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cookies, Reddit may still use certain cookies to ensure the proper functionality of our platform. For more information, please see our Cookie Notice and our Privacy Policy. If you are deciding between majoring in civil engineering or chemical engineering, you might want to know more about what each major has to offer. This post will show you the key
facts about each major and help you to decide which would be a better degree for you. At a glance: Chemical EngineeringCivil EngineeringPayscale reportedaverage pay$81,140$70,508Job prospectsModerateGoodTypes of jobsyou can qualify forChemical engineerProject engineerProcess engineerManufacturing engineerProduction
engineerEnvironmental engineerCivil engineerProject engineerStructural engineerTransportation engineerGeotechnical engineerWater resources engineerConstruction engineerDifficulty of themajorHardHardKey things to noteThere are only around 32,600chemical engineering jobs inthe US. This could make itdifficult to find a job and youwill likely
need to relocate.Average predicted job growth.Good reported job satisfaction.A relatively secure fieldonce you are able to land ajob.Employable with just a bachelorsdegree.High-stress work environmentin the early years.High job satisfaction and fulfillment.Low predicted job growthover the next decade.The work environment canbe more physically
active than mostjobs since youll need to go to the constructionlocations occasionally. However,there is also a lot of meetings anddesign work using computer software.Source for civil engineering degree salary and jobsSource for chemical engineering major salary and jobs There are a number of things to consider when choosing between the two
degrees and there are many similarities between them. Below, is details about each major, their differences and reasons to choose one or the other. Below are some details about the civil engineering major. Pay According to Payscale, the average pay for a person with a degree in civil engineering is $70,508. This is higher than the average pay for
most majors. However, it is a lot lower than alternative engineering majors such as computer engineering ($87,000) and electrical engineering ($92,000). It is also lower than the reported average pay for chemical engineering which is $81,140. On one hand, civil engineering could be seen as a safe major because there will always be buildings, dams,
highways, stadiums, etc that need to be built. As a result, once you are able to get a job in civil engineering, it is typically seen as a relatively secure job to have. However, it can be tricky to find a job at the entry-level and the price of the job security is that the pay is slightly lower than alternative majors such as computer engineering, electrical
engineering, and computer science. Also, because you will be building structures that many people will be using and that cost millions of dollars, it can be a very stressful job, especially in the early years. Although, it is also typically a very interesting field to work in, and completing a project successfully can be very fulfilling. Jobs that you can get
with a civil engineering degree include: Civil engineerProject engineerStructural engineerTransportation engineerGeotechnical engineerWater resources engineerConstruction engineer Civil engineering has a number of sub-fields and you will need to specialize in one of them before getting a job. The subfields include: Construction engineering. This
involves managing the project as it is underway and building the temporary structures that are used while constructing the actual structure. Geotechnical engineering. This involves ensuring that the foundations of the structure are well built. Structural engineering. This involves designing the structure and ensuring that it will be able to support
itself. Transportation engineering. This involves building and maintaining streets, highways, airports, docks, and harbors. Water resource engineering. This involves managing water resources by designing new equipment and facilities. Difficulty Civil engineering is a difficult degree that will involve a lot of mathematics including calculus, linear
algebra, and differential equations. It will also involve some physics and the engineering classes themselves can be difficult. There will also be a lot of lab classes that will involve a lot of projects. You can expect chemical engineering to be similarly difficult to chemical engineering which is also a difficult major. Classes Classes that you can expect to
take in a civil engineering degree can include: CalculusLinear algebraDifferential equationsPhysicsMechanicsIntroduction to programmingIntroduction to civil engineeringCivil engineering materialsFluid mechanicsMechanics of structuresStaticsStructural engineeringWater resources engineeringGeotechnical engineeringTransportation
engineeringConstruction engineering You can also expect to take more specialized classes related to the specialization that you choose. Things to consider Before choosing civil engineering and the university that you want to go to, it would help to research the type of civil engineering you are most interested in. This is so that you know what to
specialize in and so that you know what university to choose because some universities will only offer certain specializations. Before choosing civil engineering and the university that you want to go to, it would help to research the type of civil engineering you are most interested in. This is so that you know what to specialize in and so that you know
what university to choose because some universities will only offer certain specializations. Details about a chemical engineering degree Below are some details about a degree in chemical engineering. Pay According to Payscale, the average pay of someone with a degree in chemical engineering is $81,140. This is similar to the average pay you will
find with most other engineering majors. Also, according to the BLS, the median pay of a chemical engineer is $108,770. The predicted growth rate for chemical engineering jobs is 4%, in total, over the next decade and the number of chemical engineering jobs is said to be 32,600 (source). This means that chemical engineering only has average
predicted job growth. Also, compared to other engineering majors, 32,600 is not a lot of jobs. This means that it is more likely that you will have a hard time looking for a job in chemical engineering and that you will be more likely to have to relocate. However, as mentioned above, the median pay of a chemical engineer is high, so when you do get a
job it can pay well. Also, they tend to be relatively secure jobs so you should be able to keep your job for a decent amount of time once you get one. Also, most people find them to be interesting jobs with good job satisfaction. According to Payscale, common jobs for chemical engineering majors includes: Chemical engineerProject engineerProcess
engineerManufacturing engineerProduction engineerEnvironmental engineer Chemical engineering is a difficult major. It will include a lot of math and physics and the chemical engineering classes themselves can be difficult. Classes Some classes you can expect to take in chemical engineering can include: CalculusLinear algebraDifferential
