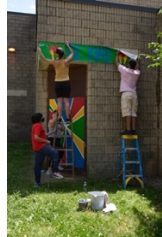


ACE MENTOR PROGRAM

EXPOSURE TO CAREERS IN ARCHITECTURE, ENGINEERING, & CONSTRUCTION



ABOUT THE PROGRAM

The ACE Mentor Program is a free, after-school program open to any high school student who has the curiosity and drive to learn about a career in the integrated design and construction industry.

Our program provides high school students with career exploration of the design and construction disciplines, essential professional development enrichment, and interaction with industry professionals. ACE provides a full circle overview of the journey into a career as an architect, engineer, or construction professional! It encompasses in-person, virtual, and design & build teams.

Students work with Greater Philadelphia area professionals on mock & real-life design challenges and learn about the innovative technology used for designing, planning, scheduling, and building structures. Students also show gains in their confidence and professional skillsets through insight into resume development, personal branding, interview techniques, and professional networking.

OBJECTIVES

- Provide students with an all-encompassing introduction to the career paths available within the design & construction industry
- Deliver career readiness enrichment on topics such as: professional etiquette, leadership, effective communication, & developing an impactful resume
- Provide students with the opportunity to build mentoring relationships and network with A/E/C industry professionals
- Introduce technological resources to students and provide an accurate overview of industry innovation
- Provide professional toolkits and opportunities to utilize the materials in hands-on, project-based learning activities
- Build student confidence, leadership & communication skills, and professional preparedness

- Encourage students to apply for scholarships, higher education programs, & internships
- Guide students toward their professional & academic goals

MEETING STRUCTURE

Mentor firms commit to facilitating up to 2 hours per week in career exploration and professional development sessions which include in-person and/or virtual meetings; independent learning and/or small group research & activities; opportunities to utilize professional tools to design, develop, and complete mock and/or real-life projects.

WEEKLY | Tuesday, Wednesday, or Thursday from 4:00-6:00PM (times can be flexible but must begin after 3:30PM)

OUTLINE

FALL SESSIONS – 6-8 Weeks of programming taking place in-person at mentor offices, school meeting spaces, or on construction sites. Virtual sessions are also an option. Programming begins in October and ends before the winter holidays. Sessions focus on career exploration & professional development while working through hands-on activities or a mock-design project.

SPRING SESSIONS - 6-8 Weeks of programming taking place in-person at mentor offices, school meeting spaces, or on construction sites. Virtual sessions are also an option. Programming begins in January and ends before Spring Break. Sessions focus on career exploration & professional development while working through hands-on activities or a mock-design project.

YEAR LONG SESSIONS – 12-16 Weeks of programming taking place in-person at mentor offices, school meeting spaces, or on construction sites. Virtual or hybrid sessions are also an option. Programming begins in October and ends in May. Sessions focus on career exploration & professional development while working through hands-on activities or a mock-design project.

OPTIONS

WORKSHOP – 6-16 Weeks of programming. Sessions focus on career exploration & professional development.

Teams are introduced to a new design & construction industry discipline each week. At the conclusion of the program sessions, students have been introduced to many industry career options and worked through multiple project-based learning activities. This type of structure is ideal for freshmen & sophomores or first-time participants.

DESIGN CHALLENGE – 6-16 weeks of programming. Sessions focus on career exploration & professional development while collaborating on a design challenge.

Students are presented with 2-3 RFP options and decide which to work through either as a large group or in smaller groups within the larger team. As the team collaborates on the design challenge, mentors discuss what their roles would be on the project, how industry professionals work together to bring the project to completion, and assist the students with

problem solving using industry methods and tools. At the end of the program sessions, students have worked through one design challenge and have made presentation boards or models to showcase their hard work. This structure is ideal for juniors & seniors or advanced learners.

