Worcester Polytechnic Institute

Founded in 1865, Worcester Polytechnic Institute (WPI) has long operated under the motto of “Theory and Practice.” WPI is one of the first, and leading, research universities that emphasizes project-based learning. While most technically-focused schools have senior design projects, WPI engages students in project-based learning during all four years of their education.

With approximately 4,100 undergraduates engaged in engineering, the sciences, business and the liberal arts, WPI is similar to smaller technically-focused research universities such as Case Western Reserve University, Lehigh University, MIT, Rensselaer Polytechnic Institute (RPI) and Stevens Institute of Technology. Students who choose WPI also consider technically-focused schools with larger student bodies such as Carnegie Mellon University, Drexel University, Rochester Institute of Technology and the University of Rochester as well as the state universities in their home states and larger private research universities.

Approximately 60 percent of WPI students major in engineering; almost a fifth in computer science, mathematics and the natural and physical sciences. Eight percent chose a business program, the remaining two percent chose a liberal arts major. Just under a third of WPI students pursue a minor of their choice; an arts and humanities minor is required of all students. This is usually high for a school where the vast majority of the students choose majors that have many course, project and lab requirements.

Last year WPI accepted 49 percent of the nearly 10,200 applications it received for the freshman class and wait-listed another quarter, according to WPI’s most recent Common Data Set. A positive indicator of demand for the education offered by WPI: more than half of the nearly 2,500 applicants who were wait-listed accepted a spot on the list, though only 41 were later admitted. The acceptance rate is likely to be lower as “higher ranked” schools such as MIT and Carnegie Mellon have become more competitive while the demand for entry-level hires in the sciences and engineering remains strong.

WPI is unique among technically-focused schools in being “test-optional.” Given the Institutes’s project-based learning approach, answering this question on the Common App is probably a good idea:

*Describe a problem you’ve solved or a problem you’d like to solve. It can be an intellectual challenge, a research query, an ethical dilemma—anything that is of personal importance, no matter the scale. Explain its significance to you and what steps you took or could be taken to identify a solution.*

Given the schools that most applicants consider, it would be no surprise that those who do submit test scores score high on either the SAT or the ACT. Sixty-five percent of the
incoming freshmen who submitted scored had a 600 (out of 800) or higher on the Critical Reading section of the SAT; ninety-one percent scored over 600 (out of 800) on the Math. More than half of the freshmen who submitted ACT scores had a 30 or higher on the Composite; this concords to a 1330 (out of 1600) or higher on the SAT.

WPI graduated 76 percent of the freshmen who entered in 2009 within four years, outstanding considering the technical focus of the school. The Institute’s graduation rate is superior to many larger schools; it would also be considered excellent for a private liberal arts college. WPI retained 96 percent of the students who entered in 2014 for their freshman year, also excellent for any college, let alone a school with a technical bent.

Costs

This year WPI charged approximately $45,800 in tuition and fees and another $13,400 for room and board. The institute added only $2,000 to its estimated Total Cost of Attendance for 2015-16: this appears to be too low.

The Institute tries to make the costs more reasonable. This past year, about 30 percent of the incoming freshmen received merit-based scholarships averaging about $13,200, according to the Institute’s 2015-16 Common Data Set. About 70 percent received need-based scholarships; these averaged nearly $23,900. Overall, WPI met, on average, 79 percent of the need for the freshman class that entered last year and 77 percent of the need for the full undergraduate student body.

Valedictorians, salutatorians, and IB diploma graduates with a diploma score of 40 or greater admitted to WPI are guaranteed a minimum scholarship of $20,000. National Merit Finalists, National Achievement Finalists, and National Hispanic Recognition Scholars admitted to WPI are guaranteed a minimum of $20,000. Other academic scholarships range between $10,000 and $25,000, renewable for four years. Ten incoming freshmen, designated at Foise Scholars, receive full-tuition awards as well as a one-time Global Studies grant for study abroad. This grant is especially important; half of WPI students will graduate with some form of project experience overseas. Up to 50 Global Scholars are also selected to receive the same grant.

Given that a WPI student had, more likely than not, a gap between their need and the aid that s/he actually received, it was not surprising that over two-thirds of the Class of 2015 needed to take out Stafford Loans, at an average of just under $27,000, the maximum that they could borrow over four years to complete their degree. According to the Institute’s 2015-16 Common Data Set, thirty-seven percent of the class needed to borrow from a source other than the Federal Government or state government, though not a bank. These loans averaged approximately $5,400.
WPI had an endowment of approximately $436 million in FY 2014, according to the National Association of College and University Business Officers, lower than Lehigh University ($1.2 billion) and Rensselaer Polytechnic Institute ($676 million), probably the most similar schools in terms of undergraduate student body size as well as academic offerings.

Curriculum

No technically-focused research university offers a curriculum like WPI’s. The school calendar is organized into four seven-week terms labeled A, B, C and D. Students take three, sometimes four, courses per term. A fifth term, the E term, is optional. The break between the B and C terms is about a month.