equationsPhysicsThermodynamicsKineticsChemistryBiology You can look here to see an example degree sequence of chemical engineering. One thing to consider is that chemical engineering is not the same as chemistry. In chemical engineering, you will be focusing more on creating systems to create chemicals, fuel, drugs, food, and other products
(source). Whereas, a chemist will be more focused on things such as studying substances at the atomic and molecular level in a lab (source). While other engineering degrees will pay a similar amount and often have a wider job pool available to you, you might prefer chemical engineering because of the types of jobs you can work in. It would help to
do a lot of research the types of things you could be working on and to see if it is something you would enjoy. Conclusion Overall, both chemical engineering and civil engineering are majors that have good pay and satisfaction. They both have similar job growth. However, civil engineering has around ten times the number of total jobs. This means that
it should be easier to find civil engineering jobs in a location you want. They will also both require a similar amount of study time. However, according to the BLS, chemical engineers do get paid more than civil engineers. When making your decision, it would help to consider what you would most be interested in working on and to choose your major
accordingly. Authors Note: This article is based on a longer research paper. The paper can be accessed for details.Engineering degrees are unanimously considered to be among the toughest college majors out there. But among the various disciplines, which engineering major is the hardest?As a chemical engineer myself, I recall speculating about
this with my classmates from time to time, usually in the middle of working on some brain-numbing homework assignment.Since engineering students often take courses in each others disciplines, take courses in the same buildings, and study in the same areas we keep tabs on how hard students in the other disciplines are working.Overall, we all
knew that our colleagues in other disciplines work hard, much harder than in non-engineering fields. But at the same time, there was a bit of playful competition as to whose homework and projects were the most rigorous.The Classic Argument for Ranking Engineering DisciplinesThe classical argument for ranking engineering disciplines for difficulty
goes something like this.Civil engineering is easiest because everyone has been exposed to buildings, bridges, etc since birth. Thinking about these, understanding the theory, and designing them therefore isnt too difficult, since the intuition is already there. Moreover, civil engineers deal with visible and physical things (unlike chemical or electrical
engineers).Mechanical engineers are second easiest because cars and gears and the like are also highly intuitive, and also deal with the visible, physical realm. But since mechanical contraptions are often in motion, they are more complicated than static structures, and mechanical engineering is more complex than civil engineering.Then, people will
rank electrical and chemical engineering as hardest with the order depending on whether they think its harder to visualize chemical reactions or to think about electricity.To me, this thinking does make sense, since as well see, the intuition argument above, does generate roughly the same order as the data.It makes sense to me that fields such as
chemical or electrical engineering where students come in with almost no intuition on the phenomena, require much more learning and content to be mastered over the span of the engineering degree.Having taken courses in civil, electrical, materials science, chemical, and bio-engineering; my personal ranking (prior to seeing the data) was: chemical
and bioengineering as most difficult, then electrical engineering, followed by mechanical engineering, and in last, civil engineering.Luckily, we dont need to go off my speculations for this article.Measuring DifficultyInstead, I rely on data generated by college students themselves, as they rate courses theyve completed. In these ratings, college
students rate their courses on a 1-5 scale of difficulty. From these ratings, I estimate the share of the professors within each major that have a difficulty of at least 3 (medium).My original dataset comes from almost 3 million student ratings from 200 universities.My original dataset comes from almost 3 million student ratings from 200 universities.I
only rate majors with plenty of ratings per university and reviews from multiple universities. You can read more about my data process here as well as how it correlates with actual weekly study hours data.Lets jump in and see what the hardest and easiest engineering majors in America are.Engineering Majors Ranked By DifficultyThis list ranks the
engineering majors by the share of professors that are considered by students to be difficult.If you compare the list for engineering to the full list for all majors, you will notice that all engineering majors are really hard. The 2nd easiest engineering major, Industrial Engineering, is ranked 48th out of 118 majors. One of the easiest majors among the
engineering fields is actually among the hardest majors in all of college!But according to the data Ive collected, students who took Chemical Engineering classes rated their major as hardest with 80% of professors rated as difficult. This is followed by Electrical Engineering in second with 73%, and Aerospace Engineering in third with 71%.Ranking
easiest is Engineering Technology (45%), followed by industrial engineering (53%), and biological engineering (56%).You will notice that the intuition argument for difficulty would get the order roughly right. Another interesting fact, is that more difficult engineering majors earn more than less difficult ones. Have you taken courses in multiple
engineering disciplines? How does this list compare to your personal experience?Similar Posts For Students Considering Majoring in EngineeringEngineering majors are hard, but dont think that theyre impossible. Genius is not required.On the other hand persistence and a willingness to work harder than youve ever worked before in your life are
absolutely critical.Even though the courses are rigorous and study schedules intense, engineers look back on their training with fondness. Kind of like the Navy Seal who successfully completes Hell Week.One tip I hope is helpful, is to be intentional with the way you approach your courses and studying. One book I wish I read when I was in college
was Cal Newports How to Be a Straight-A Student. I discovered it after my undergrad and its been hugely helpful in graduate school in shaping how I think about learning.Since that first book, Ive read a lot about efficient learning techniques and the learning process I summarize my ideas here. Chemical generally pays the best of all branches of
engineering, however, remember this is skewed by higher wages in the oil sector.Chemical is more in demand, only recently it has achieved such high numbers of interest.Chemical again, especially oil, a newer discipline too.Voluntary work: just e-mail as many places as possible! Or if you know someone who works there, just ask!I live near Aberdeen
