

**Upwork Customer:**  
Engineer Essentials

**Completed:**  
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**Website:**  
[www.gdandtbasics.com](http://www.gdandtbasics.com)

**Goals:**

1. Write a 1,000-- 1,500-word B2B article directed toward employed engineers, drafters, tool & die makers, machinists, and quality inspectors.
2. Compare GD&T training between private companies and community colleges.
3. Make the case for selecting a private company.

Article will be posted at [www.gdandtbasics.com](http://www.gdandtbasics.com).

**Testimonial:**

*"Debby did a great job communicating a difficult technical topic. Very good communicator and quickly provided work. Would highly recommend!"* Thomas Geiss, GD&T Basics



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## Are you searching for GD&T training?

### 4 Important considerations

By Debby Wadsworth, Freelance Writer, [DW-writer.com](http://DW-writer.com)

Manufacturers are under even higher pressure these days to design, develop, produce, and deliver products. Customer expectations keep rising for products and the companies that make them. Trade wars, volatile markets, and Covid-19 are also contributors.

Getting manufacturing right the first time, and every time has a whole new meaning in today's competitive marketplace. It's about finding ways to optimize a process to save time and money and is imperative for improving return-on-investment (ROI).

The mounting pressure drives professionals in engineering, machining, and inspection to complete Geometric Dimensioning and Tolerancing (GD&T) training. GD&T is a system with standards that uses a powerful language on engineering drawings. It ensures clarity and consistency when indicating specifications. If applied correctly, companies can experience higher quality and yield, lower costs, less waste, and faster delivery times. But GD&T is not new to manufacturing. It has been used for decades by companies like John Deere, Honeywell, Toyota, Uber, U-Haul, NASA, Siemens, and many more.

### **Lack of knowledge = more mistakes, higher costs**

It's not just the Fortune 500 using GD&T. Companies of all sizes use it to reduce production and maintenance costs. To what extent depends upon how well employees effectively implement the standards and use the language. It is not just engineers who need to learn GD&T. But also, drafters, tool & die makers, machinists, and quality inspectors. Anyone who works with engineering drawings must understand GD&T. All should be able to pick up a blueprint and know what to do with it.

GD&T is not something learned in college. "Today's engineering schools are not preparing graduates as well as they might for useful practice in the 21st century," according to William A. Wulf, former president, National Academy of Engineering. School curriculums fail to teach engineering students basic skills like reading blueprints.

### **Software is not an alternative**

For those with a lack of knowledge, it is a misconception that software can correct the problem. 3D CAD packages like Solidworks are not designed to catch any mistakes made by designers on drawings. Therefore, companies using or wanting to use GD&T must look to hiring a provider. The two that receive the most consideration are professional training companies and community colleges. If you type GD&T training into Google, there is a dizzying amount of options and information worldwide. You can spend hours trying to decipher it all to gain an apples-to-apples comparison.

### **Take a closer look before you decide**

Professional training companies take an actual experience-based approach, while community colleges focus more on theory at the 30,000 feet level. To understand this further, let's look at an account from Brandon John, a GD&T certified instructor. John spent 25 years as a journeyman machinist in design, machining, CNC programming, and manufacturing.

The account comes from John's first experience with GD&T training earlier in his career. He was working for a company that did production, fabrication, assembly, etc. "We were making drawing for our company that were used by the end customer," according to John. But things changed when a customer found errors and reported them. "A customer who had audited us was insinuating that we needed to be using GD&T on our prints," John said.

In response, the company decided to bring in an outside trainer that would teach employees GD&T. They spent just shy of \$40,000 for a community college to provide 8 hours of on-site training. The employees were broken into groups, with John assigned to the engineering group. The community college sent “an instructor or professor, who I believe taught machining,” according to John.

John spent eight hours in training he described as “quick and vague.” Furthermore, the instructor based his instruction upon an assumption that everyone attending knew how to read a blueprint. However, nearly all employees who attended, including John, did not know how to read drawings. The confusion led to attendees asked a lot of questions trying to understand and clarify the information that had been presented. However, “The instructor couldn’t answer all the questions, at least 50%,” John said.

