

Opening

Profile shot of a college student at his desk with the computer. He/she is looking at various company websites, shopping around for information about various potential employers. He/she also has a small pile of annual reports or other company information on the desk. Cut between O/S shots of student looking at literature or monitor and reaction shots.

VO Narrator:

“You’ve got your engineering degree pretty well wrapped up. Time to start figuring out how you’re going to put that degree to work.

So, what is it you’re looking for in a job? Specializing in one field or working in a variety of disciplines? Ready to dig in and start working on some real life problems, or do you need to build your skills first?

There’s a company that offers the opportunity to do all those things as you work on a highly engineered consumer product. It’s the Hoover Company.

That’s right, the company that makes the sweepers. But you’d be surprised at the level of engineering talent it takes to design and build the world’s leading floor care products.

Listen to what some Hoover engineers say about their jobs and their company.”

Sophisticated Engineering Environment

Sue Roberts - 03:00:00

I think that the Hoover company has... doesn't have a high technology image, and I think anyone coming in would be surprised at how much technology we have here. I see that every time we bring a salesman in and walk them through a floor. They are usually pretty surprised at what we do here in-house.

Kevin Thomas – Scene begins at 00:21:20

While some people in the industry say that designing vacuum cleaners isn't rocket science, but I have to say that when you really look at all of the technologies that go into a vacuum cleaner... from the injection molding to the stress analysis that has to be done on the plastic parts, all the way to the fluid analysis that has to be done on the airflow system... there's a lot there.

Sue Roberts - 03:02:25

We manufacture just about everything we use in the vacuum cleaners.. It involves all lot of different engineering disciplines as far as manufacturing engineering. We injection mold almost all of our own plastic parts, we coat our own wire, we do some extrusion of hoses, we manufacture our own motors... and that involves a lot of disciplines for engineering.



Job / Project Examples

Narrator VO:

“So, what kinds of engineering assignments will you find at Hoover? Let’s ask some of our engineers.”

Rick Paar / Industrial Design

Rick Paar - 00:02:40

My job here at Hoover Company as an industrial designer is to make sure that the appearance of the product helps it to sell. We do that by paying close attention to how it looks as far as the form of the product and as far as the color, graphics and the packaging of the product.

Rick Paar - 00:11:08

This product is internally referred to as the Acorn. Probably given the name because of its size... being so small. But the idea what this product is that you would slip it on the end of a nozzle or hose end. That in turn drives a turbine that drives an agitator. It's a hand-held product that you would use I guess on steps or in your car or on smaller areas like that.

Rick Paar – From scene that begins at 00:13:22

So I started by just roughly drawing in rough shapes of what we were going to use to package around. And then the two dimensional scheme from the side seemed to be the most obvious direction to package around. Once I sort of got to a progression of an area that I liked, I moved that more into a finished type rendering coupled with starting a bit to get into the computer model.

Use that computer data to machined this foam. Marketing gave that a look. We kind of went back to the drawing board of bit. Refined the shape a little bit more and came down to what was agreed upon as the appearance surfaces which ultimately led to the production product.

Rick Paar - 00:33:01

I think that the biggest thing to surprise me about working here, based on my experience working in other places, was the scope of what it is that we work on or that we are responsible for. From the sketching phase although way through the packaging graphics and everything in between.

Rick Paar - 00:27:52

For me personally it's very important to be on the cutting-edge of any tools that might be out there. I think that it is important to know that Hoover... I don't know that I would say rare but definitely not every company is going to be as cutting edge in the tools used as what we are. I have co-op and worked at several there replaces. I feel that at this point Hoover is definitely as cutting-edge as what anybody is from the tools that we use to the prototyping that we used to get our models back. All the way through production.



Kevin Thomas / FEA

Kevin Thomas - 00:09:05

What I do in research is work with the team of people to develop new concepts, technologies and features for our products. We take marketing specifications and turn them into viable features for our products. After that we take the features and pass that work on to another team that takes the product into production.