so I was lucky enough to get a few days with Chartered Engineers there, as my neighbour worked there Don't think of chemical as being very chemistry related, the more "correct"/less misleading title is "process engineering"I only know about unis in Scotland, as I didn't bother to apply elsewhere, but the main two are Edinburgh and
Strathclyde.Edinburgh has a more widely known reputation, but Strathclyde is better for industrial contacts etc.Out of the two, I personally, chose Strathclyde.Becoming a professional engineer is no easy task. There are many different types of engineering degrees to choose from, and each one comes with its own set of challenges. So, which degree is
the hardest to study? Is it civil engineering?In this article, we will explore what studying civil engineering involves, and find out if it is hard based on the challenges students will face. We will also look briefly at how hard it is compared to other engineering degrees. Finally, we will give some tips on studying it, in order to work as a civil engineer.Lets
get started! What Does Studying Civil Engineering Involve?Civil engineers on site. engineering is one of the oldest, most versatile, and established engineering disciplines. It involves planning, designing, constructing, and maintaining the physical and environmental infrastructure of our cities and towns. This can include everything from roads to
bridges, flood barriers to sewage systems, and schools to hospitals.Given that the field of civil engineering has such a wide range of applications, it is no surprise that people who are interested in this field of engineering ask if its a hard or difficult degree to study.Typically, civil engineering students may take engineering classes in mathematics,
physics, materials science, geology, and environmental science. They also learn how to design and construct buildings and other infrastructure projects, how to choose the right materials, and how to use specialist 2D/3D software packages such as AutoCAD, ArchiCAD, and Civil Designer.Civil engineering program has also developed to consider a
wider range of environmental issues in recent years, allowing us to address pollution and water scarcity problems while also considering the potential of sustainable energy within the sector.You can learn more about civil engineering in our more in-depth guide:Everything You Need to Know About Civil EngineeringIs civil engineering hard to study?
So, is studying civil engineering hard?The answer to that question depends on a few factors, including an engineering students individual circumstances, the subjects you are strong in, and also what you consider hard. Civil engineering is definitely one of the more challenging engineering degrees available, but its not necessarily harder than other
types of engineering degrees.Lets dive into the challenges and expectations that students studying civil engineering will face.The Challenges of Studying Civil EngineeringA civil engineer using AutoCAD. of the most important things to be aware of is coursework is extremely demanding. The civil engineering college major requires a lot of dedication
to stay on top of your workload. So to manage all the lectures, lab work, and study time required, youll need to be extremely well organized with your time.Another thing that makes civil engineering difficult is that it covers a wide range of topics as we mentioned earlier, given its a very versatile degree so you will learn across a number of different
fields. Environmental problems, construction methods, and many more things are all factors that must be understood by civil engineers.A drawback for some civil engineering students is that it is a practical degree. This means that you will not just be learning from textbooks, but will need to spend time undertaking practical tasks such as site
surveying, material testing, and creating designs with computer-aided design software to mention a few.If you arent a fan of mathematics and science (particularly physics or chemistry), lack an aptitude for them, or simply dont enjoy them, then any engineering field will be a challenge.With civil engineering in particular youll need to learn and use
many math concepts such as calculus, differential equations, trigonometry, and algebra. There will be some students who find topics on structural analysis, hydraulics, thermodynamics, materials science, and fluid mechanics difficult, and some students will who will not!It all depends on the effort you are willing to put in.It might also be difficult to
obtain the grades necessary to fulfill entry requirements for civil engineering studies. Although entry requirements vary between institutions, expect the leading universities and colleges to be selective due to the competition, so will require top entry grades. For example, the UCAS points to study civil engineering range from 96 (CCC at A-Level;
MMM-DD at BTEC level) to 200 (A*AAA at A-Level; D*DDD at BTEC level) points in the UK. [1] Or in the USA the minimum freshman entry requirements are an ACT math score of 25 or higher (or an SAT Math score of 590 or higher) and a 3.0 or higher unweighted high school GPA. [2]Finally, one of the harder tasks that students face is working in
teams. Civil engineering is a team-based profession, so learning how to collaborate will be essential. This means being able to work well as part of a bigger group and communicating effectively with your coworkers that participate throughout the design, construction, and management process.So in the section above, weve addressed some of the
reasons why civil engineering can be perceived as hard. But, in comparison to other types of engineering degrees, what is it comparable to?Is civil engineering hard to study compared to other engineering disciplines?The short answer is yes, and no. In this section, well outline some of the most common opinions on this topic.A number of people say
that civil engineering is harder than studying chemical engineering, as you need to have a stronger foundation in maths and science. Therefore, it can be said that civil engineering is hard when compared to chemical engineering.Some professionals in the fields of nuclear, mechanical, aerospace, and electrical engineering argue that the maths in civil
engineering is easier because its not as complex or diverse.While the above opinions are purely subjective (i.e. based on an individuals perspective), it is important to remember that everyone has different strengths and weaknesses. So what might be hard for one student, may not be as hard for another.What we can say definitively, however, is that
civil engineering degree programs are extremely comprehensive and diverse. So if youre looking for a challenge then studying civil engineering will definitely provide this.Tips on Studying Civil EngineeringAn engineering student solving integral equations. . The civil engineering major requires a lot of math and physics, so it may be difficult for
people who dont enjoy these subjects2. There are numerous distinct areas of civil engineering that may help you discover what excites you most. The following are some examples of specialties: structural engineering, environmental planning, and water resource management3. Knowledge of planning and construction laws and regulations will be part
