with others as part of a team.

Working Inside

Most of the work day is spent indoors.
International Game Developers Association
19 Mantua Rd
Mt. Royal, NJ 08061
Tel: 856-423-2990
Website: http://www.igda.org

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Computer Systems Engineer

Overview
System engineers confer with customers to identify their computer processing needs. They use mathematical models and conduct experiments to make decisions about the design and use of computer software and hardware components. They evaluate the capabilities of new systems.

Education Requirements
Most employers seek applicants who have at least a bachelor's degree in computer science, information systems, or computer information systems with a strong background in mathematics, programming or computer systems engineering. Many employers require a master's degree for research positions.

People that enter this occupation most typically have a:
Bachelor Degree

Most Common Majors/Areas of Study:
- Applied Mathematics
- Computer and Information Science
- Computer Engineering
- Computer Engineering Technology
- Computer Hardware Engineering
- Computer Hardware Technology
- Computer Information Systems (CIS)
- Computer Programming
- Computer Science
- Computer Software Engineering
- Computer Systems Analysis
- Computer Systems Technology
- Engineering
- Mathematics
- Mathematics and Computer Science

Duties
- They study customer's information handling needs in order to identify new uses for computers in a variety of applications such as manufacturing, banking, medicine, air & hotel reservations.
- Provide computer development engineering teams with computer hardware performance requirements for entering data, processing, displaying and transmitting results for new applications.
- Decide what kinds of software are needed for new applications and coordinates the development of new software programs by providing programmers with detailed specifications.
- Conduct experiments to evaluate the performance of new computer systems. They estimate improvements in efficiency and cost savings for customers by means of trial usage of computers.

Skills
- **Computer Programming**
  Writing computer programs to perform specific information handling operations.
- **Decision Making**
  Weighing out the options in a situation or a problem and logically choosing the best course of action.
- **Equipment Selection**
  Identifying the most appropriate equipment and tools needed to get a job done.
- **Listening**
  Paying attention to what other people are saying, and taking time to understand the points being made.
- **Managing Time**
  Allocating and budgeting time for different tasks so that things get done when needed.
Allocating and budgeting your time for different tasks so that things get done when needed.

**Mathematics**
Using mathematics and/or statistics to solve problems.

**Problem Solving**
Ability to identify a problem, review related information, develop and evaluate options, and implement a solution.

**Reading Comprehension**
The ability to understand complex written paragraphs, instructions, or reports.

**Reasoning**
Using logic to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.

**Troubleshooting**
Analyzing the symptoms of a problem and deciding what actions should be taken to resolve the problem.

### Values

**Creativity**
Create new ideas, programs, things, or anything else not previously developed by another person.

**Income**
Having a level of income that will afford you with luxuries, and which will allow you to become financially independent.

**Independence**
Being able to decide on how to get something done without significant direction from someone else.

**Physical Things**
Having the ability to work with equipment or material things.

**Tangible Results**
Doing something where you can physically see the results of your work.

### Outlook

Employment of computer systems engineers is expected to grow much faster than average through 2018. Demand is high for workers who can develop new products for the Internet, intranet, and web applications as well as electronic data processing systems for all organizations. Information security concerns will give rise to new software to protect the cyberspace infrastructure.

### Earnings

People established in their career generally earn between $77,280 and $124,120 per year. Exceptional performers can earn in excess of $148,910.

### Advancement

As is the case with most occupations, advancement opportunities for computer engineers increase with experience. Entry-level computer engineers are likely to test and verify ongoing designs. As they become more experienced, they may become involved in designing and developing. Eventually, they may advance to become a project manager, manager of information systems, or chief information officer. Some computer software engineers with several years of experience or expertise find lucrative opportunities working as systems designers or independent consultants or starting their own computer consulting firms.

#### Interest Scores

The graph below displays the typical interests for someone who is working in this career. Their profile is displayed in blue. Your interest profile is displayed in yellow. If the pattern is similar, this may be a good match. The graph below shows the profile of people who are employed in this field. If you take the [Work Interest Assessment](#) the graph will also show your scores.

- **Investigative**
- **Realistic**
- **Conventional**
### Interests

- **Enterprising**
- **Artistic**
- **Social**

### Interest Level

**Scale:**
- 0=Low
- 50=Moderate
- 100=High

### Working Conditions

- **Accuracy**
  
  Accuracy or Being Exact in this job is considered to be very important.

- **Automation**
  
  Parts of this job are automated by machines.

- **Contact with Public**
  
  Working in this job requires dealing with the public and/or external customers.

- **Manual Dexterity**
  
  The worker will be required to use their hands to operate controls, use tools, or manipulate objects.

- **Serious Consequence of Error**
  
  If you made a mistake while working and did not catch it, there may be serious consequences.

- **Sitting**
  
  A significant amount of time is spent sitting at a desk.

- **Telephone**
  
  A fair amount of time will be spent on the telephone.

- **Working Inside**
  
  Most of the work day is spent indoors.

### Contacts

- **Association for Computing Machinery, Inc.,** 1133 Avenue of Americas, New York, NY 10036
  
  Website: [http://www.acm.org/](http://www.acm.org/)

- **American Society for Information Science and Technology (ASIS&T),** 1320 Fenwick Lane, Suite 510, Silver Spring, MD 20910
  
  Website: [http://www.asis.org/](http://www.asis.org/)

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