DESIGN & BUILD – 16-20 Weeks of programming. Sessions focus on career exploration & professional development while collaborating with community members to improve a public space in Philadelphia. A Build Day is scheduled for late May or early June to bring the designs to reality.

A community partnership is pre-determined and teams are expected to communicate with members of the community who actively use the public space. Through collaboration, a design, which addresses the concerns of the community, is developed. Teams are expected to work through budgetary concerns and design iterations then bring their design to life during a hands-on Build Day. Support & funding is provided throughout the entire process. This structure is ideal for students who are highly self-motivated, interested in challenging themselves, and can commit to participation throughout the school year.

ROLES & RESPONSIBILITIES

ACE LEADERSHIP

Directors of the ACE Mentor Program of Greater Philadelphia will work with School Champions to recruit students who are interested in participating in the program. Leadership will assist Mentors in planning for their sessions by providing clear expectations, schedules, and assistance with curriculum development and facilitation. Leadership will assist mentors with student/parent/school communication.

SCHOOL CHAMPION

High School staff person who is the liaison and point of communication between the school, students, parents, and the ACE Mentor Program. Has a relationship with the students/parents and will be able to help with recruitment efforts and maintain an open line of communication with them during the entire program year. Has the ability to hold the students accountable for their performance while participating in the ACE Mentor program.

TEAM LEADERS - INDUSTRY PROFESSIONALS – One or two mentors who serve as the lead for the team. Team Leaders are expected to attend every meeting. They develop the program schedule & curriculum for the team and communicate with team mentors and students about expectations, responsibilities, and upcoming sessions. Team Leaders are expected to maintain attendance records, collaborate with ACE Leadership, and be the main point of contact for students.

MENTORS - INDUSTRY PROFESSIONALS - Design and construction industry professionals, including but certainly not limited to: Architects, Engineers, Contractors, Construction Managers,

Interior Designers, Owner's Representatives, Developers, and Skilled Trades Professionals. These professionals will facilitate multiple sessions throughout the school year and work with the Team Leader to ensure sessions run smoothly and successfully.

MENTORS - PROFESSIONAL DEVELOPMENT PRESENTERS - Professionals working in the design and construction industry, including but certainly not limited to: Accountants, Human Resources Personnel, Administrators, Communications & Marketing Professionals, Business Developers and/or Firm Owners. These professionals will act as guest speakers throughout the program sessions and provide presentations on professional development and/or career enhancing skills enrichment. Professional development workshop topics may include, but are not limited to: Resume Building, Social Media Profiles, Mock Interviews, Paycheck 101, Budgeting, & Portfolio Building. Mentors work with the Team Leader to ensure sessions run smoothly and successfully.

EXPECTATIONS

The ACE Mentor Program is committed to providing a caring, friendly and safe environment for all students and mentors. Participation in ACE is a privilege. Students, mentors, and facilitators shall conduct themselves in a professional manner and refrain from any interaction that could be interpreted as inappropriate such as actions of racism, discrimination, bullying, sexual harassment, or inappropriate verbal or physical conduct.

STUDENT EXPECTATIONS & ETIQUETTE

- Attend a minimum of 85% of sessions
- Arrive on time to all in-person and/or virtual meetings
- Treat all ACE mentors, facilitators, and fellow student participants with kindness and respect
- Participate fully in all meetings and be an active member of discussions & activities; ask questions, complete "homework," challenge yourself to try new things (be a "team player")
- Display appropriate classroom behavior in all virtual team meetings
- Check your email each day for any correspondence related to ACE
- Communicate issues with attendance or completing tasks immediately to ACE mentors
- Treat the ACE experience with seriousness and dedication – remember, the mentors you are working with now are potential future employers!
- Remember the more you put into this career exploration & professional development program, the more you will get out of it!