of what you will need to be aware of so make sure to stay updated on these.4. As the field is constantly evolving, its important to keep up with technological advances. This may include attending seminars or workshops, as well as reading professional journals.5. Dont forget the importance of effective communication! This is a critical skill for civil
engineers as much of the work is team-based.6. Engineering education is very demanding, so make sure to take care of your wellbeing by maintaining a healthy lifestyle. This includes eating well, exercising, and getting enough sleep.Wrap UpSo, is civil engineering hard? The answer is yes, it can be a challenging degree to obtain. With its combination
of practical coursework and theoretical learning, this degree provides students with a strong foundation that can be applied in many engineering fields. So dont let the challenge put you off if anything, it should only make you work harder to achieve your goals!But if youre up for the challenge, then studying civil engineering degree will take a lot of
hard work but it will be an extremely rewarding experience and worth it in the end. Good luck!References:[1] 20engineering%20requirements[2] If youre thinking of studying some form of engineering during college, youve made an excellent choice. Engineers are the people responsible for the worlds buildings, bridges, robots, chemical products, and
much more. However, achieving an engineering degree is no easy task. It requires a lot of technical prowess, a robust foundation in mathematics and science, and a strong work ethic to tackle the challenging curriculum. That being said, not all engineering majors are created equal. Some engineering majors are easier than others. Read on to discover
what many consider the hardest and easiest engineering majors that you can pursue in college. Looking for the best colleges to pursue an engineering degree? See our list of the top colleges for engineering. 5 Factors To Consider When Choosing An Engineering Major Rarely will you find a college that offers a generic Engineering major. More likely
than not, you will have to choose from a number of different specialtiessuch as civil engineering, mechanical engineering, chemical engineering, and more. They all tend to have the same foundational courses, but they quickly splinter off into their own specializations. When you choose Engineering, you will need to do some soul searching to figure out
the particular type of engineering you want to pursue. Here are some guiding questions to help you narrow down your choices: 1. What are your personal interests and goals? Specifically, what got you interested in becoming an engineer, besides the large paycheck? Were you interested in the idea of building a skyscraper, or was it robotics that
piqued your interest? Try to think about what you would be trying to achieve after getting that engineering degree, and that might help you figure out which type of engineering you should be pursuing. 2. What are your strengths? Dont become a chemical engineer if you hated AP Chemistry. Definitely think about aerospace engineering if concepts
like aerodynamics and thermodynamics come easily to you. The great thing about each of the engineering disciplines is that they are specific enough that you should be able to tailor your major to study what you are good at, with minimal interaction with subjects you dont excel at. 3. What are the course requirements for each major? While each
engineering major has a strong basis in mathematics and physics, the rest of the course load tends to vary based on the major. Its worth your time to take a look at the sample curriculum of each engineering major and see which one has courses that you would be most interested in. 4. What is the Return on Investment (ROI) of each major? While most
engineering majors come with a nice salary, some engineering careers pay slightly more than others. Some degrees will also cost more than others, depending on the college you go to. Weigh your costs against potential earnings, especially if you expect to need loans for college. 5. Which field best suits your lifestyle? Its also worth considering the
lifestyle choices youll have to make by pursuing each major. Many engineering majors require you to work long hours without any semblance of overtime, and some of them require you to be on your feet for many hours during the day. Consider these lifestyle choices as you decide which major to pursue. How We Made This List Similarly to how you
should consider many different factors when choosing your college major, we have considered many different factors when compiling our list of the hardest and easiest engineering majors. First and foremost, we want to remind you that every engineering major is difficult. Compared to other majors in the humanities and social sciences, engineering
majors are far more technical and require tons of study time. If youre looking for an easier major that will give you a good study-life balance during college, engineering may not be right for you. That being said, when ranking each of the different engineering majors, we took the following factors into consideration: General Reputation: Some
engineering majors are known for being tougher than others.Course Requirements: For each engineering major, weve taken into consideration how much math, physics, and other advanced coursework is involved.Study Time: Engineering majors all require a great deal of studying time, but some majors require more time for studying and other
projects than others. Of course, these factors all differ depending on which school youre attending and what academic program youre in. Therefore, if you want the most realistic picture of how hard each engineering major is going to be for you, you should talk to your schools engineering faculty or people at your school who are in the major. Hardest
Engineering Majors 1. Electrical Engineering Electrical engineers are primarily focused on the physics and mathematics of electricity, electronics, and electromagnetism. They use this skill set to work on and improve every kind of electrical hardware there is. Students consider electrical engineering to be the toughest major mostly because of the
abstract thinking involved. With majors like civil engineering, you can visually see the effect of what youre designing. However, you cant physically see electrical currents and circuits, so an electrical engineers job involves a lot of creative thinking and theoretical application. Furthermore, electrical engineering involves heavy use of abstract
mathematical concepts like partial differential equations. If youre the kind of person who enjoys discrete mathematics, electrical engineering concepts may prove challenging for you. 2. Chemical Engineering The difficult thing about chemical engineering is that it takes complex engineering fundamentals and applies them to chemistry concepts, a
completely different fieldmaking it truly a multidisciplinary major. Chemical engineers are the link between manufacturing and science. They are the experts at transforming raw materials into the goods that we use in our everyday lives. Youll often see chemical engineers take on the role of Chemical Technologist, Pharmaceutical Engineer, and Plant
