Continue

Reddit and its partners use cookies and similar technologies to provide you with a better experience. By accepting all cookies, you agree to our use of cookies to deliver and maintain our services and site, improve the quality of Reddit, personalize Reddit content and advertising, and measure the effectiveness of advertising. By rejecting non-essential 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. Reddit and its partners use cookies and similar technologies to provide you with a better experience. By accepting all cookies, you agree to our use of cookies to deliver and maintain our services and site, improve the quality of Reddit, personalize Reddit content and advertising, and measure the effectiveness of advertising. By rejecting non-essential 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. Reddit and its partners use cookies and similar technologies to provide you with a better experience. By accepting all cookies, you agree to our use of cookies to deliver and maintain our services and site, improve the quality of Reddit, personalize Reddit content and advertising, and measure the effectiveness of advertising. By rejecting non-essential 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. Mechanical engineers help design nearly every piece of technology you use in your day-to-day life. Often specializing in a subfield, mechanical engineers can explore various opportunities for professional advancement. Most entry-level jobs in this field require a mechanical engineering degree.An online mechanical engineering degree offers more benefits than just career prep. Top online programs have many advantages compared to on-campus programs, such as asynchronous courses. You may also pay a lower tuition rate than your on-campus peers.Mechanical engineers work on technological and mechanical products throughout the development life cycle. These professionals use their physics and math expertise to ensure that what they create meets all required specifications, such as safety and performance standards.A mechanical engineering degree online program trains you in subjects like systems dynamics, advanced mathematical methods for engineers, and applied experimental statistics.Foundational classes prepare you to branch out into one of mechanical engineerings many subfields, such as biotechnology, control systems, and robotics.Bureau of Labor Statistics (BLS). Masters and doctoral mechanical engineering programs can open up new career opportunities and significantly increase your salary potential. In addition to big projects, mechanical engineers can also work on small projects like nanomachines that aid with DNA analysis.Read About Our Methodology HereWe use trusted sources like Peterson's Data and the National Center for Education Statistics to inform the data for these schools. from our partners appear among these rankings and are indicated as such.#1 Best Online Mechanical Engineering Degree ProgramsTuscaloosa, AL4 yearCampus + OnlineLocated in Tuscaloosa, The University of Alabama provides a flexible, competitive education to students near and far. The school supports programs that equip students with theoretical and practical knowledge, preparing them for careers in their field of choice. Students can benefit from the collaborative nature of the master of science in mechanical engineering program, and can pursue research projects and other learning opportunities while enrolled.Degree-seekers have the option to complete the mechanical engineering program in-person or online. Leading in online education, the college supports 43 online programs. While enrolled, students benefit from academic and professional guidance through academic advising, career services, and other campus resources.The University of Alabama at a Glance:Total Academic Programs: 214Number of Online Programs: 43Admission Rate: 83%Graduation Rate: 71%Percent of Students Awarded Aid: 79%Average Amount of Aid Awarded: $9,249Percent of Students Awarded Loans: 38%Average Amount of Loans Awarded: $6,408Average Price After Aid: $20,623Average Undergrad TuitionIn-State$10,780Out-of-state$30,250In-State$10,780Out-of-state$30,250Retention Rate87%Acceptance Rate83%Students Enrolled38,100Institution TypePublicPercent Online Enrollment13%AccreditationYes More Details#2 Best Online Mechanical Engineering Degree ProgramsGrand Forks, ND4 yearCampus + OnlineUniversity of North Dakota provides diverse learning opportunities from its main campus in Grand Forks. The master of science or engineering in mechanical engineering prepares students for professional advancement through industry-relevant coursework, lectures, and projects. In the mechanical engineering program, learners benefit from rigorous coursework and opportunities to collaborate with faculty, through research and more.The mechanical engineering program accommodates both in-person and remote study. Of the school's programs, 30% allow for fully online study. In-person and remote students can access campus resources while enrolled, including career services and academic advising.University of North Dakota at a Glance:Total Academic Programs: 226Number of Online Programs: 67Admission Rate: 81%Graduation Rate: 61%Percent of Students Awarded Aid: 92%Average Amount of Aid Awarded: $5,686Percent of Students Awarded Loans: 45%Average Amount of Loans Awarded: $6,672Average Price After Aid: $15,654Average Undergrad TuitionIn-State$8,212Out-of-state$14,371In-State$10,534Out-of-state$18,434Retention Rate78%Acceptance Rate81%Students Enrolled13,581Institution TypePublicPercent Online Enrollment45%AccreditationYes More Details#3 Best Online Mechanical Engineering Degree ProgramsScottsdale , AZCampus + OnlineArizona State University Online is a Scottsdale-based college supporting academic programs in dual modalities. The college's master of science in industrial engineering provides students interested in a mechanical engineering career with a world-class education. Learners benefit from a good student-faculty ratio, with many chances to interact closely with professors.The program accommodates both in-person and remote study. The institution notes that many of its programs enable online study. In-person and remote students can access campus resources while enrolled, including career services and academic advising.As an accredited institution, ASU offers financial assistance to all eligible students, including those enrolled remotely. Prospective applicants should reach out to the financial aid office to see what funding options they might qualify for.Average Undergrad TuitionIn-StateN/AOut-of-stateN/AIn-StateN/AOut-of-stateN/ARetention RateN/AAcceptance RateN/AStudents EnrolledN/AInstitution TypePublicPercent Online EnrollmentN/AAccreditationNo More Details#4 Best Online Mechanical Engineering Degree ProgramsNorfolk, VA4 yearCampus + OnlineA public institution, Old Dominion University operates a main campus in Norfolk, Virginia. It's master of science or engineering in mechanical engineering prepares students for professional advancement through industry-relevant coursework, lectures, and projects. Students can pursue collaborative learning opportunities, such as faculty-driven research projects, to supplement their classroom experience.Enrollees seeking further opportunities for study can pursue internships or collaborate with faculty on research projects. To date, the college supports 62 online programs. Regardless of learning modality, distance learners can access institutional resources, such as career services, geared towards student success.Old Dominion University at a Glance:Total Academic Programs: 177Number of Online Programs: 62Admission Rate: 89%Graduation Rate: 53%Percent of Students Awarded Aid: 94%Average Amount of Aid Awarded: $8,021Percent of Students Awarded Loans: 56%Average Amount of Loans Awarded: $7,034Average Price After Aid: $16,681Average Undergrad TuitionIn-State$7,029Out-of-state$26,664In-State$10,207Out-of-state$29,851Retention Rate80%Acceptance Rate89%Students Enrolled23,675Institution TypePublicPercent Online Enrollment54%AccreditationYes More DetailsLearn More About Our PartnersProspective mechanical engineering majors should only consider colleges that are accredited. Institutional accreditation means a school meets set standards for academic quality.Many graduate schools and employers only recognize degrees earned from accredited schools. Whats more, you can only qualify for federal financial aid if your school is accredited.In addition to institutional accreditation, you should look for programmatic accreditation when applying to mechanical engineering programs.The best online mechanical engineering degree programs will hold ABET accreditation. This indicates that the program meets quality standards to prepare students for STEM careers.The best mechanical engineering programs feature comprehensive curricula emphasizing technical skills and knowledge. Youll take general education courses in addition to major-specific coursework.Engineering courses introduce key mechanical engineering topics. You can choose a specialization or take elective courses in a subfield of mechanical engineering as well.Here are some common courses you can expect to take for your mechanical engineering degree:Computer-aided draftingElectrical basicsElements of thermodynamicsInstrumentation and measurementsIntroduction to mechanical designMachine design analysisManufacturing processesMaterials scienceRenewable energySystems dynamic analysis and designMost people who earn a mechanical engineering degree go on to become mechanical engineers. These professionals earned an impressive median annual salary of $102,320 in May 2024, according to the BLS.How much you make as a mechanical engineer will vary depending on your experience and location. For example, mechanical engineers in New Mexico earned a median salary of $141,490 in 2024, whereas those in Arkansas earned just $78,570.Job responsibilities for mechanical engineers typically include investigating engineering problems, designing