The examples used by the instructor were from Alex Krulikowski, a self-described GD&T author, teacher, instructional designer, which added to the confusion. Nothing came from real-world experience or examples. In the end, “Nothing was learned. The training ended up being a total wash,” John said. “We had to turn around and send everyone to the GD&T Basics course at Engineering Essentials, a professional training company, which was one-tenth of the cost.” This time instructors used actual examples from John’s company and the training was successful.

### **Know what’s important**

John’s experience raises several red flags on what is important when considering a GD&T training provider. Clearly, not all training providers are equal. John shared that success comes from selecting a goal-based provider dedicated to ensuring training attendees learn, not just memorized, GD&T, and can apply it correctly in their job. Failure comes from hiring a provider who focuses mostly on providing a 30,000 feet overview leaving a disconnect between theory and actual application.

But how do you find the right training provider? A list of four key questions to ask is below to help you sort through the endless amounts of information. The questions and chart were created working with GD&T certified experts, including John, who want to help people make an informed decision and gain a successful outcome.

### **4 Key Questions to Ask**

**1. Does the potential provider specialize in training for GD&T / Engineering Drawing, and are the instructors certified?**

**Why are these important?**

The more knowledgeable the training provider is from first-hand real-world experience, the better your chances of learning what is pertinent to your job and how to apply it. Would you go to a Cardiologist for a toothache? Yes, the doctor knows anatomy, but not how to fix the problem.

Professional training companies who specialize in GD&T / Engineering Drawing instruction only do one thing and focus on doing it well. They are passionate about it, knowledgeable, and committed to helping people learn and effectively use GD&T. In comparison, community colleges lack focus and specific expertise. They concentrate on offering a much broader range of courses for many different fields. The lectures are more general, presenting theories at the 30,000 feet level.

Plus, learning from instructors who are ASME certified is important too. It shows the instructor is knowledgeable in GD&T and has first-hand experience in what they are teaching. To gain certification, a professional must have done GD&T successfully for a company at least five years. On the other hand, community colleges tend to send instructors or lecturers that teach multiple subjects at a high level.

**2. Does the potential provider have proprietary training and a high success rate??**

**Why are these important?**

Success is all about being able to select the parts of GD&T that are applicable and effectively applying them in day to day work. Proprietary training delivers tailored real-world lessons and materials.

Professional training companies spend years developing proprietary training. Over time the information presented is refined using the results of real-world testing with major clients. Such a commitment shows dedication to ensuring success for all who attend training. It has also led to higher success rates.

In comparison, community colleges base their training on theory from textbooks. The approach leaves training participants with the challenge of matching up general

information with day-to-day problems. Success rates would logically be lower but are unknown since they are not reported.

### **3. Has the instructor applied GD&T successfully at a company?**

#### **Why is this important?**

If the instructor has not applied GD&T successfully for a company, how can he/she effectively teach someone else? Therefore, it is incredibly important the instructor has experience in using GD&T successfully at a company.

Professional services companies nearly always have ASME certified instructors, so you know they have spent at least five years successfully using GD&T. That means their instructors have been there when machine breakdown, an inspection going wrong, or tolerances become too tight or loose. The alternative is relying upon learning the information from community college instructors delivering textbook-based teaching.

### **4. On what are the instruction and examples based?**

#### **Why is this important?**

Instruction and examples covering real problems from actual companies make the training easier to apply in day to day problem-solving. Plus, it's easier to compare apples to apples when selecting what parts of GD&T are best for each situation.

Many professional training companies make it standard procedure to use actual examples from the companies where attendees work. You can't get more real-world than that or make it much easier to apply what has been learned. In contrast, community colleges rely on examples gained from various outside sources.

## **Professional Training Company vs. Community College Comparison Chart**

<b>Area of Importance</b>	<b>Professional GD&amp;T Training Company</b>	<b>Community College</b>
<b>Specialization &amp; Certification</b>	GD&T and Engineering Drawings Training ----- GDTP instructors ASME certified	No specialization Multi-subject focus ----- Faculty & instructors Not ASME certified
<b>Type of Training &amp; Success Rate</b>	Proprietary ----- Success rate 100%	General courses ----- Success rate unknown
<b>Instructor Experience</b>	Minimum of five years applying GD&T in a company	Only taught GD&T for community college
<b>Base of Instruction &amp; Examples</b>	Real-word projects  Examples from companies of training participants	Textbooks  Examples from various sources