or Chemical Process Engineer. Overall, chemical engineering is a very lucrative major, but it becomes complex extremely quickly as it is at the intersection of chemistry, mathematics, and physics. If you feel this is the major for you, be prepared to spend several hours studying a wide array of subjects. 3. Aerospace Engineering Aerospace engineering
is very similar to mechanical engineering in terms of the concepts it covers; however, aerospace engineers put a special emphasis on designing and maintaining machines that fly. This type of major is well suited for someone who wants to work in the national defense industry or for NASA, though aerospace engineers are also useful in the private
sector, particularly in automotive manufacturing. Like mechanical engineering, aerospace engineers have a heavy course load with a lot of mathematics classes, and with many complex concepts that you will have to call upon quickly and often. Moreover, aerospace engineers need to learn the complex concept of fluid dynamics, a branch of science
that deals with the study of liquids and gases. Easiest Engineering Majors 1. Environmental Engineering Environmental engineers are focused on developing machines and structures that will cause minimal harm to the environment. At the intersection of environmental science and engineering fundamentals, environmental engineering is certainly not
an easy major. Its considered one of the easier engineering majors that you can study though, because its not as focused on advanced math and physics as other engineering majors. When you study environmental engineering in college, you study fundamental engineering concepts in mathematics and physics, but you also blend in the study of
ecology and other environmental concepts. Students in this major generally work on many design projects and research papers. If youre interested in solving problems that could impact the Earth, this major is for you. 2. Industrial Engineering Industrial engineering is at the intersection of engineering and social science concepts like business and
economics. Industrial engineers are focused on designing new actionable systems and protocols for companies, hospitals, factories, and any other organizational structures. They are also responsible for fostering efficiency and eliminating waste in the production process. Industrial engineering is certainly more technical than a typical business
program, but its also definitely less focused on concepts in physics and more focused on concepts in business and industrial organization. If youre interested in perfecting the organizational workplace, this engineering career is best for you. 3. Architectural Engineering Architectural engineering is a really interesting major where you learn to build,
maintain, and create buildings and structures that are effective and structurally sound. Though architectural engineers are very deeply involved in the actual construction and maintenance of other structures, there is a design aspect to their job. Some architectural engineering students are even required to take business courses as part of their major
requirements. These less technical courses bring down the difficulty of this major overall. If you become an architectural engineer, you will likely be very involved in construction projects. Expect to spend time working with architecture firms and supervising the development of various structures. Best Colleges for Engineering What are the best
schools for engineering? Check out our video to learn more! Also read on to see a curated list of the top schools. 1. Massachusetts Institute of Technology | MIT Location: Cambridge, MAUndergrad Enrollment: 4,500Acceptance Rate: 4.1%Middle 50% SAT/ACT: 1510-1570 SAT/34-36 ACT MIT is arguably the nations most prestigious STEM schoolit
was founded in 1861 at the beginning of the American Industrial Revolution and has been the launching point of new technologies and businesses since its inception. MITs renowned School of Engineering divides its engineering programs into nine fields: Aeronautics and AstronauticsBiological EngineeringChemical EngineeringCivil and
Environmental EngineeringElectrical Engineering and Computer ScienceInstitute for Medical Engineering and ScienceMaterials Science and EngineeringMechanical EngineeringNuclear Science and Engineering MIT engineering students graduate with more than a prestigious degree; they also leave the college with valuable firsthand
experience90% of MIT undergraduates work on research projects under the guidance of faculty. These students enjoy some of the best facilities, equipment, and support available, from MakerLodge, which trains undergraduates to use machine shop tools, to the Sandbox Innovation Fund Program, which provides student innovators with funding and
mentorship. 2. California Institute of Technology | Caltech Location: Pasadena, CAUndergrad Enrollment: 900Acceptance Rate: 3.9%Middle 50% SAT/ACT: N/A Like MIT, Caltech enjoys a very prestigious reputationits sometimes called the MIT of the West. Despite that nickname, it offers a stark contrast to the number one school on our list thanks to
its smaller undergraduate population, warm Southern California climate, and comparatively laid-back West Coast attitude. Caltech is known as a powerhouse in the science and engineering fields and offers a variety of undergraduate engineering degrees, ranging from Chemical Engineering to Electrical Engineering to Mechanical Engineering.
Students can even create a personalized curriculum at Caltech through the colleges Interdisciplinary Studies Program. Caltech is notable for its facilitiesits campus is home to NASAs Jet Propulsion Laboratory, the Caltech Seismological Laboratory, and the Palomar and Keck Observatories. Equally impressive are Caltechs alumni and faculty, 46 of
whom have won a total of 47 Nobel Prizes. 3. Stanford University Location: Stanford, CAUndergrad Enrollment: 7,800Acceptance Rate: 3.68%SAT/ACT:94.4% scored between 1400 and 1600 on the SAT96.1% scored between 30 and 36 on the ACT With a sterling reputation and in close proximity to Silicon Valley, Stanford is a top-choice college for
many aspiring engineers. Stanfords School of Engineering offers 10 defined engineering majors: Aeronautics and AstronauticsBioengineeringChemical EngineeringCivil EngineeringComputer ScienceElectrical EngineeringEnvironmental Systems EngineeringManagement Science and EngineeringMaterials Science and EngineeringMechanical
Engineering Eight other interdepartmental programs also result in engineering degrees: Architectural DesignAtmosphere and EnergyBiomechanical EngineeringBiomedical ComputationEngineering PhysicsIndividually Designed Major in EngineeringProduct DesignPetroleum Engineering (Energy Resources Engineering) Research plays a critical role
in the education of engineers at Stanfordmore than 200 undergraduates annually work with faculty and research groups over the summer. Out of the classroom and lab, students will find a variety of engineering-related student groups, including Stanford Student Robotics, the Stanford Solar Car Project, and the Society of Women Engineers. 4.