prototypes, and analyzing test results. These engineers develop products like cars, HVAC systems, and robots.You can advance your career by earning a masters in mechanical engineering or by getting licensed. A professional engineering license prepares you for leadership and advanced technical roles and allows you to sell engineering services to the public.Youll need an undergraduate mechanical engineering degree to qualify for most entry-level mechanical engineering positions. Coursework lets you explore different mechanical engineering subfields.You can specialize even further with a masters in mechanical engineering. A masters degree can qualify you for a promotion, raise, or leadership position.Both on-campus and online mechanical engineering degrees require you to take many science, technology, and advanced math classes. You may find this major challenging if you have previously struggled with these kinds of classes.In that case, concentrate your school search on programs offering a lot of academic support, such as virtual tutors.A typical bachelors in mechanical engineering degree requires four years of full-time study. You may be able to graduate sooner if you took Advanced Placement exams in high school. Other options include transferring credits and enrolling in an accelerated program.Mechanical engineering programs at the masters level last around two years. You may want to consider a part-time program if you plan to work while in school.Most mechanical engineering Ph.D. programs take 3-5 years.The typical mechanical engineer made more than double the median annual salary for all U.S. jobs in 2024, according to the BLS. However, many factors can impact your salary potential, including your experience, location, and specialization.For example, mechanical engineers specializing in scientific research and development services earned a median annual salary of over $123,080 in 2024. In contrast, those who worked in machinery manufacturing made a median salary of $96,690.Some states also offer higher wages for mechanical engineers than others. You can expect to make more as a mechanical engineer in states like New Mexico and California than in Kentucky and Montana, for instance.An on-campus or online mechanical engineering degree opens up many career paths, such as clinical technologist, project manager, and technology specialist. Other related jobs include entrepreneur and project lead.Consider your career goals when comparing online mechanical engineering degree programs. Some mechanical engineering jobs require you to specialize in a specific area. Admissions counselors can answer your questions and help you make an informed decision.Through real-world applications and rigorous core instruction, students pursuing a BS in Mechanical Engineering Technology can complete their degree entirely online and still maintain a high-quality education.If you look around you, nearly everything you use, see, hear, or feel has moving parts that you can learn to design and operate with an online degree in mechanical engineering. This engineering degree online can help open the door to many versatile career paths that will allow you to solve problems that impact our world and its future.Not only do mechanical engineers have opportunities to research and develop new devices, they have great potential to rewarded both creatively and financially for their important work.Editorial Listing ShortCode: Universities Offering Bachelors in Mechanical Engineering Programs OnlineMethodology: The following school list is in alphabetical order. To be included, a college or university must be regionally accredited and offer degree programs online or in a hybrid format.1. East Coast Polytechnic Institute UniversityAcquiring a Bachelor of Science in Mechanical Engineering Technology through East Coast Polytechnic Institute University can help open doors to a high-demand industry in as little as two and a half years.Through real-world applications and rigorous core instruction, students pursuing a BS in Mechanical Engineering Technology can complete their degree entirely online and still maintain a high-quality education.BS in Mechanical Engineering TechnologyECPI University isaccreditedby the Southern Association ofCollegesand Schools Commission onColleges.2. Indiana State UniversityIndiana State Universitys virtual Bachelor of Science in Mechanical Engineering Technology program has two main focuses. One is a mechanical aspect. This area of study teaches students about the tools, machines, and commodities needed to be successful in the field.The second area of focus is management. Management trains students to become leaders and teachers in their field.BS in Mechanical Engineering TechnologyIndiana State University is accredited by the Higher Learning Commission.3. Old Dominion UniversityAn undergraduate degree in mechanical engineering technology from Old Dominion University focuses on manufacturing systems and manufacturing designs. Students enrolled in this program will also add a concentration in engineering or science to their curriculum.This degree is thirty credit hours and can be completed using a distance learning platform.BS in Engineering Technology Mechanical Engineering TechnologyOld Dominion University is accredited by the Southern Association of Colleges and Schools Commission on Colleges.4. University of AlabamaA bachelors degree in mechanical engineering technology from the University of Alabama can lead to various employment opportunities in the field of engineering and computer science. This degree is very versatile and can be applied to product manufacturing in an array of areas, including automotive, robotics, and textiles.A BSME is available virtually at the University of Alabama.BS in Mechanical EngineeringTheUniversity of Alabamaisaccredited by the Southern Association of Colleges and Schools Commission on Colleges.5. University of Massachusetts LowellExpanding career opportunities by offering an undergraduate degree in mechanical engineering technology, the University of Massachusetts -Lowell helps to make students meet their professional and personal goals.Students who participate in this program will use comprehensive practices, advanced technology, and investigative studies to work towards becoming specialists in the field of mechanical engineering.BS in Mechanical Engineering TechnologyTheUniversity of Massachusetts Lowellisaccredited by the New England Commission of Higher Education.6. University of North DakotaThe University of North Dakota is a front-runner in STEM technology and offers a variety of courses that utilize these areas to build a new generation of industry leaders.UNDs BS in Mechanical Engineering Technology is a widely-respected program that combines hands-on learning with the latest technological innovations in design, thermal sciences, and aerospace.BS in Mechanical EngineeringThe University of North Dakota is regionally accredited bythe Higher Learning Commissionof theNorth Central Association of Colleges and Schools.Mechanical Engineering at a GlanceMechanical engineers play a crucial role in solving some of the worlds most pressing challenges, from environmental to technological.Key AspectDetailsCompetitive SalariesMedian Salary for Mechanical Engineers: $96,310 per year (Source: Bureau of Labor Statistics). Reflects the steady demand and rewarding nature of the field.Innovation at the CoreMechanical engineers lead in technological advancements, contributing significantly to fields like AI, nanotechnology, and renewable energy.Online FlexibilityOnline engineering bachelor degrees provide the flexibility to balance studies with work or other commitments, facilitating easier access to the degree.Hands-On ExperiencePrograms often include practical components such as virtual labs, internships, or capstone projects to ensure that graduates are ready for industry challenges.Specialization ChoicesOpportunities to specialize in areas like aerospace, automotive, or robotics, allowing students to tailor their education to specific interests and career goals.Pursuing an online degree in mechanical engineering isnt just about earning a credential. Its about equipping yourself with the skills and knowledge to tackle real-world challenges and contribute meaningfully to a range of exciting and evolving industries.Mechanical Engineering Careers & SalariesMechanical engineers are the vital forces powering the machinery of our modern world, often working behind the scenes to drive the technologies and industries that define our everyday lives.From the vast expanse of space to the intricate workings of biomechanical systems, the scope of this field is as broad as your ambitions.Versatile Career Paths for Mechanical EngineersMechanical engineers are the unsung heroes behind many of the technologies and industries that keep our world running.Heres a glimpse at where you can make your mark:Aerospace: Soar high by developing aircraft and spacecraft, pushing the boundaries of exploration.Robotics: Shape the future with intelligent machines capable of performing complex tasks.Computers: Innovate in hardware and software development, driving the digital age forward.Petroleum Engineering: Innovate in the extraction and processing of oil and gas, driving energy solutions.Energy Systems: Be at the forefront of developing sustainable and efficient energy solutions.Automotive Engineering: Design the next generation of vehicles, from everyday cars to high-performance machines.Nuclear Engineering: Harness the power of the atom to provide clean, safe energy.Defense Manufacturing: Contribute to national security through the design of advanced defense systems.Waste Management: Revolutionize how we reduce, reuse, and recycle, turning waste into resources.Machinery Manufacturing: Create the machines that build our world, from small components to large-scale equipment.Biomechanical Systems and Dynamics: Blend engineering with biology to improve health and medical technologies.According to the Bureau of Labor Statistics (BLS), mechanical engineers enjoy a median annual wage of $96,310 per year. If youre aiming for higher-paying roles or a position in management, an advanced degree may be a key stepping stone.Lets dive into some job categories and their average salaries to give you a taste of what lies ahead in this exciting field.CareersAnnual Median SalaryPetroleum Engineers$131,800Aerospace Engineers$126,880Construction Managers$101,480Biomedical Engineers$99,550Manufacturing Engineers$96,350Mechanical Engineers$96,310Project Management Specialists$95,370Management Consultants$95,290Based on data from the Bureau of Labor Statistics, the mechanical engineering sector is on an upward trajectory, with an expected growth rate of 10% from 2022 through 2032. Mechanical Engineering Online CoursesEach university creates its own path to graduation, but most of them have a similar curriculum. In your online studies, expect to find the following:Calculus: Calculus is a math class that teaches students how to find and apply information about the changes between values that have the same function.Physics: Physics is a science class that focuses on the mechanics and composition of matter and energy and includes information about heat, light, sound, atomic structure, electricity and magnetism.Chemistry: This course covers atomic and molecular structures, principles of compound formation, and chemical reactivity.Computer-Aided Design (often includes lab): Introduces engineering graphics and modeling tools engineers use to create drawings of parts and assemblies.Engineering Statics: This course is designed to help students learn to analyze how forces are distributed within bodies and begin learning about material strengths.Electrical Engineering: A series of courses that explains all aspects of electrical circuitry, including operations, theorems, and responses and how power, energy, and phasors relate to circuit design.Materials: A series of classes that build on each other to help students understand the various structures and properties of metals, ceramics, polymers and composites.Thermodynamics: Thermodynamics is a branch of physics concerned with the heat and temperature of solids, liquids, gases and mixtures and their relation to energy.Fluid Dynamics: This course explains the physical principles related to the movement of liquids and gases.Senior Design: This capstone course is designed to allow students to practice performing the functions they will use when they are practicing mechanical engineers.These courses build on the foundation you may have received in an associates in mechanical engineering.As you can see, in freshman and sophomore years, students typically gain the necessary tools and take similar classes that are found in an online bachelors in chemical engineering or civil engineering degree program. In junior and senior years, coursework usually zeroes in on more advanced areas. Courses build on each other as you learn new concepts, skills and principles that require understanding of what you learned in the previous course.The final degree component is the mechanical engineering core that will likely include classes that provide a solid foundation for many career paths. These may include Engineering Principals, Materials Science (molecular and atomic structures), Thermodynamics (the pressure, density and temperature of heat), Fluid Dynamics and Transfers (how heat, liquids and gasses move).The specialization you choose affects not only what classes you take during your education, but also what skills you develop and, in turn, what career options may be open to you after you graduate. Other core courses may include Statics (how forces impact immobile bodies), Dynamics (how various forces affect bodies in motion), Analysis of Structures and Mechanical Designs, plus classes in Circuits, Electronics, Instrumentation, and Vibrations.In addition to foundational courses, many colleges also offer electives to better prepare students to succeed in specialty mechanical engineering fields such as aerospace, transportation or the environment. Senior design projects or internships may also provide hands-on experience.Choosing an Engineering Bachelor ProgramThere are many factors to consider when choosing your online mechanical engineering program. In your search for the best fit, you want to select a program that:Offers you all the basic courses that employers will look for when hiring entry-level positionsHas classes in all the specialty fields you are thinking aboutEmploys qualified and notable faculty who will be able to teach you the most-up-to-date curriculumProvides opportunities for independent research and discoveryGives you a chance to demonstrate your new knowledge and skills by designing and creating actual productsGrants credit for internships or other opportunities for hands-on trainingHas financial aid, scholarship and work-study opportunitiesIncludes academic support services such as academic advisement and tutoringHas an active alumni network that will help you in your job searchThese are just a few of the factors that you should consider when making this important decision. It might help to create your own chart that ranks these factors according to which are most important to you. Then fill in the chart for each online degree program you are considering.Admissions RequirementsIn order to get accepted into a degree program, either a high school diploma or a General Education Diploma (GED) are most often a compulsory requirement. Beyond that, schools vary widely on other qualifications, but may include:Official transcripts for all previous academic workA minimum grade point average (GPA) that will vary by institutionCompletion of basic math courses such as geometry, trigonometry, statistics, algebra and calculusCompletion of basic science courses such as physics, chemistry and biologyAttainment of certain grades in key prerequisite coursesSome schools may require recent SAT or ACT scores (and possibly SAT Subject tests)English proficiency for foreign applicantsThe Free Application for Federal Student Aid (FAFSA) form that is required for financial aidRemember to read the specific admission requirements for each institution you might want to attend. They are all different and have different deadlines you do not want to miss.AccreditationRegional accrediting organizations assure that programs meet acceptable quality standards in such areas as faculty, facilities, and curriculum. They create evaluation criteria and personally inspect institutions to determine whether those criteria are met. Those that pass are accredited.In addition to general accreditation, institutions with engineering programs may also seek accreditation from a professional organization called the Accreditation Board for Engineering and Technology (ABET).ABET evaluates and approves collegiate programs that effectively prepare students to succeed. ABET accreditation is an important indication that the program provides students with a thorough learning experience.Financial Aid and ScholarshipsEveryone knows that college is pricey. Many students are overwhelmed and intimidated by the process that lets them know about financial aid and/or scholarships. Fortunately, the federal government is posting an online, interactive Free Application for Financial Aid Form (FAFSA) to assist you.You will be well served by conducting a thorough online search for available state, institutional, work-study, loans and private and nonprofit grants and scholarships. Many colleges review FAFSA applications when they review aid applications. Be sure to meet all deadlines.Whether you planned ahead with a college savings or not, you can learn more about financial aid and scholarships, StudentAid.gov is a good place to begin.What Can You Do With a Mechanical Engineering Degree?Your mechanical engineering degree can help you obtain the expertise to know how things work. What could be more practical?Your degree can help you pursue work in a wide variety of engineering jobs, including aerospace, energy, transportation, electronics, materials and construction. It is very versatile and typically leads to high-paying jobs in disciplines with high career satisfaction.The Bureau of Labor Statistics reports that the median annual wage for mechanical engineers is $96,310 and also projects annual job growth of 10% for 2022 to 2032.How Much Does an Online Bachelors in Mechanical Engineering Cost?Tuition costs vary depending on whether you will be attending attend public or private college and whether you are a resident of the state in which your college is located. Many, but not all institutions, charge more for out-of-state students.Also, there may be additional fees so be sure to read tuition descriptions carefully. While things change very rapidly, tuition currently ranges from about $210 to $410 per unit. The total tuition for four years will likely be between $26,000 and $51,000, but remember that financial aid, work-study and scholarships are designed to defray the cost of attending.How Long Does It Take to Get an Online Bachelors in Mechanical Engineering?Your time to graduation will depend on whether you become a full-time or part-time student. Most online programs require between 120 and 127 units for graduation.Since the majority of courses grant three to four units, it should take four years to graduate if you take a full load of 15 units per 16-week semester at institutions that are on a semester program. You will enroll in fewer units at institutions that are on the quarter system.Also, credits may be earned in summer school, so if you attend year-round, you can speed up your time to graduation.Is Mechanical Engineering a Good Major?Yes, many find a mechanical engineering major to be personally and financially rewarding. Your studies can lead you to a career in nearly every field where engineers are active. And that includes designing, creating and implementing a huge range of products and systems.Mechanical engineers invent new and better products, improve delivery systems, create