SO YOU WANT TO WORK IN

THE MOLD INDUSTRY?

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CAREER:
ADMINISTRATORS

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Far from being dull, a job in administration is important to all companies. Most administrative duties revolve around managing and distributing information within an office. This generally includes answering phones, taking notes and maintaining files.

Administrators are known by lots of different titles like Receptionists, Bookkeepers, Human Resources, just to name a few. Whatever your title, your role will be more or less the same and you'll help manage the more routine administrative tasks within an organization or department.

Examples of Office Administrator responsibilities:

- Greet visitors and direct them to the appropriate offices
- Conduct clerical duties, including filing, answering phone calls, responding to emails and preparing documents
- Coordinate project deliverables
- Perform accounting tasks, including invoicing and budget tracking
- Schedule meetings and travel arrangements for senior members of the company
- Provide administrative support for various departments
- Recruitment and onboarding of new employees

Although there will always be some tasks that you have to complete every day, administration projects will add some interest to your job as each will be quite different.

OK, I'm interested... But is it really the job for me?

Skills you'll need include:

- Computer literacy
- An ability to work to deadlines
- An ability to work fast (without mistakes)
- Good attention to detail

CAREER:

CAM (CAM = Computer Aided Machining)

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A CAM programmer takes a file drawn from the design department, imports it into the software program they use (we use Powermill) and locates it on the virtual machine they have drawn. Once the set up is done, they will use the tools in a virtual tool library and start to make programs to remove the steel from the block, starting with the largest tool and working their way down to a .5mm cutter.

If the job has been previously worked on, they can import a file showing where all the remaining material is, so there is no wasted time and no unexpected collisions. When you see the multi axis machines spinning and twisting, the CAM programmer has verified that all moves are safe and that there will be no problems once it is started.

Pursuing a career as a CAM programmer requires strong essential skills such as math, reading, document use, critical thinking and machining experience.

Skills:

- Having good written and verbal communication skills.
- Dependability (showing up on time)
- Attention to detail
- Being a team player
- Problem solving
- Time management
- Self-control
- Focused
- Computer literate
- Being able to sit for long periods of time.
- Being self-motivated.

EDUCATION:

CAM jobs demand candidates having a High School Diploma or equivalent academic qualification. Students who want to work in this field are encouraged to take courses in blueprint reading, drafting, geometry, trigonometry, and metalworking and should also have basic computer skills. There are apprenticeship and training programs offered by some companies to provide suitable knowledge and skills to applicants. These classes can last up to four years, where trainees work full time under the supervision of experienced professionals.

These courses also include classroom instruction including subjects such as blueprint reading, math, materials science, mechanical drawing, among other topics. Certification requirements are optional in this area.

Apprenticeship to be a Licensed General Machinist (429A).

CAREER:
ESTIMATOR

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The job of estimating is the tip of the sword in a manufacturing environment.

To be successful an estimator must understand part design, tool making and molding! Estimators must be able to manipulate the data in viewing software, cut, measure and recognize potential problems with the customers part design. The best tool an estimator has is their brain! Logic and problem-solving are two key abilities. Good estimators have spent time on the floor and have practical knowledge of tool building. They may have spent time in the design department learning fundamentals of design. Advanced knowledge of spreadsheets and formulas is a definite asset.

Estimators will put together a quotation accounting for:

- Understanding cost and sizing for – steel, brass, aluminum
- Accurately estimate purchased components & services – manifolds, electrical components, cylinders, pins and bushings, heat treating, welding, texturing, etc.
- Labor - they need to understand how much time each department will need to manufacture the many pieces that go into a mold.
- They need to be aware of each customer differing needs and standards and include any cost drivers in the tool estimate.

All that is the easy part! The tough part is understanding and manipulating 3D CAD files sent in for quote. Figuring out the best combination of mechanical, hydraulic and pneumatic actions to make a robust tool cost effectively.

Skills:

- Knowledge of CAD software
- Strong written and oral communication skills
- Customer service oriented
- Strong organization, planning and data management skills
- Advanced ability to identify issues, problems and generate solutions
- Displays attributes of a critical thinker and leverages innovative design skills
- Willingness to develop and advance knowledge as industry and technology changes.
- Computer skills

CAREER: MACHINIST

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A machinist is someone who can take a raw block of steel and using a wide range of machines (like manual milling machines and grinders all the way up to multi axis computer-controlled mills) can turn that block into an intricate part holding accuracies of 1/10th the thickness of a human hair. It may involve machining in 1 axis up to 5 axes. It could be as simple as drilling a hole, up to orchestrating the intricate movement of a swivel trunnion, rotary table, bridge, ram and quill simultaneously. You will learn the science of removing metal efficiently. You will work with various exotic alloys and learn the effects different geometries of cutting tools have on the work piece. You will drive million-dollar machines to the limits to remove metal as quickly and accurately as possible. Running top end machines in our industry is the equivalent of driving a formula one race car and winning… because Cavalier does not lose!