Princeton University Location: Princeton, NJUndergrad Enrollment: 4,800Acceptance Rate: 4.3%SAT/ACT: 1470-1560 SAT/34-36 ACT Approximately one quarter of Princeton undergraduates are engineering students andas you might expect from an Ivy League institutionone enormous benefit of this experience is being surrounded by some of the
countrys most talented teachers and students. Liberal arts studies and a solid foundation in engineerings scientific principles constitute a large part of Princetons undergraduate engineering education, and position students for success in a variety of careers. Princeton Universitys School of Engineering and Applied Science is divided into six academic
departments: Civil and Environmental EngineeringChemical & Biological EngineeringComputer ScienceElectrical and Computer EngineeringMechanical and Aerospace EngineeringOperations Research and Financial Engineering All Princeton engineering students conduct an independent investigationeither a semester-long project or a full-year
senior thesisas part of their undergraduate curriculum. 5. Harvard University Location: Cambridge, MAUndergrad Enrollment: 13,100Acceptance Rate: 4%Middle 50% SAT/ACT: 1480-1580 SAT/33-36 ACT Approximately a mile down the road from the number one school on our list lies the number five school on our listHarvard. While Harvard is
perhaps the most recognizable college in the country, it isnt generally thought of as an engineering school in the way that colleges like MIT and Caltech are. This offers engineering students some hidden advantages, such as less competition, a smaller, more tight-knit community, and easier access to faculty. Similarly to how Princeton engineering
students are taught, Harvard engineering students develop a solid foundation in applied science and mathematical analysis as well as a foundation in liberal arts. This exposes them to a wide breadth of study and ensures they graduate with a broad set of skills, whether its solving technical challenges or thinking critically about the impact of
innovations and technology. Harvards undergraduate engineering programs fall under four primary areas of study: BioengineeringElectrical EngineeringEnvironmental Science & EngineeringMechanical Engineering Research opportunities abound at Harvard both on campus in the schools dedicated undergraduate research laboratories and Active
Learning Labs, and in the Cambridge/Boston area, which is a hotbed for STEM-focused companies. What Are Your Chances of Acceptance to Top Engineering Schools? Most engineering programs are extremely selective, even if the university overall has a higher acceptance rate. To help you figure our your chances of acceptance, CollegeVine has
developed a free chancing engine that helps you develop a balanced school list! It also offers suggestions on how you can improve your admissions profile. Authors Note: This article is based on a longer research paper. The paper can be accessed for details.Engineering degrees are unanimously considered to be among the toughest college majors out
there. But among the various disciplines, which engineering major is the hardest?As a chemical engineer myself, I recall speculating about this with my classmates from time to time, usually in the middle of working on some brain-numbing homework assignment.Since engineering students often take courses in each others disciplines, take courses in
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motion, they are more complicated than static structures, and mechanical engineering is more complex than civil engineering.Then, people will rank electrical and chemical engineering as hardest with the order depending on whether they think its harder to visualize chemical reactions or to think about electricity.To me, this thinking does make
sense, since as well see, the intuition argument above, does generate roughly the same order as the data.It makes sense to me that fields such as chemical or electrical engineering where students come in with almost no intuition on the phenomena, require much more learning and content to be mastered over the span of the engineering
degree.Having taken courses in civil, electrical, materials science, chemical, and bio-engineering; my personal ranking (prior to seeing the data) was: chemical and bioengineering as most difficult, then electrical engineering, followed by mechanical engineering, and in last, civil engineering.Luckily, we dont need to go off my speculations for this
article.Measuring DifficultyInstead, I rely on data generated by college students themselves, as they rate courses theyve completed. In these ratings, college students rate their courses on a 1-5 scale of difficulty. From these ratings, I estimate the share of the professors within each major that have a difficulty of at least 3 (medium).My original dataset
comes from almost 3 million student ratings from 200 universities.My original dataset comes from almost 3 million student ratings from 200 universities.I only rate majors with plenty of ratings per university and reviews from multiple universities. You can read more about my data process here as well as how it correlates with actual weekly study
hours data.Lets jump in and see what the hardest and easiest engineering majors in America are.Engineering Majors Ranked By DifficultyThis list ranks the engineering majors by the share of professors that are considered by students to be difficult.If you compare the list for engineering to the full list for all majors, you will notice that all engineering
majors are really hard. The 2nd easiest engineering major, Industrial Engineering, is ranked 48th out of 118 majors. One of the easiest majors among the engineering fields is actually among the hardest majors in all of college!But according to the data Ive collected, students who took Chemical Engineering classes rated their major as hardest with
80% of professors rated as difficult. This is followed by Electrical Engineering in second with 73%, and Aerospace Engineering in third with 71%.Ranking easiest is Engineering Technology (45%), followed by industrial engineering (53%), and biological engineering (56%).You will notice that the intuition argument for difficulty would get the order
roughly right. Another interesting fact, is that more difficult engineering majors earn more than less difficult ones. Have you taken courses in multiple engineering disciplines? How does this list compare to your personal experience?Similar Posts For Students Considering Majoring in EngineeringEngineering majors are hard, but dont think that
