TABLE OF CONTENTS

• What is CAD?
• Some CAD History
• What Does a CAD Drafter Do?
• CAD Drafter Responsibilities
• CAD Specialties
• A Day in the Life of a CAD Drafter
• Do I Have the Skills to be a CAD Drafter?
• What Training Would I Need?
WHAT IS CAD?

Computer aided design or CAD is the process of using computer software to transform those brilliant ideas and designs from architects and engineers into technical 2D and 3D diagrams. With specialized printers, those results give humans real-life representations of cars, buildings, bridges, roads, medical equipment, and a whole lot more. Just about everything that’s built starts with a plan and a design. And what once took drafters days now only takes a computer aided designer hours.
It’s hard to imagine a world without computers!

It seems like they’ve always been around. They do go back a long way. But those earliest “computers” from the 1800s don’t resemble anything we’d now refer to as actual computers. Then, back in the 1950s and 60s, things started to change. Humans and machine started to merge. In fact, one of CAD’s earliest pioneers called his invention “a man-machine graphical communications system.”

Dr. Patrick Hanratty: The Father of CAD

While working at General Electric in 1957, American computer scientist Patrick J. Hanratty, PhD, developed a Program for Numerical Tooling Operations or PRONTO, that would be the foundation for computer aided design.

When he worked at General Motors, Dr. Hanratty was on the team that developed a computer aided design program for automotive design.

Eventually he formed his own company and built ADAM, his Automated Drafting and Machining program that was an interactive graphics design, drafting, and manufacturing system designed to work with most every computer.

CAD: SOME HISTORY

Ivan Sutherland

As part of his Ph.D. thesis at MIT, Dr. Sutherland invented that “man-machine” that he called “Sketchpad.” It was the first graphical user interface (GUI) and set the stage for radical changes in how just about everything would be built in the future.

Sketchpad allowed users to create precise engineering drawings on a computer display with a “light pen.” With Sketchpad, computer graphics now combined technical and artistic elements. It was used to draw mathematical, mechanical, scientific, and even animated drawings, that could be manipulated, stored, and duplicated.

---

3 https://history-computer.com/ModernComputer/Software/Sketchpad.html
WHAT DOES A CAD DRAFTER DO?

Computer aided designers/drafters create detailed schematics for building and manufacturing. Their technical drawings gather the input of architects, engineers, and surveyors and include information about codes, dimensions, materials, and production methods.⁴

⁴ https://www.techopedia.com/definition/2063/computer-aided-design-cad
CAD DRAFTER RESPONSIBILITIES

Depending on where you work as a CAD drafter, your role and responsibilities will vary, but you might be required to:

- Read and interpret blueprints and designs
- Understand design principles and techniques in the production of technical plans, construction drawings, and 3D models
- Create presentations and visualizations of 3D designs and construction documents.
- Produce detailed CAD drawings from templates, sketches, and digital renderings
- Incorporate feedback and make revisions of 2D/3D model designs
- Run simulations and stress-tests on 3D models
- Keep up to date on all modern advancement in materials and software technologies
- Pursue ongoing education in the field
- Navigate inhouse filing systems

https://www.bls.gov/ooh/architecture-and-engineering/drafters.htm#tab-2
CAD SPECIALTIES

CAD drafters work across industries and take on such roles\(^6\) as:

- Architectural drafter
- Civil drafter
- Electronic drafter
- Mechanical drafter
- Mapping technician
- Commercial and industrial designer

\(^6\)https://www.onetonline.org/link/summary/17-3011.01
WHAT’S A DAY IN THE LIFE OF A CAD DRAFTER REALLY LIKE?

It depends where you work and what industry you serve. Some CAD drafters work for architects. Some work in engineering and mechanical design. But here’s what your day could look like:

7:00: Wake up! Sure, you don’t need to be work until 8:30 or 9:00, but you want to check your RSS feed and LinkedIn groups for CAD news and updates. What’s going on in the world of your career?

8:30: Arrive at work, settle in at your workstation. Plow through your emails and then take a look at today’s to-do list. Prioritize. Get ready for some CAD work.

7 https://gridarchitecture.pnnl.gov/media/methods/Architecture%20Team%20Structure.pdf
WHAT’S A DAY IN THE LIFE OF A CAD DRAFTER\textsuperscript{7} REALLY LIKE?

9:00: Top of your list today is to change the size and placement of windows in an architectural plan. The client wants more light and the project manager sent you an email telling you how the architect changed things up. Working in AutoCad Architect, you make the necessary changes. Then you open up a new file for a brand-new client: Toy Store. You’ve been asked to start with the site map. Using the plot plan, Google Earth, and AutoCad, you set to work.

\textsuperscript{7}https://gridarchitecture.pnnl.gov/media/methods/Architecture\%20Team\%20Structure.pdf
WHAT’S A DAY IN THE LIFE OF A CAD DRAFTER really like?

11:00: Team meeting on the Toy Store project. Everyone—but Toy Store—is in attendance. It includes the project manager, architects, subject matter experts on building codes and local ordinances, the CAD manager, documentation specialist, research assistant, administrative assistant—and YOU!

12:00: You really want to get back to CAD, but your boss wants to take you to lunch and show you the new site in person. Sweet!

1:00: CAD work. You plug in the earbuds and listen to some tunes while you get down to business.

WHAT’S A DAY IN THE LIFE OF A CAD DRAFTER REALLY LIKE?

3:00: CAD training. There’s always more to learn. Your company has weekly meetings to make sure everyone knows the latest about all the software it uses. This is a time to ask questions and try out new approaches so you can be the most efficient CAD drafter there is.

4:00: CAD work. Back to the computer work you love, until it’s quitting time. But you can’t help yourself. Sometimes you work on plans at home. After all this is what you love to do!

7 https://gridarchitecture.pnnl.gov/media/methods/Architecture%20Team%20Structure.pdf
DO I HAVE THE SKILLS TO BE A CAD DRAFTER?

Not yet!

But before you acquire them, you’ll need to decide whether this could be the right career path for you. Do you already possess these skills?

- Visual
- Mathematical
- Mechanical
- Technical
- Creative
- Problem solver
- Detail-oriented
- Self-directed
- Adaptable
- Communicative
- Collaborative
- Feedback receptive
WHAT TRAINING WOULD I NEED?

You’ll need to learn all about architectural drawing, AutoCAD, and 3D modeling. You’ll need to understand CAD inside and out and all its applications. And have a real-world understanding of things like building codes and materials strength. You’ll also need to know how work collaboratively with a team. Wow! Sounds like a lot.

Don’t worry! Charter College has an online Certificate in CAD program that will provide you with the training you need. And you can complete it in as little as 10 months.
CHARTER COLLEGE CERTIFICATE IN COMPUTER AIDED DESIGN

What will be covered in your CAD program? Here’s some of what our field-expert instructors will teach you:

• Introductory through advanced CAD techniques and processes
• Freehand drawing and its application to technical sketching and design visualization
• Theory and practice of architectural drawing, planning, and design
• Modeling, rendering, and animation for presentations
• 3D Modeling for CAD
• Building codes in residential and commercial design
• Prep for the Autodesk certification exam
GET STARTED NOW

If you’d like a career in Computer Aided Design, we can help you get started. Contact Charter College today.

www.chartercollege.edu
(888) 200-9942

GET STARTED ON THE PATH TO THIS REWARDING CAREER. CONTACT CHARTER COLLEGE TODAY