Starting out at the very bottom (yes, I mean sweeping the floor of your local machine shop) is where some of the best machinists alive today started when they were in high school. If you're a good worker and your boss sees that you have some potential, you will get promoted. Trust me. It may take several months, or even a couple years, but eventually you'll work your way to running and setting up machines if you have the desire.

There's one final note which every machinist knows: safety is first. Wear protective safety glasses and always follow safety procedures to prevent injury or harm to yourself or others who work with you.

Pursuing a career as a machinist requires strong essential skills such as math, reading, document use, and critical thinking.

Skills:

- Having good written and verbal communication skills.
- Having manual dexterity.
- Dependability (showing up on time)
- Attention to detail
- Being a team player
- Problem solving
- Time management
- Self-control
- Being physically fit.
- Being able to stand for long periods of time.
- Being self-motivated.

EDUCATION:

Machinist jobs demand candidates having a High School Diploma or equivalent academic qualification. Students who want to work in this field are encouraged to take courses in blueprint reading, drafting, geometry, trigonometry, and metalworking. Candidates should also have basic computer skills. There are apprenticeship and training programs offered by some companies to provide suitable knowledge and skills to applicants. These classes can last up to four years, where trainees work full time under the supervision of experienced professionals. These courses also include classroom instruction including subjects such as blueprint reading, math, materials science, mechanical drawing, among other topics. Certification requirements are optional in this area.

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CAREER:
MOLD DESIGNER:

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WHAT IS A MOLD DESIGNER?

Mold designers use computer-aided design (CAD) software and technologies to create plastic mold designs used in the manufacturing of a variety of everyday items. Like most CAD users, mold designers typically work in an office environment; however, they do take visits to the shop floor and customer settings to see if their mold design is effective. Are you a problem solver? Do you like putting together puzzles or playing videos games? The intricate molds we build require out of the box thinkers that often come from these kinds of inquisitive minds.

It is a person who can take a complex task involving many factors in a raw theoretical state and turn it into solid three-dimensional data. A Mold designer must be able to assess the function the part will play in an overall assembly, how the mating parts will fit and function, what the dimensional tolerances required are and what type of impacts must it withstand.

A plastic injection Mold designer must be able to visualize the final product design at the conception period, he will need to keep in mind how many parts it is to make, where to split the parting line between the core and cavity halves, how the plastic will be injected, how the mold will need to be vented to release the gas, how the mold will be ejected and how it will be cooled, he will also need to keep in mind if the tool is to be textured, determine sink areas, wall thickness and draft angles for release.

What it takes to be a great Mold Designer:

- Have a Positive Attitude
- Show up to work on Time
- Be trainable and open minded
- Be hands on and conceptual
- Ability to listen and learn
- Have above average math skills
- Understanding of Design for Manufacturing and Assembly Principals
- Experience and understanding of mold design software
- Mold Building experience
- Mold Flow, Cool & Warp experience
- Able to work in a fast-paced environment
- Be able to multi-task
- Have above average Computer skills

Mechanical Engineering or CAD/CAM Program grad.

A good mold designer will be able to work independently and without direct supervision and simultaneously be comfortable in a collaborative teamwork setting. He will be good at 'out of the box' thinking and be able to visualize 3D geometries.

CAREER:
MOLD MAKER

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A Mold maker is the key job in manufacturing a plastic injection mold. They are responsible to validate the CAD design, take all components manufactured by machinists, integrate all purchased items and build a fully functional mold as created by the design team. They must fully understand all design concepts, must understand machining practices and limitations and coordinate final assembly, and testing. They oversee coordinating several departments inside the company – fitting, polishing, spotting etc. – and outside the company – welding, texture, various surface treatments. The will insure the various modules – melt delivery, cooling, ejection and core/cavity all work together seamlessly so the mold will be capable of making the final product. They may attend the local testing phase of the mold. They will often travel with the mold to the customers facility to insure smooth start-up during initial production phases and will do any troubleshooting required to insure the mold is fully functional. A top toolmaker will completely understand all subsystems including electrical, hydraulic, pneumatic, fluid dynamics of both plastic flow and water cooling and part demolding sequence.

Learn the trade of injection mold building through a combination of hands on practical training with academic course work during an apprenticeship period.

Why pursue a career in mold making?

Mold building provides opportunities for career growth and advancement in unexpected and exciting ways. When pursuing a career in mold building, you'll have access to:

- Hi-tech, advanced machinery
- A supportive, team-oriented work environment
- Little-to-no college debt
- Opportunities for career growth and competitive pay
- Financial support for continued education and training

What does it take to pursue a career in mold building?