theyre impossible. Genius is not required.On the other hand persistence and a willingness to work harder than youve ever worked before in your life are absolutely critical.Even though the courses are rigorous and study schedules intense, engineers look back on their training with fondness. Kind of like the Navy Seal who successfully completes Hell
Week.One tip I hope is helpful, is to be intentional with the way you approach your courses and studying. One book I wish I read when I was in college was Cal Newports How to Be a Straight-A Student. I discovered it after my undergrad and its been hugely helpful in graduate school in shaping how I think about learning.Since that first book, Ive read
a lot about efficient learning techniques and the learning process I summarize my ideas here. Exploring the Pros and Cons of Chemical Engineering and Civil EngineeringUnderstanding the Day-to-Day Activities in Engineering FieldsChemical engineering and civil engineering present distinctive work environments and daily activities. Chemical
engineers typically engage in tasks within an office or laboratory setting, focusing on the design and optimization of processes related to chemical manufacturing. They may work in industries such as pharmaceuticals, petrochemicals, and environmental services. On the other hand, civil engineers tend to spend significant time on construction sites,
overseeing projects like bridges, roads, and buildings. Their role encompasses designing and managing infrastructure projects, considering safety, sustainability, and functionality.Job Opportunities and Industry ScopeWhen evaluating job prospects, civil engineering generally offers broader opportunities in government and private sectors. Many civil
engineers potentially secure positions in public works and urban development projects, contributing to community infrastructure. In contrast, chemical engineering jobs are often concentrated within specific industries, such as chemicals, energy, and healthcare. While both fields offer career stability, civil engineering may present more diversified
options for employment.Market Demand for Chemical EngineersThe demand for chemical engineers is expected to grow, albeit at a pace that aligns with overall occupational growth. This industry is influenced largely by the evolution of manufacturing sectors, which consistently seek improved processes for efficiency and sustainability. As industries
adapt to new technologies, the need for chemical engineers remains relevant, securing their role in future advancements in various chemical applications.Is Chemical Engineering a Dying Field?Despite concerns about the longevity of certain engineering disciplines, chemical engineering is not facing extinction. The nature of this field ensures that
manufacturing processes will always rely on chemical reactions and innovations. Chemical engineers are essential for refining and advancing these processes, making them integral to industries that continuously strive for cost-effective and efficient production methods.Challenges in Chemical Engineering EducationPursuing a degree in chemical
engineering can be demanding due to the heavy emphasis on subjects like physics, mathematics, and chemistry. Students must navigate complex concepts and analytical problem-solving, and the rigorous curriculum often leads to considerable coursework and examinations. Aspiring professionals need to be resilient and committed to overcoming the
challenges posed by this discipline.Financial Considerations: Salary InsightsSalaries in engineering vary significantly based on specialization, experience, and geographical location. Civil engineers, for example, average around $80,000 annually in major cities like Sydney, Australia. Meanwhile, chemical engineers tend to command higher salaries,
with averages ranging between $72,000 and $108,000. Regions such as Alaska often provide lucrative salaries, reaching upwards of $125,000 a year, reflecting the demand and specificity of chemical engineering roles.Job Satisfaction Among Chemical EngineersThe happiness quotient for chemical engineers appears to reside below the average for
many professions, with ratings indicating a moderate level of job satisfaction. Factors influencing their contentment can include work environment, project types, and compensation. While job satisfaction varies among individuals, it is essential for prospective chemical engineers to consider their own career aspirations and values.Future Prospects in
Chemical EngineeringThe outlook for chemical engineering points toward a promising future. Companies are investing in innovations that enhance process efficiency, energy management, and waste reduction. Opportunities are vast in diverse sectors, including pharmaceuticals, food processing, and advanced materials. The evolution of technology
will undoubtedly generate new pathways for chemical engineers, embedding them firmly in the industrial landscape.Current Activities of Chemical EngineersChemical engineers engage in a wide array of tasks across multiple industries. Their skills are utilized in roles related to process design, production, and safety protocols. In practice, they tackle
problems ranging from energy efficiency in manufacturing plants to developing new materials in pharmaceuticals. This versatility allows them to make significant contributions across various fields.Evaluating Career Stress in Chemical EngineeringThe stress levels experienced by chemical engineers can vary significantly. While some pressure exists
to achieve results and streamline processes, many find the overall stress manageable. However, the intensity can spike during critical experiments or tight project deadlines. An understanding of ones capacity to handle such stress is important for prospective chemical engineering students and professionals.FAQWhat are the primary responsibilities
of a civil engineer?Civil engineers are responsible for designing and overseeing construction projects such as roads, bridges, buildings, and water supply systems. They ensure the safety, sustainability, and feasibility of these projects.Do engineers in both fields have good job security?Yes, both chemical and civil engineering fields offer relatively good
job security. However, civil engineers may find more diverse opportunities across various government and private sector jobs.Is it necessary to have a strong mathematical background for these engineering disciplines?Yes, both chemical and civil engineers require a solid foundation in mathematics. This skill is crucial for solving complex engineering
problems and performing calculations related to design and analysis.Engineering is a vast field with numerous branches, and each branch is designed to cater to a specific need. Two of the most popular branches in engineering are Civil Engineering and Chemical Engineering. Both of these fields have a rich history and have played a crucial role in