better energy systems, solve environmental problems and help us explore the potential of outer space.They have had a hand in developing every household or business device with moving parts. And most mechanical engineers reap both financial and personal rewards.Can You Become a Mechanical Engineer Online?Yes, you can become a mechanical engineer by completing an online degree program. Online education has become increasingly popular and accessible, and many universities now offer online bachelors and masters degree programs in mechanical engineering.After completing an online degree, you will still need to meet any additional licensure requirements in your country or region, especially if you wish to become a Professional Engineer (PE). Continuous learning and staying updated with advancements in the field are also important in this rapidly evolving discipline.What Degree Do You Need to Be A Mechanical Engineer?A bachelors degree in Mechanical Engineering is a baseline requirement for entry-level jobs. In addition, all states require mechanical engineers to be licensed. You can apply for a license if you graduate from an ABET-accredited engineering college.You will also be required to pass a national exam offered by the National Council of Examiners for Engineering and Surveying. When you have been practicing for four years, you can take an additional exam to become a Professional Engineer.If you want to advance in your profession and earn higher pay, in most cases you will want to pursue a graduate degree.Is a Degree in Mechanical Engineering Worth It?Yes, a degree in mechanical engineering is worth it for many students. According to the U.S. Bureau of Labor Statistics, this sector has an expected growth rate of 10% for 2022 to 2032. Some careers in this field include petroleum engineering, energy systems, defense manufacturing, robots, and dozens of other related sectors.Depending on the subspecialty you select, you can work in a team environment where you can solve real-world problems and use your education and creativity to make a genuine difference.Although you may be concerned with the financial benefits of your degree, it is just as important to make a career choice based on your interests and passions.Mechanical engineers have been involved in the research, development and implementation of practically any machine or system you can imagine. And they are imagining more of them each day to improve our quality of life and solve our global problems.Next StepsAn online mechanical engineering degree may be a great investment in your professional and financial futures. If you have always been interested in how things work and what machines and systems can do, this career can give you the chance to learn, create, and achieve.In this versatile field, you can invent and improve products and systems, solve environmental problems, improve transportation, and even explore new worlds.You will need to work hard to get this degree and take classes that both inform and challenge you. But your diligence should pay off as you gain entry into a respected lucrative, expanding profession. Can I Get a Mechanical Engineering Degree Online? The rise of online education has opened up new opportunities for individuals to pursue higher education in various fields, including engineering. One common question that arises is whether it is possible to get a mechanical engineering degree online. In this article, we will explore the possibilities and limitations of pursuing a mechanical engineering degree online. Can I Get a Mechanical Engineering Degree Online? The answer is yes, it is possible to get a mechanical engineering degree online. Many institutions now offer online mechanical engineering programs, which can be completed entirely online or through a blend of online and on-campus learning. These programs are designed to be flexible and convenient, allowing students to complete their studies from anywhere in the world. Benefits of Online Mechanical Engineering Programs There are several benefits to pursuing a mechanical engineering degree online, including: Flexibility: Online programs offer the flexibility to complete coursework on your own schedule, allowing you to balance work, family, or other responsibilities. Cost-effectiveness: Online programs are often less expensive than traditional on-campus programs, with reduced tuition fees and transportation costs. Access to a wider range of programs: Online programs offer access to a wider range of programs and institutions, including those that may not have on-campus programs. Self-paced learning: Online programs allow you to learn at your own pace, which can be beneficial for those who learn quickly or need more time to grasp complex concepts. Types of Online Mechanical Engineering Programs There are several types of online mechanical engineering programs available, including: Associates degrees: These programs typically take two years to complete and provide foundational knowledge in mechanical engineering principles and concepts. Bachelors degrees: These programs typically take four years to complete and provide advanced knowledge in mechanical engineering, including theory and practical applications. Masters degrees: These programs typically take two to three years to complete and provide advanced knowledge in a specific area of mechanical engineering, such as mechanical design or robotics. Certificate programs: These programs provide specialized training in a specific area of mechanical engineering, such as energy systems or mechanical design. Is an Online Mechanical Engineering Degree Accreditable? Another common question is whether an online mechanical engineering degree is accreditable. The answer is yes, many online mechanical engineering programs are accredited by accrediting agencies, such as the Accreditation Board for Engineering and Technology (ABET). Accreditation and Licensure Accreditation is important for several reasons: Employment: Employers often require or prefer to hire graduates from accredited programs. Licensure: A degree from an accredited program is required for licensure in many states, including California, which has some of the strictest requirements in the country. What to Look for in an Online Mechanical Engineering Program When searching for an online mechanical engineering program, consider the following: Accreditation: Look for programs accredited by ABET or the Technology Accreditation Commission of TEE (TAC) of the Accreditation Board for Engineering and Technology (ABET). Curriculum: Ensure the program aligns with your career goals and provides a balanced blend of theoretical and practical knowledge. Faculty: Look for experienced faculty with industry experience and a strong reputation in the field. Career services: Consider programs that offer career services, such as resume building, interview preparation, and job placement assistance. Technical requirements: Ensure your computer and software meet the programs technical requirements. Conclusion Pursuing a mechanical engineering degree online is a viable option, with many benefits and opportunities. By understanding the types of online programs available, accreditation, and what to look for in a program, you can make an informed decision about your educational path. Remember to research thoroughly, and dont hesitate to reach out to institutions or program administrators with questions. Additional Resources National Society of Professional Engineers (NSPE) Accreditation Board for Engineering and Technology (ABET) Technology Accreditation Commission of TEE (TAC) of the Accreditation Board for Engineering and Technology (ABET) Table 1: Online Mechanical Engineering Programs Program Duration Degree Level Accreditation Tuition FeeProgram A 2 years Associates ABET $10,000Program B 4 years Bachelors TAC $20,000Program C 2-3 years Masters ABET $15,000Program D 1 year Certificate TAC $5,000 Table 2: Accreditation vs. Licensure Requirements State Accreditation Licensure RequirementsCalifornia ABET PE exam and 8,000 hours of experienceNew York ABET FE exam and 8,000 hours of experienceTexas TAC PE exam and 8,000 hours of experience Note: The above tables are for illustration purposes only and may not reflect actual programs or requirements. Your friends have asked us these questions - Check out the answers! Reddit and its partners use cookies and similar technologies to provide you with a better experience. By accepting all cookies, you agree to our use of cookies to deliver and maintain our services and site, improve the quality of Reddit, personalize Reddit content and advertising, and measure the effectiveness of advertising. By rejecting non-essential 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. Reddit and its partners use cookies and similar technologies to provide you with a better experience. By accepting all cookies, you agree to our use of cookies to deliver and maintain our services and site, improve the quality of Reddit, personalize Reddit content and advertising, and measure the effectiveness of advertising. By rejecting non-essential 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. Share copy and redistribute the material in any medium or format for any purpose, even commercially. Adapt remix, transform, and build upon the material for any purpose, even commercially. The licensor cannot revoke these freedoms as long as you follow the license terms. Attribution You must give appropriate credit , provide a link to the license, and indicate if changes were made . You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use. ShareAlike If you remix, transform, or build upon the material, you must distribute your contributions under the same license as the original. No additional restrictions You may not apply legal terms or technological measures that legally restrict others from doing anything the license permits. You do not have to comply with the license for elements of the material in the public domain or where your use is permitted by an applicable exception or limitation . No warranties are given. The license may not give you all of the permissions necessary for your intended use. For example, other rights such as publicity, privacy, or moral rights may limit how you use the material. Engineering discipline Various machine components used in mechanical engineeringMechanical engineering is the study of physical machines and mechanisms that may involve force and movement. It is an engineering branch that combines engineering physics and mathematics principles with materials science, to design, analyze, manufacture, and maintain mechanical systems.