If you have an interest in how things are made, how they work and why they matter, a career as a mold maker could be the perfect fit. A few characteristics share by many mold builders include:

- A desire to work within a team environment
- A tendency to be mechanically included
- A desire to be challenged
- Interest in continuing to build your knowledge and technical expertise

Apprenticeship in to be a Licensed Mold Maker (431A).

CAREER:
PROGRAM MANAGER

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What do they do?
A program manager is the crossroads of information in the day to day business activities of a mold manufacturer. All information pertaining to a project goes through them.

PM's responsibility is to guide the job through the various stages of build from initial design until the tool is running production at the customers' plant. A PM is the direct contact for the customer to give and get information during the build process and are also the resource person to answer questions and advise direction to the Engineering and Manufacturing departments. They monitor milestones of the build process to insure on-time delivery is achieved and usually coordinate sub-contracting services like texture, tryout & mold flow simulations. Attending all tryouts locally and supply start up assistance at customer facilities is a must, often requiring travel to customer facilities in Canada, USA and Mexico to support activities.

All Cavalier PMs came from the shop floor, often starting as apprentices and moving their way up from designing tools to managing them. They are fully conversant in CAD software and understand the anatomy of a tool. If required, they can pitch in and help assemble/disassemble and troubleshoot tools. A significant part of their time is spent in meetings – at work, online or at the customers. They are intelligent and good at solving problems. They must make many decisions each day.

Skills:

- Strong written and oral communication skills
- Strong organization, planning and multi-tasking skills
- Excels at problem solving and logical thinking
- Experience in manufacturing of plastic injection molds
- Experience in design and layout of plastic injection molds and tools; small to medium parts with accurate dimensions or appearance requirements will be preferred
- Experience dealing directly with OEM's and major Tier 1's
- Must be technically skilled in CAD software
- Willingness and ability to travel as needed
- Valid passport
- MS Office proficiency required

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CAREER: PURCHASING

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Purchasing or buyers consider price, quality, availability, reliability, and technical support when choosing suppliers and merchandise. Buyers and purchasing agents buy products and services for organizations to use or resell. They evaluate suppliers, negotiate contracts, and review the quality of products. To maximize profit and stay ahead of the competition, businesses must continually update their processes and operations. To do this, they need professionals who can help them find the best prices for the goods and services they use or resell. If you're interested in business management and want a career as a purchaser or buyer, here's what you need to know.

The buying role differs from industry to industry, but some of the general roles and responsibilities that echo throughout the purchasing profession may include:

- Decision making where new products and services are concerned
- Reviewing current products/services
- Sourcing suppliers
- Supplier negotiations
- Making sure products/services get delivered on time and meet the required standards.
- Monitoring of stock
- Working to a budget
- Quick reaction to market changes
- Supplier relationship management
- Attendance of industry events

Attributes of the ideal candidate for the buying role include:

- Great team worker
- Good organizational skills
- Excellent time management
- Confident communicator
- Works well under pressure
- Excellent people skills

The skills needed will differ depending on the industry, but generally a buyer should have the following skills:

- Strong negotiation skills
- Excellent communication skills
- Relationship building and management skills
- In depth understanding and knowledge of the industry
- Excellent computer skills
- Good in math and English

General Purchasing Program Requirements

Ontario college purchasing programs provide students with the business background and supply chain management and operations skills needed to succeed in this specialized career. Ontario college requires an Ontario Secondary School Diploma (OSSD) or equivalent, including a grade 12 English and grade 11 or 12 math credit.

CAREER:
SALES

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Sales representatives are responsible for soliciting work for the shop.

They will spend most of their time travelling and meeting with existing and potential customers. They must fully understand the abilities of the shop and be able to discuss them intelligently with tool room supervisors to purchasing agents to engineers up to company presidents. Sales will possess a good knowledge of molding processes and tool manufacturing processes and must understand the various markets they work in to realize opportunities and target potential business. They will generate interest over time and get opportunities to quote on work. By understanding the customer needs they will be able to acquire business by guiding Cavalier's efforts to satisfy those needs.

A sales person must be comfortable dealing with various business situations. They will be able to create and give presentations one-on-one or to a large audience. They need to believe in their product and themselves to be successful. Practical experience in molding, part design, tool design and tool manufacture while not a requirement, are all things that will enable credibility and lead to success.

Skills:

- Adequate knowledge of Plastic Injection Mold business
- Ability to Listen - needs to satisfy a client's needs
- Empathy - know how to feel what their customers feel
- Competitiveness
- Networking Ability
- Confidence
- Enthusiasm
- Resiliency
- Connect with potential customers personally – people buy from people they like

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