Kevin Thomas - 00:19:45

The most critical stage to a project's success would be the fuzzy front end. The concept development phase, where you determine what the project is going to be and determine the consumer's needs and what it takes to fulfill those needs.

Kevin Thomas - 00:31:41

Our products are subjected to a number of tests for durability, reliability, strength of the part. Finite element analysis allows us to model a part in a computer before it's ever... before a physical model is ever made. It gives me in research the ability to design a part and be sure that it's going to be strong enough before it's actually... before we actually make the first model.

Kevin Thomas - 00:32:41

There are some areas where the stress and loading on a plastic part is more extreme than on the others. In those areas, we typically solve the problem using ribbing or even changing the structure slightly. Actually sometimes it's better to make the structure even more flexible rather than less flexible so that it will have less of a tendency to break under load.

Sleiman Abdullah / Fan design

Sleiman Abdullah - 03:48:29

My job at Hoover includes design and analysis of airflow components in a vacuum cleaner. This includes improvements in existing products and research for new development products.

Sleiman Abdullah - 04:10:03

Right now I'm involved in a project where I have to design a new motor fan system for a new development project for a vacuum cleaner. Now the new system is supposed to be smaller in size and give better performance.

Sleiman Abdullah - 04:29:42

What I am holding here is a motor fan system that is currently used in one of our vacuum cleaners.

Sleiman Abdullah - 04:26:21

The design of the fan is a complicated process. It involves studying many parameters of the fan.



Sleiman Abdullah - 04:27:50

Some of them are the inlet diameter of the fan, or the inlet diameter for the eye of the fan. The outlet diameter of the fan, the diameter of the blades, the outlet height of the blades, the inlet height of the blades, and even tapering the shroud of the fan.

Sleiman Abdullah – (continues from scene that begins at 04:26:21)

So what we do basically is do some numerical simulation in the computer using CFD codes in order to design our system. We will optimize our system depending on the specifications or the requirements. Then we will take that model and build the prototype. Then we will come to this testing facility and we will test the performance of the motor fans system and try to match it with the numerical predictions.

Sleiman Abdullah - 04:10:54

The interesting part is when you start building up the model and test it and see if the computer simulation matches, or the prediction from the simulation matches whatever data from the testing you are getting.

Sleiman Abdullah - 03:51:33

The type of skills an engineer needs in order to perform this job is knowledge of certain types of classes or courses at the university level, including fluid mechanics, thermal dynamics and heat transfer. Knowledge of computer simulations and numerical techniques in computer simulation. And some experience to perform whatever kind of testing is needed here at the lab.

Sue Roberts / Manufacturing R & D

Sue Roberts - 03:04:52

The job I'm in now is manufacturing research and development. It's just been created in the past year, it's a brand new job in I'm the only one doing it. It's been interesting to develop this job, learning about new technologies and try to apply them at the Hoover company. Every day is a challenge because no one has ever done this before and the challenges involved of trying to figure out which direction to grow, which technology would best suit the Hoover company, and which we can bring in a timely manner so we can benefit the company.

Sue Roberts – 02:49:48

The most exciting thing about my new job right now is learning all of the new processes. I get to look at all of the things other people are doing. I get to evaluate and learn about a lot of different fields, not just electrical.

Sue Roberts – 02:57:20

In this new job, I go to trade shows and visit other manufacturers trying to keep up on the newest technologies so that I can see if they are applicable to the Hoover company. If I see one, and I can study it and decide what it would cost for us to invest in it and what the benefits to the Hoover company are.



Sue Roberts – From scene that begins at 03:05:57

I guess I'm kind of proud that I was selected for this job because a lot of that work in the different areas is actually paying off. I'm glad I been selected to do this.

Tim Hertrick & Frank Witman / Lean Sigma

Narrator VO:

“Throughout all of Hoover’s engineering and manufacturing efforts, the company has a combined focus on increasing quality while decreasing costs. They do this through something called Lean Sigma.”