MENTOR EXPECTATIONS & ETIQUETTE

- Team Leaders are expected to attend all ACE sessions. If you cannot attend a session, you are required to find another mentor to attend in your place.
- Mentors should attend 85% of the sessions your firm has committed to hosting
- 2 or more mentors must be present at all sessions
- All participating mentors/facilitators/presenters must be registered in the ACE database and complete required background checks
- Mentors should be the first to enter and the last to exit a meeting
- Mentors are required to take attendance for students and mentors at each session.
- Collaborate with other mentors on planning informative and engaging virtual presentations, tours, activities, discussions, and office hours
- Participate fully in all meetings and be an active member of discussions & activities; pose questions, assign “homework” if appropriate, challenge students to try new things
- Lead discussions, Q&As, and activities in an effort to engage and establish a mentoring relationship & rapport with ACE students
- Establish a mentor-student bond with participants by serving as professional role model
- Share with students your career path and the requirements for entering your particular field
- Engage students in learning about the integrated construction industry and demonstrate how the different industry disciplines must collaborate to design and build projects
- Inspire students to complete the ACE program, attend the ACE program each year through graduation, pursue their post-graduation goals, and return to the ACE Mentor program as alumni mentors
- Treat the ACE experience with seriousness and dedication
- Assist students with recommendation letters, scholarship applications, etc.

REQUIREMENTS & RESOURCES

PROGRAM REQUIREMENTS

- Mentors should have the endorsement of Principal or President/CEO of partner firm as meetings will be taking place during the work day
- Support with curriculum, mentors, recruitment, communication, and other requests will be provided by ACE Leadership

PROGRAM CALENDAR

The 2023-2024 program calendar is currently under development and will be provided to teams in September.

ACE RESOURCES FOR STUDENT ENGAGEMENT

- RFPs for the 2023-2024 program year are currently being developed and will be provided to mentoring teams in September.
- Virtual Reference Library (ACE360 Online recordings)
 - o Email Melissa at mraffel@acementor.org to request access
- ACE Curriculum Guide (updates for 23-24 coming soon):
<https://www.dropbox.com/scl/fo/efyizz89e5kd9xd6j4a9n/h?dl=0&rlkey=d2avtu3r7x3m0nx8ql1u44wjc>
- ACE@Home Virtual Lessons: <https://acementortools.org/athome/>
- Design Challenge Examples from 2022 CiRT Competition: <https://www.cirt.org/2022-competition#Challenges>
- Jefferson's CABE Summer Academy – an excellent example of project-based learning accomplished over the course of a week:
<https://www.jefferson.edu/academics/summer-academy/architecture-and-the-built-environment-academy/about-the-summer-program.html>
- ACE Mentor Virtual Tools: <https://acementortools.org/virtual/curriculum/>

FIRM RESOURCES FOR STUDENT ENGAGEMENT

- Photo, Video, or Drone Footage of active/completed construction projects
- Portfolio Examples of mentors' professional work
- PowerPoint Presentations detailing A/E/C disciplines
- Project construction drawings, computer aided designs, models, etc.

CURRICULUM DEVELOPMENT

TIMELINE

4 WEEKS AHEAD OF SESSION CYCLE

- Form team of mentors who desire to work with students
- Create schedule of sessions; assign mentors
- Choose/Develop hands-on activities which students can complete as a group or independently

3 WEEKS AHEAD OF SESSION CYCLE

- Schedule tours of construction sites, office spaces, or other industry related field trips
- Include video/drone footage of construction projects into sessions
- Craft presentations for time & content (PowerPoint, videos, etc.)
- Develop list of questions to encourage student engagement
- Incorporate anecdotes into presentation – students enjoy hearing about actual experiences you've had to work through

- Outline hands-on activities related to session topics (sketch the elevation of your home, build a structure using toothpicks and marshmallows, write down your academic and extra-curricular activities for your resume)

2 WEEKS AHEAD OF SESSION

- Determine how mentors will be interacting with students (who is the presenter, who is assisting in hands-on activities, etc.)
- Consider incorporating trivia games or other fun, interactive activities into the sessions