WPI’s grading system has no D’s or F’s. Instead, there is a grade of No Record. Neither the grade of No Record nor the course where that grade was earned appear on a student’s transcript. Nor is a grade of No Record calculated within a student’s GPA. And, while WPI students will attempt 48 classes during their education, only 45 are required for graduation. In effect, a WPI student is allowed grades of No Record for three courses.

Uniqueness extends into the courses and course requirements. Freshmen may take a two-term Great Problems Seminar that is taught by more than one faculty member, and includes a group project with three or four students; an cross-disciplinary seven-week Interactive Qualifying Project (IQP), a team-based problem solving exercise with a real client, either off-campus or overseas; and a seven-week Major Qualifying Project (MQP) in the senior year. WPI requires every undergraduate to have an arts/humanities minor as well as four terms of physical education. The minor includes five courses of the student’s choice plus a project-based seminar.

Most WPI courses carry no prerequisites, though there are “suggestions” for some of them. This makes it possible to design a path within a major based on personal interests—robotics, for example, is popular as is biomedical engineering—or design their own major. The project-based courses allow approximately half of the undergraduates to have some experience overseas. The unique calendar and less-enforced prerequisites make Advanced Placement less necessary outside of the Math sequence, which students can test out of the early courses. They also make it possible for students to graduate with a masters degree if they choose to stay for a fifth year.

The curriculum, while quite relevant for pre-professional and scientific education, requires a strong commitment at the very start. Students declare a major during their first B term. Since courses are unique to WPI, credits are tough to transfer elsewhere.
If you left to go to another college you would be literally starting a college education all over again.

A student who is not certain or strongly interested in science or engineering might want to look elsewhere. WPI is more of a “nerd nation.” The business program, while accredited and also project-based has only five tracks: Entrepreneurship, Industrial Engineering, Management, Management Engineering and Management Information Systems. However, there are also five minors that could be pursued with a science or engineering degree: Business, Entrepreneurship, Industrial Engineering, Management Information Systems and Social Entrepreneurship. The social science majors also have an analytical focus.

WPI advertises a student/faculty ratio of 14 to 1, high for a school that has 4,100 undergraduates. One reason for the high ratio: you do take some larger introductory courses when you are taking only three classes in a term. Two-thirds of WPI’s undergraduate courses have fewer than 20 students although 10 percent have more than 50 according to the Institute’s 2015-16 Common Data Set.

WPI students gave their faculty a rating of 3.52 (out of a possible 5) on RateMyProfessors.com, about the same as Rensselaer (3.56) and Stevens (3.57) students gave their faculty, though lower than the rating that Case Western (3.67), Lehigh (3.68) and Rochester (3.7) students gave theirs. MIT students gave their faculty a rating of 3.93.

Community

Worcester, Massachusetts is the second-largest city in New England, after Boston, and is within 40 miles of that city. It’s relatively easy to get into Boston by mass transit or car from there. Worcester is also home to 13 colleges as well as 38,000 college students; about the same number of undergraduates as Penn State or Michigan State have on their own. However, unlike the college towns that host a flagship state university, college campuses in Worcester are not next to each other. Holy Cross, for example, is situated on its own hilltop; it is not within walking distance of WPI.

But the city has received media accolades for being a great place for recent college graduates to live. Students who are interested in starting their own businesses might find Worcester to be a more attractive location for a start-up than Boston. Similar properties, such as factory spaces, are available at lower costs. Housing prices are much lower as well. Worcester has its own civic center that will attract most entertainers and speakers who would appear in a college town such as Amherst or State College, Pennsylvania.
WPI’s 95-acre campus is virtually all red brick. The newest buildings with sleeker facades were designed to blend well with the Federal-style classroom, laboratory and administration buildings that opened during the 19th century. It is fair to call the WPI campus attractive. It is exceptionally well maintained, including green space. Considering that WPI has an open campus in a city, the campus feels quite safe. Parking is easy to find, pushed to the edge of the campus; there’s no traffic at the center.

Reported incidents of crime at WPI are few, according to the Institute’s Clery Report although incidents sexually-related crimes were reported each year between 2012 and 2014. Liquor law violations in the residence halls are the most reported crime, by far. There were no more than 24 reported drug-related violations over this three-year period that required disciplinary referrals. There was only one reported arrest for a drug or alcohol-related crime on campus total over these three years. However, there were four reported incidents of weapons possession in the residence halls during 2014, a crime where reported incidents are rare. These were handled through disciplinary referrals.

WPI competes in 20 varsity sports at the NCAA Division III (non-scholarship) level, including football. The men’s and women’s basketball teams are currently enjoying successful seasons as is the swimming program. The football team posted its best record (7-4) since 1992 and represented the Liberty League in the school’s third bowl game in 126 years. While there is Greek life as well as campus-wide traditions, it is difficult to call WPI a “spirit and sports” school, even along the lines of schools such as Lehigh that compete in scholarship varsity sports.

**Comferts**

WPI houses only 1,700 of the Institute’s 4,100 undergraduates. There are seven residence halls, two apartment complexes and four residential houses on campus. Residence halls offer either single-sex or coed floors, traditional (several rooms sharing a common bathroom) or suites (few rooms sharing a common bathroom). The Institute will guarantee housing for first-year students. WPI over-enrolled its last freshman class, leading the Institute to assign more first-year students to triple rooms as well as quads. WPI does not have living-learning communities as other colleges do, though it has a freshman wellness community.