[1] It is one of the oldest and broadest of the engineering branches.Mechanical engineering requires an understanding of core areas including mechanics, dynamics, thermodynamics, materials science, design, structural analysis, and electricity. In addition to these core principles, mechanical engineers use tools such as computer-aided design (CAD), computer-aided manufacturing (CAM), computer-aided engineering (CAE), and product lifecycle management to design and analyze manufacturing plants, industrial equipment and machinery, heating and cooling systems, transport systems, motor vehicles, aircraft, watercraft, robotics, medical devices, weapons, and others.[2][3]Mechanical engineering emerged as a field during the Industrial Revolution in Europe in the 18th century; however, its development can be traced back several thousand years around the world. In the 19th century, developments in physics led to the development of mechanical engineering science. The field has continually evolved to incorporate advancements; today mechanical engineers are pursuing developments in such areas as composites, mechatronics, and nanotechnology. It also overlaps with aerospace engineering, metallurgical engineering, civil engineering, structural engineering, electrical engineering, manufacturing engineering, chemical engineering, industrial engineering, and other engineering disciplines to varying amounts. Mechanical engineers may also work in the field of biomedical engineering, specifically with biomechanics, transport phenomena, biomechatronics, bionanotechnology, and modelling of biological systems.Main article: History of mechanical engineeringThe application of mechanical engineering can be seen in the archives of various ancient and medieval societies. The six classic simple machines were known in the ancient Near East. The wedge and the inclined plane (ramp) were known since prehistoric times.[4] Mesopotamian civilization is credited with the invention of the wheel by several, mainly old sources.[5][6][7] However, some recent sources either suggest that it was invented independently in both Mesopotamia and Eastern Europe or credit prehistoric Eastern Europeans with the invention of the wheel[8][9][10][11] The lever mechanism first appeared around 5,000 years ago in the Near East, where it was used in a simple balance scale,[12] and to move large objects in ancient Egyptian technology.[13] The lever was also used in the shadoof water-lifting device, the first crane machine, which appeared in Mesopotamia circa 3000 BC.[12] The earliest evidence of pulleys date back to Mesopotamia in the early 2nd millennium BC.[14]The Saqiyah was developed in the Kingdom of Kush during the 4th century BC. It relied on animal power reducing the tow on the requirement of human energy.[15] Reservoirs in the form of Hafirs were developed in Kush to store water and boost irrigation.[16] Bloomeries and blast furnaces were developed during the seventh century BC in Meroe.[17][18][19][20] Kushite sundials applied mathematics in the form of advanced trigonometry.[21][22]The earliest practical water-powered machines, the water wheel and watermill, first appeared in the Persian Empire, in what are now Iraq and Iran, by the early 4th century BC.[23] In ancient Greece, the works of Archimedes (287212 BC) influenced mechanics in the Western tradition. The geared Antikythera mechanisms was an Analog computer invented around the 2nd century BC.[24]In Roman Egypt, Heron of Alexandria (c. 1070 AD) created the first steam-powered device (Aeolipile).[25] In China, Zhang Heng (78139 AD) improved a water clock and invented a seismometer, and Ma Jun (200265 AD) invented a chariot with differential gears. The medieval Chinese horologist and engineer Su Song (10201101 AD) incorporated an escapement mechanism into his astronomical clock tower two centuries before escapement devices were found in medieval European clocks. He also invented the world's first known endless power-transmitting chain drive.[26]The cotton gin was invented in India by the 6th century AD,[27] and the spinning wheel was invented in the Islamic world by the early 11th century,[28] Dual-roller gins appeared in India and China between the 12th and 14th centuries.[29] The worm gear roller gin appeared in the Indian subcontinent during the early Delhi Sultanate era of the 13th to 14th centuries.[30]During the Islamic Golden Age (7th to 15th century), Muslim inventors made remarkable contributions in the field of mechanical technology. Al-Jazari, who was one of them, wrote his famous Book of Knowledge of Ingenious Mechanical Devices in 1206 and presented many mechanical designs.[citation needed]In the 17th century, important breakthroughs in the foundations of mechanical engineering occurred in England and the Continent. The Dutch mathematician and physicist Christiaan Huygens invented the pendulum clock in 1657, which was the first reliable timekeeper for almost 300 years, and published a work dedicated to clock designs and the theory behind them.[31][32] In England, Isaac Newton formulated his laws of motion and developed calculus, which would become the mathematical basis of physics. Newton was reluctant to publish his works for years, but he was finally persuaded to do so by his colleagues, such as Edmond Halley. Gottfried Wilhelm Leibniz, who earlier designed a mechanical calculator, is also credited with developing the calculus during the same time period.[33]During the early 19th century Industrial Revolution, machine tools were developed in England, Germany, and Scotland. This allowed mechanical engineering to develop as a separate field within engineering. They brought with them manufacturing machines and the engines to power them.[34] The first British professional society of mechanical engineers was formed in 1847 Institution of Mechanical Engineers, thirty years after the civil engineers formed the first such professional society Institution of Civil Engineers.[35] On the European continent, Johann von Zimmermann (18201901) founded the first factory for grinding machines in Chemnitz, Germany in 1848.[citation needed]In the United States, the American Society of Mechanical Engineers (ASME) was formed in 1880, becoming the third such professional engineering society, after the American Society of Civil Engineers (1852) and the American Institute of Mining Engineers (1871).[36] The first schools in the United States to offer an engineering education were the United States Military Academy in 1817, an institution now known as Norwich University in 1819, and Rensselaer Polytechnic Institute in 1825. Education in mechanical engineering has historically been based on a strong foundation in mathematics and science.[37]A mechanical engineering teaching lab at Ohio State University, c.1900Degrees in mechanical engineering are offered at various universities worldwide. Mechanical engineering programs typically take four to five years of study depending on the place and university and result in a Bachelor of Engineering (B.Eng. or B.E.), Bachelor of Science (B.Sc. or B.S.), Bachelor of Science Engineering (B.Sc.Eng.), Bachelor of Technology (B.Tech.), Bachelor of Mechanical Engineering (B.M.E.), or Bachelor of Applied Science (B.A.Sc.) degree, in or with emphasis in mechanical engineering. In Spain, Portugal and most of South America, where neither B.S. nor B.Tech. programs have been adopted, the formal name for the degree is "Mechanical Engineer", and the course work is based on five or six years of training. In Italy the course work is based on five years of education, and training, but in order to qualify as an Engineer one has to pass a state exam at the end of the course. In Greece, the coursework is based on a five-year curriculum.[38]In the United States, most undergraduate mechanical engineering programs are accredited by the Accreditation Board for Engineering and Technology (ABET) to ensure similar course requirements and standards among universities. The ABET web site lists 302 accredited mechanical engineering programs as of 11 March 2014.[39] Mechanical engineering programs in Canada are accredited by the Canadian Engineering Accreditation Board (CEAB),[40] and most other countries offering engineering degrees have similar accreditation societies.In Australia, mechanical engineering degrees are awarded as Bachelor of Engineering (Mechanical) or similar nomenclature, although there are an increasing number of specialisations. The degree takes four years of full-time study to achieve. To ensure quality in engineering degrees, Engineers Australia accredits engineering degrees awarded by Australian universities in accordance with the global Washington Accord. Before the degree can be awarded, the student must complete at least 3 months of on the job work experience in an engineering firm.[41] Similar systems are also present in South Africa and are overseen by the Engineering Council of South Africa (ECSA).In India, to become an engineer, one needs to have an engineering degree like a B.Tech. or B.E., have a diploma in engineering, or by completing a course in an engineering trade like fitter from the Industrial Training Institute (ITIs) to receive a "ITI Trade Certificate" and also pass the All India Trade Test (AITT) with an engineering trade conducted by the National Council of Vocational Training (NCVT) by which one is awarded a "National Trade Certificate". A similar system is used in Nepal.[42]Some mechanical engineers go on to pursue a postg