1 WEEK AHEAD OF SESSION

- Finalize presentations and plans for upcoming session
- Confirm participation with mentor participants
- Gather materials students will need for participation in activities

2 DAYS AHEAD OF SESSION

- Send reminder to students (session location, time, date, entry requirements, etc.)
- Send reminder to mentors about their responsibility during the session

DAY OF SCHEDULED PROGRAMMING

- Present with energy and excitement for your topic
- Engage & interact with students
- Introduce yourself and provide background on your education and career
- Use anecdotes when speaking about your professional experience
- Ask questions and encourage responses
- Expect student participation in discussions and hands-on activities

SUGGESTION

Use a project you/your firm has worked on as an example to the students. Describe the design and construction process for this project. Discuss your contribution and how you collaborated with other industry professionals. Provide students with examples of construction drawings, Revit/SketchUp designs, time-lapse photography, drone footage of the project. When possible, take the students to visit the site. A fun concluding activity could be to task the students with thinking about how they would have approached the project and present their ideas to the group.

EXAMPLE CURRICULUM (WORKSHOP STRUCTURE)

Week 1

- Team Introduction – Use icebreakers to get to know mentors and students
- Team Expectations – Go through syllabus, describe expectations and responsibilities of mentors and students
- Hands-on Activity – Choose a fun activity for students to work through in small groups

Weeks 2, 3, 4, 5, 6, 7

- Each week, mentors introduce a different A/E/C discipline
 - o For example: Week 2 – Architecture, Week 3 – Structural Engineering, Week 4 – Skilled Trades
- Describe qualifications, required education, licensure, day-to-day professional responsibilities
- Provide students with an example of professional experience using project photos, videos, construction drawings, site visit, etc.
- Engage in hands-on activity related to topic of discussion
 - o For example: Week 2 – Draw the façade of the building where you are meeting, Week 3 – build a bridge out of toothpicks and gummy candy, Week 4 – bring in masons as guest speakers and participate in bricklaying exercise

Week 8

- Concluding session celebrating growth & learning (pizza or ice cream party)
- Discuss favorite sessions, what students know now that they didn't learn before, future participation in ACE

Include

- Visit to Temple University's Engineering Department (ACE-wide event, November 8, 2023)
- Visit to Finishing Trades Institute (ACE-wide event, date TBD)
- Site visit to construction project firm is working on or has recently completed

EXAMPLE CURRICULUM (DESIGN CHALLENGE/DESIGN & BUILD)

Week 1

- Team Introduction – Use icebreakers to get to know mentors and students
- Team Expectations – Go through syllabus, describe expectations and responsibilities of mentors and students
- Choose design challenge from provided RFPs (Design Challenge Team)
- Introduce public space & community area to students (Design & Build)
- Hands-on Activity – Choose a fun activity for students to work through in small groups

Weeks 2 through 14

- Introduce students to various A/E/C disciplines throughout design process
- Describe qualifications, required education, licensure, day-to-day professional responsibilities
- Provide students with an example of professional experience using project photos, videos, construction drawings, site visit, etc.
- Work on Design Challenge/Design & Build Project
 - o For Design & Build – incorporate community forums into team schedule so that students can hear directly from community members about how they use the public space, what they need/want for the space, review design iterations team presents

Week 15

- Complete work on Design Challenge/Design & Build project
- Begin presentation prep (Design Challenge)
- Prep for Community Build Day (Design & Build)

Week 16 – Design Challenge

- Groups should present their design ideas to the full team
- Invite parents, friends, educators, etc. to presentations
- Celebrate completion of program with food and refreshments

Week 16 – Design & Build

- Note: weeks 17-20 may need to be added to complete the project
- Community Build Day takes place to bring final agreed upon design to life
- Include community members, parents, friends, educators, other ACE teams to help with building, painting, etc.
- Supplies and materials funded by ACE Leadership

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