Through the Insight Program, first-year students who reside in the halls have not only a community advisor and a resident advisor, both upper-class students; they also have a faculty advisor. Incredibly, for a technical school, the laundry machines are coin operated.
WPI offers four meal plan options. Three offer meals on a per-week basis as well as bonus points that can be used at the cafes’ and convenience stores on campus. The fourth plan is a Block Plan called 200 Plus, where you buy 200 meals for a term. Given that a term is only seven weeks, and the work is so demanding, the 200 Plus plan may offer the most flexibility.

About a quarter of WPI men are members of fraternities. Just over 40 percent of the women joined sororities. There are 13 fraternities, 12 with their own houses. Three sororities of the six sororities have their own houses as well. The Institute also has two Greek honor societies.

Worcester has a local ordinance that prohibits more than three unrelated people from living together in the same dwelling, whether it be an apartment or a house. Fortunately, Worcester is an inexpensive place to live, especially for New England. It is quite possible to live off-campus and share an apartment or house for less than you would pay to live on campus.

Connections

Among the nearly 30,000 WPI alumni who supplied information to LinkedIn.com, more than 16,000 live and around the Boston area, including Worcester. The geographic base drops considerably from there. The second-largest group, based around New York City includes nearly 1,700 alumni. Just over 1,300 live in or around Springfield, Massachusetts and Hartford, Connecticut; the two metro areas are quite close together. Notable WPI alumni include Dean Kamen, inventor of the Segway and the insulin pump as well as the founder of the FIRST Robotics Competition; Robert Goddard, considered the father of rocketry and, Naveen Selvadurai, founder of FourSquare, among many others.

More than 9,700 WPI still work in engineering, according to LinkedIn.com. Collectively more than 20,000 work in a field directly related to engineering such as Operations, Information Technology, Project/Program Management or Research. However, there are also more than 1,300 educators as well as more than 1,300 entrepreneurs. Just over 13 percent of the alumni base, on average, made a contribution to the Institute of the previous two academic years, according to data the school supplied to U.S. News. WPI alumni were slightly more loyal than alumni at Rensselaer, perhaps the most similar school. However they are less loyal than Lehigh alumni, interesting because Lehigh and WPI were founded in the same year.

Like most technically-focused schools, WPI takes career development quite seriously. Freshmen are invited and encouraged to attend career fairs on campus and apply for internships. They may also participate in informational interviews coached by upper-class students as well as faculty, employers and alumni. There is also a first-year
course called: Discovering Majors and Careers offered during the B and C terms to help freshmen choose their major. The Institute’s Fall and Spring Career Fairs as well as the Spring Life Sciences and Bioengineering Career Fair are used to fill internships as well as full-time jobs. The career fairs are held during the fifth week of their term, after midterms but before students must seriously study for finals.

Like similar schools such as Lehigh and Rensselaer, WPI offers a cooperative education program. Students who elect to do co-op work 14 weeks a year, during the ‘B’ and ‘C’ terms, for three years. Since WPI has an optional ‘E’ term, students who choose to take on a co-op can still graduate within four and a half years. Last year the career development center received more than 600 postings for co-ops.

Last year more than 400 employers recruited on campus, impressive for a school that graduates around 800 seniors in a year. Ninety percent of the graduates in the Class of 2014 were working full-time or attending graduate or professional school full time within a year after they had graduated.

Conclusions

WPI is a great school for students who want a more “hands-on” approach to learning as well as a strong liberal arts curriculum along with opportunities to study abroad within a pre-professional major. The Institute educates its students in some very interesting and innovative ways. It is also fair to say that WPI gives its students a better chance to succeed than most technically-focused colleges. A project-based education is more cooperative than competitive in the classroom; you develop people skills as well as technical skills from the experience. While it may not create “winners” in the same sense as larger school where “only the fit survive,” WPI’s project-based approach has been validated through the successful employment of its graduates. WPI graduates get good jobs at good wages.

But there are some downsides. The experience is very expensive, although there are scholarships available. The City of Worcester, while the second-largest in New England, has several colleges, but it is not really a “college town.” The colleges are spread out; students hardly mingle. Worcester is also not a technology corridor; none of the city’s ten largest employers are technology-based. If you do an internship or co-op, you are more likely to work elsewhere. The same is true for similar schools such as Rensselaer or Lehigh. WPI also has a more regional alumni base than similar small or mid-size schools that also offer highly-respected technical and business programs. The base is quite thin after you get more than two hours outside of Boston.

WPI offers one of the best undergraduate academic experiences for a science or engineering student in the United States. You might not turn down admission to MIT to come here. But after a semester at MIT you might wish that you did.
Report Card: Worcester Polytechnic Institute

- Four-Year/Six-Year Graduation Rates: A
- Freshman Retention: A
- Costs: B
- Curriculum: A
- Community: B+
- Comforts: B+
- Connections: A