Aviation among an increasingly growing pool of uses.[65][66][67]Composite cloth consisting of woven carbon fiberMain article: Composite materialComposites or composite materials are a combination of materials which provide different physical characteristics than either material separately. Composite material research within mechanical engineering typically focuses on designing (and, subsequently, finding applications for) stronger or more rigid materials while attempting to reduce weight, susceptibility to corrosion, and other undesirable factors. Carbon fiber reinforced composites, for instance, have been used in such diverse applications as spacecraft and fishing rods.Mechatronics is the synergistic combination of mechanical engineering, electronic engineering, and software engineering. The discipline of mechatronics began as a way to combine mechanical principles with electrical engineering. Mechatronic concepts are used in the majority of electro-mechanical systems.[68] Typical electro-mechanical sensors used in mechatronics are strain gauges, thermocouples, and pressure transducers.Main article: NanotechnologyAt the smallest scales, mechanical engineering becomes nanotechnologyone speculative goal of which is to create a molecular assembler to build molecules and materials via mechanosynthesis. For now that goal remains within exploratory engineering. Areas of current mechanical engineering research in nanotechnology include nanofilters,[69] nanofilms,[70] and nanostructures,[71] among others.See also: PicotechnologyMain article: Finite element analysisFinite Element Analysis is a computational tool used to estimate stress, strain, and deflection of solid bodies. It uses a mesh setup with user-defined sizes to measure physical quantities at a node. The more nodes there are, the higher the precision.[72] This field is not new, as the basis of Finite Element Analysis (FEA) or Finite Element Method (FEM) dates back to 1941. But the evolution of computers has made FEA/FEM a viable option for analysis of structural problems. Many commercial software applications such as NASTRAN, ANSYS, and ABAQUS are widely used in industry for research and the design of components. Some 3D modeling and CAD software packages have added FEA modules. In the recent times, cloud simulation platforms like SimScale are becoming more common.Other techniques such as finite difference method (FDM) and finite-volume method (FVM) are employed to solve problems relating heat and mass transfer, fluid flows, fluid surface interaction, etc.Main article: BiomechanicsBiomechanics is the application of mechanical principles to biological systems, such as humans, animals, plants, organs, and cells.[73] Biomechanics also aids in creating prosthetic limbs and artificial organs for humans.[74] Biomechanics is closely related to engineering, because it often uses traditional engineering sciences to analyze biological systems. Some simple applications of Newtonian mechanics and/or materials sciences can supply correct approximations to the mechanics of many biological systems.In the past decade, reverse engineering of materials found in nature such as bone matter has gained funding in academia. The structure of bone matter is optimized for its purpose of bearing a large amount of compressive stress per unit weight.[75] The goal is to replace crude steel with bio-material for structural design.Over the past decade the Finite element method (FEM) has also entered the Biomedical sector highlighting further engineering aspects of Biomechanics. FEM has since then established itself as an alternative to in vivo surgical assessment and gained the wide acceptance of academia. The main advantage of Computational Biomechanics lies in its ability to determine the endo-anatomical response of an anatomy, without being subject to ethical restrictions.[76] This has led FE modelling to the point of becoming ubiquitous in several fields of Biomechanics while several projects have even adopted an open source philosophy (e.g. BioSpine).Main article: Computational fluid dynamicsComputational fluid dynamics, usually abbreviated as CFD, is a branch of fluid mechanics that uses numerical methods and algorithms to solve and analyze problems that involve fluid flows. Computers are used to perform the calculations required to simulate the interaction of liquids and gases with surfaces defined by boundary conditions.[77] With high-speed supercomputers, better solutions can be achieved. Ongoing research yields software that improves the accuracy and speed of complex simulation scenarios such as turbulent flows. Initial validation of such software is performed using a wind tunnel with the final validation coming in full-scale testing, e.g. flight tests.Main article: Acoustical engineeringAcoustical engineering is one of many other sub-disciplines of mechanical engineering and is the application of acoustics. Acoustical engineering is the study of Sound and Vibration. These engineers work effectively to reduce noise pollution in mechanical devices and in buildings by soundproofing or removing sources of unwanted noise. The study of acoustics can range from designing a more efficient hearing aid, microphone, headphone, or recording studio to enhancing the sound quality of an orchestra hall. Acoustical engineering also deals with the vibration of different mechanical systems.[78]Manufacturing engineering, aerospace engineering, automotive engineering and marine engineering are grouped with mechanical engineering at times. A bachelor's degree in these areas will typically have a difference of a few specialized classes.Engineering portalAutomobile engineeringIndex of mechanical engineering articlesListsGlossary of mechanical engineeringList of historic mechanical engineering landmarksList of inventorsList of mechanical engineering topicsList of mechanical engineersList of related journalsList of mechanical, electrical and electronic equipment manufacturing companies by revenueAssociationsAmerican Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)American Society of Mechanical Engineers (ASME)Pi Tau Sigma (Mechanical Engineering honor society)Society of Automotive Engineers (SAE)Society of Women Engineers (SWE)Institution of Mechanical Engineers (IMechE) (British)Chartered Institution of Building Services Engineers (CIBSE) (British)Verein Deutscher Ingenieure (VDI) (Germany)WikibooksEngineering MechanicsEngineering ThermodynamicsEngineering AcousticsFluid MechanicsHeat TransferMicrotechnologyNanotechnologyPro/Engineer (ProE CAD)Strength of Materials/Solid Mechanics^ "What is Mechanical Engineering?". 28 December 2018.^ "mechanical engineering". The American Heritage Dictionary of the English Language (Fourthed.). Retrieved 19 September 2014.^ "mechanical engineering". Merriam-Webster Dictionary. Retrieved 19 September 2014.^ Moorey, Peter Roger Stuart (1999). Ancient Mesopotamian Materials and Industries: The Archaeological Evidence. Eisenbrauns. ISBN9781575060422.^ Transportation. BPI. p.4. ISBN9788184972436. Archived from the original on 22 March 2023. Retrieved 9 January 2021.^ Mitchell Lewis Ditkoff (May 2008). Awake at the Wheel: Getting Your Great Ideas Rolling (in an Uphill World). Morgan James Publishing. p.15. ISBN9781600377709.^ Y C Chiu (2010). An Introduction to the History of Project Management: From the Earliest Times to A.D. 1900. Eburon. p.24. ISBN9789059724372.^ Schier, Wolfram (2015). "Chapter 5: Central and Eastern Europe". In Fowler, Chris; Harding, Jan; Hofmann, Daniela (eds.). The Oxford Handbook of Neolithic Europe. OUP Oxford. p.113. ISBN978-0-19-954584-1.^ Weil, David (3 June 2016). Economic Growth - David Weil - Google Books. Routledge. ISBN9781315510446. Archived from the original on 22 March 2023. Retrieved 21 March 2023.^ Bulliet, Richard W. (19 January 2016). The Wheel Inventions and Reinventions By Richard W. Bulliet page 98 (a BA and a PhD from Harvard university). Columbia University Press. ISBN9780231540612. Archived from the original on 22 March 2023. Retrieved 21 March 2023.^ Man and Wound in the Ancient World A History of Military Medicine from Sumer to the Fall of Constantinople By Richard A. Gabriel 65 page^ a b Paipetis, S. A.; Ceccarelli, Marco (2010). The Genius of Archimedes -- 23 Centuries of Influence on Mathematics, Science and Engineering: Proceedings of an International Conference held at Syracuse, Italy, June 8-10, 2010. Springer Science & Business Media. p.416. ISBN9789048190911.^ Clarke, Somers; Engelbach, Reginald (1990). Ancient Egyptian Construction and Architecture. Courier Corporation. pp.8690. ISBN9780486264851.^ Moorey, Peter Roger Stuart (1999). Ancient Mesopotamian Materials and Industries: The Archaeological Evidence. Eisenbrauns. p.4. ISBN9781575060422.^ G. Mokhtar (1 January 1981). Ancient civilizations of Africa. Unesco. International Scientific Committee for the Drafting of a General History of Africa. p.309. ISBN9780435948054. Retrieved 19 June 2012 via Books.google.com.^ Fritz Hintze, Kush XI; pp. 222-224.^ Humphris, Jane; Charlton, Michael F.; Keen, Jake; Sauder, Lee; Alshishani, Fareed (2018). "Iron Smelting in Sudan: Experimental Archaeology at The Royal City of Meroe". Journal of Field Archaeology. 43 (5): 399. doi:10.1080/00934690.2018.1479085. ISSN0093-4690.^ Collins, Robert O.; Burns, James M. (8 February 2007). A History of Sub-Saharan Africa. Cambridge University Press. ISBN9780521867467 via Google Books.^ Edwards, David N. (29 July 2004). The Nubian Past: An Archaeology of the Sudan. Taylor & Francis. ISBN9780203482766 via Google Books.^ Humphris J, Charlton MF, Keen J, Sauder L, Alshishani F (June 2018). "Iron Smelting in Sudan: Experimental Archaeology at The Royal City of Meroe". Journal of Field Archaeology. 43 (5): 399416. doi:10.1080/00934690.2018.1479085.^ Depuydt, Leo (1 January 1998). "Gnomons at Mero and Early Trigonometry". The Journal of Egyptian Archaeology. 84: 171180. doi:10.2307/3822211. JSTOR3822211.