Frank Witman - 01: 19: 40

Lean Sigma has been here approximately 2 to 3 years. For those of you who don't know what lean Sigma is, it's a combination of lean manufacturing which basically tries to eliminate waste not only in the manufacturing facilities but in all of the processes throughout the company. Six Sigma, on the other hand is a documented discipline to reduce variability in processes.

Frank Witman – Scenes starting at 01: 21:10

Typically the approach is to use both of these processes independently in the manufacturing area first and then spread them throughout the organization. What we have done is chosen to combined them in order to create synergy with the Company and its working very well.

Tim Hertrick - 00: 00: 38

As a black belt, I get to work with a team of people and we go into an area and try to improve efficiency as well as product improvement. My job as a facilitator is to walk that team through the process, the proper tools of Lean Sigma to arrive at a better design.

Tim Hertrick - 00: 05 23

During a kaizen event, we would take people from the floor as well as engineers, and we focus on one area. In the case of injection molding, we will look at one or two machines and take a look at everything that's done in that area. We try to improve the efficiency as well as the set up in that area.

Tim Hertrick - 00: 07:20

The last kaizen event we had was at the Industrial Park. We took a 100 ton press and a group of people from the floor and we basically obtained a 65 percent reduction in set up time.

Tim Hertrick - 00:11:20

The people we bring together for a kaizen event typically include people out on the floor... the process operators out on the floor as well as some of the people responsible for moving the plastic parts to the assembly lines. We can take from all shifts and we work together during an shift.



Tim Hertrick - 00:11:42

The engineers role is to make sure the team functions as a team, works together, make sure everyone is heard and participates.

Tim Hertrick - 00:08:00

The cool thing for an engineer about working with Lean Sigma is the data. Everything is driven from data. As an engineer we like data. We need to make sure that we use the proper tools to analyze rather than going from opinion or beliefs.

Donna Hummell / Product development team

Narrator VO:

“Hoover engineers make some remarkable accomplishments. But almost every engineer will tell you that they couldn’t do it alone. The team approach is a big part of our company’s success, and that’s especially true of our new product development teams.”

Donna Hummell - 00:25:09

Basically, I lead a team of people who takes a project from concept the end of the concept phase when it goes from predevelopment into development and basically we take the concept and we take it all the way through design and development and we get it to the production floor.

Donna Hummell - 00:24:13

I probably have one of the most interesting jobs in the Hoover Company. Its not an easy job, but it certainly exposes you to everything, I mean, from research, from market research to engineering design, industrial design, the appearance, what does it look like, you have a package, you have a perception of what it should look like, and then you need to make a mechanical design that fits within this package. There’s a lot of negotiations that go on back and forth.

Donna Hummell - 00:24:48

Once you get that settled, during this whole process you have to be working with the manufacturing people, because the part needs to be producible. You could design a beautiful part that looks wonderful and works, but you can’t produce a million units a year, so you have that integration all through the project.

Donna Hummell - 00:41:30

At Hoover, we have a good product reputation but the competition is always knocking at your door, so you can’t be complacent, you need to look for, you know, what the next thing we should be doing or how can we do this better and I think that’s the challenge, and for a team members to work together, its probably the biggest advantage to being a member of a project team.



Opportunities for professional growth and development

Narrator VO:

“When you arrive at Hoover as a newly hired engineer, we expect you to bring basic skills, the right attitude, and a willingness to work hard. But you can expect the opportunity to keep building those skills as you continue to learn and grow professionally.”

Sue Roberts - 03:09:15

I think it's an excellent training ground for a new student coming out of college. I think you could learn a lot at the Hoover company. I keep going back to the fact that we are fully integrated. There's a lot of different processes. You learn a lot about basic engineering.

Frank Witman - 01:15:24

So it's very much an opportunity to expand and broaden your knowledge, and that's really what we want to do with their engineers. We want to develop them, no matter which side they are on ... engineering or manufacturing ... to become more valuable to the Company.

Skip Lawton - 02: 06: 30

Coming to work for the Hoover Company offers a lot of opportunity right now. We have a lot of good people who work here and a lot of them have worked here 30 or 40 years and are starting to head to out the door. And we are going to need to replace those people with good young people who have the talent and desire to keep Hoover number one.