shaping the modern world. This article aims to provide a comprehensive comparison between Civil Engineering and Chemical Engineering. The article will delve into the definition and overview of both fields, historical background, key differences and similarities, real-life examples, career opportunities, advancements, and future outlook. Definition
and Overview of Civil Engineering: Civil Engineering is a branch of engineering that deals with the design, construction, and maintenance of physical and naturally built structures such as buildings, bridges, roads, and water supply systems. Civil Engineers use their knowledge of mathematics, science, and engineering to plan and execute these
structures. Definition and Overview of Chemical Engineering: Chemical Engineering, on the other hand, is a branch of engineering that deals with the design and optimization of chemical processes and products. Chemical Engineers use their knowledge of chemistry, physics, and biology to develop, design, and improve chemical processes and
products. Historical Background and Evolution of Civil Engineering: Civil Engineering has a rich history dating back to ancient times when civilizations like the Egyptians, Greeks, and Romans built structures like pyramids, temples, and aqueducts. During the industrial revolution, Civil Engineering evolved to include the design and construction of
buildings, roads, bridges, and water supply systems. With the advent of modern technology, Civil Engineering has expanded to include sustainable and green infrastructure, disaster management, and smart cities. Historical Background and Evolution of Chemical Engineering: Chemical Engineering has its roots in the field of chemistry, which dates
back to the ancient Greeks. During the industrial revolution, chemical processes were used to produce various products, and the need for optimization and improvement led to the evolution of Chemical Engineering as a separate branch. Today, Chemical Engineering plays a crucial role in the production of various products, including chemicals,
pharmaceuticals, food, and energy. Key Differences and Similarities between Civil and Chemical Engineering: Civil Engineering and Chemical Engineering are different branches of engineering that cater to different needs, but there are some similarities between the two fields. Both fields require the use of mathematics, science, and engineering to
solve problems and optimize processes. Both fields also require critical thinking, problem-solving skills, and a strong work ethic. The main difference between the two fields is their area of focus. Civil Engineers focus on the design, construction, and maintenance of physical structures, while Chemical Engineers focus on the design and optimization of
chemical processes and products. Real-Life Examples of Projects and Applications in Civil Engineering: Civil Engineering projects include the construction of buildings, bridges, highways, and other infrastructure projects. A notable example is the Burj Khalifa, the tallest building in the world located in Dubai. Civil Engineers also play a crucial role in
disaster management and the development of smart cities. Real-Life Examples of Projects and Applications in Chemical Engineering: Chemical Engineering projects focus on the production and design of chemical processes and products. A notable example is the production of biofuels, which is becoming an increasingly important source of renewable
energy. Chemical Engineers also play a crucial role in the production of chemicals, pharmaceuticals, food, and energy. Career Opportunities and Job Outlook for Civil Engineering: Civil Engineering is a highly in-demand field, and there are numerous career opportunities for Civil Engineers. According to the Bureau of Labor Statistics, employment of
civil engineers is projected to grow 6% from 2019 to continue from the line - Civil Engineering is a highly in-demand field, and there are numerous career opportunities for Civil Engineers. According to the Bureau of Labor Statistics, employment of civil engineers is projected to grow 6% from 2019 to 2029, making it a stable and secure career path
for individuals interested in pursuing a career in engineering. Some of the common career opportunities for Civil Engineers include construction management, structural engineering, transportation engineering, environmental engineering, and geotechnical engineering. Civil Engineers are responsible for designing and overseeing the construction of
a variety of infrastructure projects, including buildings, bridges, highways, and airports. They play a critical role in ensuring that these projects are safe, efficient, and sustainable. For example, the Burj Khalifa, the tallest building in the world located in Dubai, is a prime example of a large-scale infrastructure project that was designed and
constructed by Civil Engineers. On the other hand, Chemical Engineering is a branch of engineering that focuses on the production and design of chemical processes and products. Chemical Engineers are responsible for creating new materials and processes that are safe, efficient, and environmentally friendly. According to the Bureau of Labor
Statistics, employment of chemical engineers is projected to grow 2% from 2019 to 2029, making it a moderate career path for individuals interested in pursuing a career in engineering. Chemical Engineers play a crucial role in a variety of industries, including the production of food and beverages, pharmaceuticals, petrochemicals, and biofuels. A
notable example of a Chemical Engineering project is the production of biofuels, which is becoming an increasingly important source of renewable energy. Chemical Engineers are responsible for designing and optimizing the processes used to produce biofuels, which helps to reduce greenhouse gas emissions and promote sustainability. Conclusion In
conclusion, Civil Engineering and Chemical Engineering are two distinct branches of engineering that have their own unique career opportunities, challenges, and benefits. Both fields require a strong foundation in mathematics, science, and engineering principles, and individuals interested in pursuing a career in either field should have a passion for
problem-solving and a desire to make a positive impact on society.

**Which is best chemical engineering or civil engineering. Is chemical engineering harder than civil engineering. Which is better chemical or civil engineering. Is chemical engineering worth it.**