^ Slayman, Andrew (27 May 1998). "Neolithic Skywatchers". Archaeology Magazine Archive. Archived from the original on 5 June 2011. Retrieved 17 April 2011.^ Selin, Helaine (2013). Encyclopaedia of the History of Science, Technology, and Medicine in Non-Westen Cultures. Springer Science & Business Media. p.282. ISBN9789401714167.^ Efstathiou, Kyriakos; Efstathiou, Marianna (1 September 2018). "Celestial Gearbox: Oldest Known Computer is a Mechanism Designed to Calculate the Location of the Sun, Moon, and Planets". Mechanical Engineering. 140 (9): 3135. doi:10.1115/1.2018-SEP1. ISSN0025-6501.^ "Heron of Alexandria". Encyclopdia Britannica 2010. Retrieved 9 May 2010.^ Needham, Joseph (1986). Science and Civilization in China: Volume 4. Taipei: Caves Books, Ltd.^ Lakwete, Angela (2003). Inventing the Cotton Gin: Machine and Myth in Antebellum America. Baltimore: The Johns Hopkins University Press. pp.16. ISBN9780801873942.^ Pacey, Arnold (1991) [1990]. Technology in World Civilization: A Thousand-Year History (First MIT Press paperbacked.). Cambridge MA: The MIT Press. pp.2324.^ Baber, Zaheer (1996). The Science of Empire: Scientific Knowledge, Civilization, and Colonial Rule in India. Albany: State University of New York Press. p. 57. ISBN0-7914-2919-9.^ Irfan Habib (2011), Economic History of Medieval India, 12001500, p. 53, Pearson Education^ Marconell, M.H. (1996). Christiaan Huygens: a foreign inventor in the Court of Louis XIV, his role as a forerunner of mechanical engineering (Ph.D. thesis). The Open University.^ Yoder, J. G. (1996). "Following in the footsteps of geometry: The mathematical world of Christiaan Huygens". DBNL. Retrieved 30 August 2021.^ Sayeed, Ahmed (24 September 2019). You Could Be the Winner (Volume - II). Sankalp Publication. ISBN978-93-88660-66-2.^ "Engineering". Encyclopdia Britannica. Retrieved 6 May 2008.^ Buchanan, R.A. (February 1985). "Institutional Proliferation in the British Engineering Profession, 18471914". The Economic History Review. New Series. 38 (1): 4260. doi:10.1111/j.1468-0289.1985.tb00357.x.^ ASME history Archived 23 February 2011 at Wikiwix. Retrieved 6 May 2008.^ The Columbia Encyclopedia, Sixth Edition. 2001, engineering. Retrieved 6 May 2008.^ Sayeed, Ahmed (24 September 2019). You Could Be the Winner (Volume - II). Sankalp Publication. ISBN978-93-88660-66-2.^ ABET searchable database of accredited engineering programs. Retrieved 11 March 2014.^ Accredited engineering programs in Canada by the Canadian Council of Professional Engineers Archived 10 May 2007 at the Wayback Machine. Retrieved 18 April 2007.^ "Mechanical Engineering". Archived from the original on 28 November 2011. Retrieved 8 December 2011.^ Sayeed, Ahmed (24 September 2019). You Could Be the Winner (Volume - II). Sankalp Publication. ISBN978-93-88660-66-2.^ Types of post-graduate degrees offered at MIT Archived 16 June 2006 at the Wayback Machine - Accessed 19 June 2006.^ 2008-2009 ABET Criteria Archived 28 February 2008 at the Wayback Machine, p. 15.^ University of Tulsa Required ME Courses Undergraduate Majors and Minors Archived 4 August 2012 at archive.today. Department of Mechanical Engineering, University of Tulsa, 2010. Retrieved 17 December 2010.^ Harvard Mechanical Engineering Page Archived 21 March 2007 at the Wayback Machine. Harvard.edu. Retrieved 19 June 2006.^ Mechanical Engineering courses, MIT. Retrieved 14 June 2008.^ "Future Work Skills 2020". Archived from the original on 4 November 2011. Retrieved 5 November 2012.. Apollo Research Institute, Future Work Skills 2020. Retrieved 5 November 2012.^ "Why do we need creativity and innovation in higher education? | Aalto Design Factory". Archived from the original on 16 November 2012. Retrieved 5 November 2012. Aalto University School of Engineering, Design Factory Researchers Blog. Retrieved 5 November 2012.^ Sayeed, Ahmed (24 September 2019). You Could Be the Winner (Volume - II). Sankalp Publication. ISBN978-93-88660-66-2.^ "Why Get Licensed?". National Society of Professional Engineers. Retrieved 6 May 2008.^ "Engineers Act". Quebec Statutes and Regulations (CanLII). Archived from the original on 5 October 2006. Retrieved 24 July 2005.^ "Codes of Ethics and Conduct". Online Ethics Center. Archived from the original on 19 June 2005. Retrieved 24 July 2005.^ "May 2015 National Occupational Employment and Wage Estimates". U.S. Department of Labor, Bureau of Labor Statistics. Retrieved 3 March 2017.^ Occupational Employment and Wages, 17-2141 Mechanical Engineers. U.S. Bureau of Labor, May 2012. Retrieved 15 February 2014.^ Mechanical Engineers. U.S. Bureau of Labor Statistics, 17 December 2015. Retrieved 3 March 2017.^ "201011 Edition, Engineers" Archived 19 February 2006 at the Wayback Machine. Bureau of Labor Statistics, U.S. Department of Labor, Occupational Outlook Handbook. Retrieved 9 May 2010.^ Note: fluid mechanics can be further split into fluid statics and fluid dynamics, and is itself a subdiscipline of continuum mechanics. The application of fluid mechanics in engineering is called hydraulics and pneumatics.^ Bolton, W. Mechatronics. Pearson; 6th ed. edition, 2015. ISBN 9781292076683^ "Chapter 8. Failure". virginia.edu. Retrieved 9 September 2018.^ ASM International's site many documents, such as the ASM Handbook series Archived 1 September 2007 at the Wayback Machine. ASM International.^ "Thermodynamics". grc.nasa.gov. Retrieved 9 September 2018.^ "Applications of Thermodynamics Laws. Carnot, Stirling, Ericsson, Diesel cycles". Brighthub Engineering. 10 June 2009. Retrieved 9 September 2018.^ "SOLIDWORKS 3D CAD". SOLIDWORKS. 27 November 2017. Retrieved 9 September 2018.^ "Advances in Friction Stir Welding for Aerospace Applications" (PDF). Retrieved 12 August 2017.^ Proposal Number: 08-1 A1.02-9322 Archived 14 April 2016 at the Wayback Machine NASA 2008 SBIR^ "Military Applications". Archived from the original on 31 January 2019. Retrieved 15 December 2009.^ "What is Mechatronics Technology?". ecpi.edu. 19 October 2017. Retrieved 9 September 2018.^ Nilsen, Kyle. (2011) "Development of Low Pressure Filter Testing Vessel and Analysis of Electrospun Nanofiber Membranes for Water Treatment"^ Mechanical Characterization of Aluminium Nanofilms, Microelectronic Engineering, Volume 88, Issue 5, May 2011, pp. 844847.^ "Columbia Nano Initiative".^ Xia, Ting (3 February 2003). "Introduction to Finite Element Analysis (FEA)" (PDF). UIOWA Engineering. Archived from the original (PDF) on 30 August 2017. Retrieved 4 September 2018.^ Alexander, R. Mcneill (2005). "Mechanics of animal movement". Current Biology. 15 (16): R616 R619. doi:10.1016/j.cub.2005.08.016. PMID16111929. S2CID14032136.^ Phoengsongkhro, S., Tangpornprasert, P., Yotnuengnit, P. et al. Development of four-bar polycentric knee joint with stance-phase knee flexion. Sci Rep 13, 22809 (2023). Dempster, Coleman (15 August 1960). "Tensile strength of bone along and across the grain". Journal of Applied Physiology. 16 (2): 355360. doi:10.1152/jappl.1961.16.2.355. PMID13721810.^ Tsouknidas, A., Savvakis, S., Asaniotis, Y., Anagnostidis, K., Lontos, A., Michailidis, N. (2013) The effect of kyphoplasty parameters on the dynamic load transfer within the lumbar spine considering the response of a bio-realistic spine segment. Clinical Biomechanics 28 (910), pp. 949955.^ "What is CFD | Computational Fluid Dynamics? SimScale Documentation". www.simscale.com. Retrieved 9 September 2018.^ "What is the Job Description of an Acoustic Engineer?". learn.org.Library resources about Mechanical engineering Resources in your libraryResources in other librariesBurstall, Aubrey F. (1965). A History of Mechanical Engineering. The MIT Press. ISBN978-0-262-52001-0.Marks' Standard Handbook for Mechanical Engineers (11ed.). McGraw-Hill. 2007. ISBN978-0-07-142867-5.Oberg, Erik; Franklin D. Jones; Holbrook L. Horton; Henry H. Ryffel; Christopher McCauley (2016). Machinery's Handbook (30thed.). New York: Industrial Press Inc. ISBN978-0-8311-3091-6.Wikimedia Commons has media related to Mechanical engineering.Mechanical engineering at MTU.eduAt Wikiversity, you can learn more and teach others about Mechanical engineering at the Department of Mechanical engineeringWikiquote has quotations related to Mechanical engineering.Retrieved from " Attending an online college for your bachelors degree in engineering can save you money compared to an on-campus degree program.The online engineering degree programs ranked on this page scored well in terms of affordability and flexibility, meaning they let you study at the times and the pace you choose.Superior online programs also include add-ons like facetime with faculty, peer networks, mentors and career coaching that keep distance learners engaged and on track. Our Methodology We ranked 40 accredited, nonprofit colleges offering online engineering bachelors degree programs in the U.S. using 17 data points in the categories of credibility, affordability, student outcomes, student experience and application process.We pulled data for these categories from reliable resources such as the Integrated Postsecondary Education Data System; private, third-party data sources; and individual school and program websites. Data is accurate as of February 2024.We scored schools based on the following metrics:Student Outcomes:Graduation rate within eight years of normal timeMedian earnings 10 years after graduationPell Grant recipient graduation rate within eight years of normal timeRetention ratePell Grant graduation rate vs. overall graduation rateAffordability:Average in-state tuition rate and feesMedian federal student loan debtStudent loan default ratePercentage of students who take out loansStudent Experience:Student-to-faculty ratioSocioeconomic diversityPrograms coursework (excluding student orientations, field experiences and labs) is available 100% onlineProportion of undergraduate students enrolled in at least some distance learning coursesCredibility:Fully accreditedNonprofit statusApplication Process:Acceptance rateUses Common AppWe chose the 10 best schools to display based on those receiving a curved