Quality of life

Narrator VO:

“There’s an old saying that you should work to live, not live to work. While there’s plenty of challenges to fill your work day at Hoover, there are also plenty of things to fill your life outside of work.

North Canton is quiet town that has the feel of Norman Rockwell painting. But there’s a lively arts community, sports for athletes of every age, and plenty of dining and entertainment opportunities.

Less than an hour away, you can find the big city activities found in Cleveland, including major league sports, the Rock and Roll Hall of Fame, or nightlife that’s as good as you can find anywhere.

And the nice thing is that you actually have time to enjoy your life outside of work.”



Rick Paar - 00:34:15

The balance between work and home here is very good. The typical day starts at 8:00, we get done at 4:30. We have flex time, which I don't take part in for whatever reason, but very rarely are we working over 4:30. Generally speaking it's not an environment where you wouldn't be here every night until 8:00 or nine o'clock, like some other companies where I worked for.



History / Product Overview

Narrator VO:

“It’s been nearly one hundred years since William Hoover started making the Hoover Suction Sweeper. Today Hoover is the clear market leader in floor care products.

We are part of the Maytag Corporation, a 4-billion-dollar enterprise and a leading producer of home and commercial products with powerful brand names like Jenn-Air, Blodgett and, of course, Maytag.

But of all the Maytag Corporation’s brands, none is better known than Hoover. We maintain our leadership through outstanding design based on what we call Intelligent Innovation ... combining intensive market research with responsive engineering. We keep our eyes focused on the consumer through sophisticated marketing techniques like ethnography that helps us identify what customers expect from floor care products today, and what they will look for in the future.

We rely on our engineers to take the findings from that market research, and use it to guide them as they continue to create the best performing and best selling vacuums and floor care products.”

Frank Witman - 01: 23:01

Engineering has had a tremendous amount to do with the success at Hoover. Again, innovation is king. Product is king here. What that means this we have to supply a steady flow of products to the marketplace to maintain our Number one position. We do that through engineering, we do that through research, we do that in conjunction with marketing. But the engineers are the core group that come up with those ideas.

Final Thoughts

Narrator VO:

“How do our engineers feel about their decision to join the Hoover team?”

Skip Lawton – 02:03:27

I like working for the Hoover Company because they are a winner. When I get up and come to work in the morning, I know that when I come and everyone who I see has the same attitude that we are going to win no matter what we do.

Skip Lawton – 02: 05:45

My decision to come work for the Hoover Company is the best decision that I made in my career. Hoover has given me the opportunity to expand and grow and work in the areas that I enjoy.



Sue Roberts - 03:07:06

From my point of view, the Hoover company has been a great place to work because they have enabled me to get involved in just about any area. I have learned so much about so many different facets of manufacturing working for the Hoover company. They have enabled me to go from controls to mechanical stuff to now I'm involved in plastics, and I have been involved in the paper bag manufacturing, so I've learned a tremendous amount about manufacturing and a whole process at Hoover company.

Rick Paar - 00:36:45

I would recommend this place, and I have recommended it to a couple of friends. I think the complexity of the product you work on may be a little scary to someone coming right out of school, but after working in the field for a year or two you would find that a very simple product is going to get very mundane and boring very quickly. Where our product, being a little more complex, you always feel a bit like you are on fire, trying to make your skills better. There's greater room for improvement whether it be in your speed or skills or anything of that nature.

Donna Hummell - 00:47:42

The industry is growing, this company is growing so we need people who are very motivated. Who have a good solid technical background and if you have that background you will fit in and have the motivation, you will fit in very well, but you need to want to work and come to work.

Closing

Return to our college student at his desk with the computer looking at Hoover literature.

VO Narrator:

“You can see that Hoover has a lot to offer new engineering graduates. If you are up to the challenge of helping us to hang on to our position as the number one manufacturer of floor care products, and one of the leading brand names in the world, we'd like to talk with you.”

Graphic of contact information.