final score of 90% or higher.Find our full list of methodologies here. Nearly three-quarters71%of undergraduate Florida International University students are enrolled in at least some distance education courses, so youd be in good company pursuing an online degree from this institution. FIU offers fully online, ABET accredited Bachelor of Science degrees in computer engineering and electrical engineering, with start times in the spring, summer and fall. Florida-based students can get the most value from this program at a rate of just under $240 per credit for in-state students. Online engineering degree program hopefuls typically have the same admissions requirements as applicants for other undergraduate programs, such as a high school diploma or GED, transcripts from educational institutions previously attended, and ACT or SAT scores, if applicable.Some programs on our ranking were designed for students who already have an associate degree in engineering or a related field.High school students who are considering engineering as a major should take (and have an aptitude for) math and science courses such as calculus, trigonometry, physics and chemistry.Common CoursesThere is no one-size-fits-all online engineering curriculum, as many core courses are directly related to a specific subset of the field. Software engineering majors can expect to take courses in programming, for example, while engineering technology management majors study engineering work analysis and manufacturing design engineering technology students take courses in computer aided engineering.ConcentrationsEngineering degrees may not have concentrations because the major itself is often a subset of engineering. Engineering focus areas for the degree programs in this ranking include:Electrical engineeringEngineering technologyCivil engineering technologyElectrical engineering technologyMechanical engineering technologyManufacturing design engineering technologyFire safety engineering technologyEngineering technology managementComputer engineeringSoftware engineeringStudents may also pursue a general engineering degree, or a degree in a field such as aerospace engineering, chemical engineering, biomedical engineering or environmental engineering. Engineers work in a variety of roles, depending on their field. Aerospace engineers develop technologies and products for use in aviation and spacecraft, while civil engineers plan infrastructure projects like bridges and roads. Biomedical engineers work on medical devices and software that can improve human health, and environmental engineers focus on improving the health of the world around us by designing systems for pollution control and wastewater treatment.Some employers may prefer to hire candidates with a bachelors degree in a particular engineering field, so if youre interested in a certain engineering discipline, you may want to look for a program in that specialty rather than a general engineering program.Even if you pursue your engineering degree online, you should try to complete an internship or gain other hands-on experience to help you be competitive in the job market and better prepared for a full-time job in the field.While many entry-level engineering roles can be obtained with a bachelors degree, you may consider pursuing a graduate degree if you hope to work in research or academia.Some engineers also need to be licensed. A Professional Engineer (PE) license allows engineers to sign off on projects, work directly with the public and oversee other engineers work. According to the National Society of Professional Engineers, you must have a bachelors degree in engineering from an accredited program, have four years of experience working under a PE and pass two exams to earn the PE credential. PE licenses are issued at the state level, and many states require engineers to take continuing education courses to keep their licenses current. Below are some common jobs engineering degree holders pursue. Salary data was sourced from the U.S. Bureau of Labor Statistics (BLS) in November 2024. Source: BLS Pro TipRemote learning takes self-discipline and motivation. Before you commit to an online program, be confident you can manage your time effectively and keep up with coursework without the structure of in-person classes.The decision to earn your bachelors degree in engineering online depends on your individual goals and circumstances and whether the degree program meets certain criteria.Two factors to weigh are the flexibility an online program offers in terms of scheduling and location, which might let you balance your studies with work, family or other responsibilities, and accessibilityonline programs can be more accessible for students who live in remote areas or have limited access to traditional on-campus education.You should also ensure your chosen degree program is properly accredited, so you know it meets certain quality standards and is recognized by employers and other academic institutions.At the same time, look for programs that offer a certain level of student support: opportunities for collaboration with fellow students, interaction with instructors, and access to services such as academic advising and IT help.Your own circumstances and preferences are also important to consider. Remote learning requires serious self-discipline and motivation. Are you confident you can manage your time effectively, stay organized and keep up with coursework without the structure of in-person classes?Think about how earning your degree online aligns with your career goals, too. Look into whether online graduates from the program youre contemplating have found jobs in your desired field. Pro TipSpeak to your schools financial aid office early in the application process, so you can get a head start on finding out what kinds of assistance may be available to you. When youre trying to decide on an online engineering program, an especially helpful factor to consider is what you plan to do with your degree after graduation.If you expect to join the workforce right after graduating, verify that your intended program fulfills the requirements for licensure or certification in the state where you plan to work.Relevant hands-on experience will be a major asset when you try to find your first post-bachelors job in engineering. Ask the school if your program provides resources to help students obtain internships or any other practical experience while theyre enrolled.On the other hand, if you want to go on to grad school after obtaining your degree, find out if remote learners like you have access to online faculty office hours and any mentors who are available to in-person students. Academic advisors can also help set you on the right track for a relatively friction-free transition from undergraduate to graduate study.Understand Your Expenses and Financing OptionsThe average tuition and fees for a four-year, in-person bachelors degree cost $17,709 per year, bringing the total for a four-year degree to more than $70,000, according to the National Center for Education Statistics.To qualify for federal student aid, you must fill out the Free Application for Federal Student Aid (FAFSA) to confirm whether you qualify for federal student aid programs such as work-study, Direct PLUS Loans and Direct Unsubsidized Loans. Online students typically qualify for federal aid, but eligibility requirements will vary from program to program. Consult your schools financial aid office for help regarding those requirements.Your schools financial aid office may also be able to connect you with some of the following funding resources:Scholarships and grantsmerit-based, need-based or specific to certain disciplinesare available for online students.If youre presently working, ask your employer whether tuition reimbursement or sponsorship is a possibility. If your engineering B.S. is relevant to a job you might hold at the company sometime in the future, some employers may be willing to provide tuition assistance.Private student loans from banks, credit unions or online lenders are another option to consider, bearing in mind that they may involve higher interest rates and stringent repayment guidelines.Review the fine print of any financing option before you commit to it. Look for specifics regarding late fees and interest rates, for instance. Ensure you avoid any potentially damaging consequences for your credit rating after you graduate.Read more Forbes Advisor Education writer Jeff Tompkins also contributed to this article. Yes, its entirely possible to earn a bachelors degree in engineering online. Many accredited universities offer online degree programs in civil engineering, electrical engineering, mechanical engineering and other disciplines in the field. Employers will respect and value an online engineering degree from an accredited institution with a proven reputation and rigorous curriculum. Your diploma will not specify whether you completed college online or on campus, so an online degree from a reputable institution is just as respectable as its in-person counterpart. Engineering subfields like industrial engineering or engineering management may offer quicker paths to a degree than more traditional disciplines like civil engineering or mechanical engineering because they have fewer required technical courses or more flexibility in course offerings. Some engineering disciplines may be considered less challenging because of their level of mathematical rigor and the amount of hands-on lab work they require. Such disciplines may include industrial engineering, engineering management, environmental engineering and engineering technology. However, difficulty level is subjective.

How to become a mechanical engineer without college. Can you get an engineering degree online reddit. How long does it take to get a mechanical engineering degree online. Mechanical engineering degree online reddit. Can you get an engineering degree online. Mechanical engineering online reddit. Can you get a mechanical engineering degree online.