

2023 ELECTRICAL CONTRACTING INNOVATION CHALLENGE



2023 Competition for NECA Student Chapters

Electrical Contracting Innovation Challenge

RULES AND REGULATIONS

ELECTRI Point of Contact:

Laura Holmes

Phone: 202-991-6257

Laura.Holmes@electri.org

www.electri.org

ECIC Program Manager:

Alisha Heath

Phone: 317-423-3835

ah Heath@ermco.com

PROJECT OVERVIEW

ELECTRI International and the National Electrical Contractors Association (NECA) are pleased to announce the **15th Annual ELECTRI/NECA Student Chapter Competition**. The Electrical Contracting Innovation Challenge (ECIC) provides university students and faculty advisors with an engaging and fulfilling annual competition that helps foster meaningful interaction between students, their local NECA Chapter, and NECA member companies.

ECIC Scenario

Each faculty advisor and student team will work with their local NECA chapter and contractors to deliver a proposal containing various project management tasks for the Oglethorpe University Emerson Student Center. Students are to put themselves in the shoes of an electrical contractor and perform various tasks related to constructing the project that has been assigned to them. Below is a scope letter with various items that are included in the “contractor’s” scope of work. Students will use this as a guide when preparing their proposal. In the following weeks the student teams will tackle various challenges that project managers face when completing a project. These challenges include creating a schedule of values, a detailed schedule, change orders, submittal logs, a handoff meeting agenda, prefab plans, and more.

Each student team will work with their local NECA chapter and contractors to meet the project requirements by conducting interviews and scheduling office meetings (in contractors’ bid/war rooms) to learn how electrical contractors have responded to similar past projects. These interactions can help the student teams identify common challenges faced by subcontractors, when managing a project. Teams are highly encouraged to work closely with their local NECA chapters and contractors for assistance. It is essential for the student teams to work closely with NECA electrical contracting partners to identify means and methods that take into consideration real-world project parameters including schedule, cost, work force, weather, and other considerations unique to the project. All interactions with NECA chapters and contractors should be documented in the final proposal. This includes web or in-person meetings, training sessions, organized tours, jobsites visits, etc.

Competition Goals

- Engage members of NECA Student Chapters in a rewarding educational experience.
- Challenge Student Chapter teams to develop skills vital to careers in the electrical construction industry and professional skills in time management and oral/written communication.
- Foster an interest among NECA Student Chapters in opportunities for meaningful engagement with their local NECA contractors and NECA chapters.
- Provide a mechanism for NECA Student Chapters to create enthusiasm at their university about chapter membership and eventual careers in the electrical construction industry.

Competition Format

Working along with local NECA chapters and contractors, student teams are challenged to submit a proposal with a schedule of values and project schedule. Student teams will be asked to provide AIA format pay applications for February, March, and April to reflect work completed on the project during that timeframe.

Students will also be required to perform other project management tasks. For example, this would include reviewing the contract they receive from the general contractor, creating a kickoff meeting agenda, creating a submittal log, and submitting on some of those items, writing purchase orders, and developing prefabrication execution plans and detail how they will reduce cost on the project.

Throughout the project, students will face changes in the project scope. With this challenge, students will be given the task of creating change order documentation for these project changes. This will include estimating the change, creating a scope letter detailing what work is involved in the change, including the change order in the AIA pay application, etc.

The ECIC competition has been designed to help students gain valuable job skills and experience from local NECA contractors who can assist them in their future careers. ELECTRI anticipates the student teams will gain a new level of respect for the entire construction process and become more aware of the important roles each project stakeholder plays during the design and construction phases of a project.

Each team's written proposal will be judged by NECA contractor members and industry partners. They will select the finalist teams who will be invited to attend the NECA 2023 Annual Convention in Philadelphia, PA on September 29th through October 2nd. The final teams will each make a 15-minute oral presentation followed by a maximum 10-minute question/answer session at the NECA annual convention. The panel of judges will determine the overall Electrical Contracting Innovation Challenge winner.

Each team entering the challenge is encouraged to create a three-minute video that profiles the team's project and highlights the team members' engagement with their local NECA contractor partner. All videos will be shown at the ELECTRI International Summer Meeting in July, and attendees will select three video finalists. The three finalists' videos will be screened during the NECA National Convention, and the winner will be selected by a vote of contractors in attendance.

In addition to the awards for best student team project and best student team video, ELECTRI International will present team awards of \$500 each, open to **every team** that submits a full proposal: Most Complete Change Order, Most Innovative Prefabrication Plan, and Most Influential Social Media Campaign.

2023 ECIC Competition Schedule

January 6	Competition Rules and Regulations delivered to NECA Student Chapter Advisors
January 24	Webinar with ECIC jury and ELECTRI Staff who will answer questions regarding the 2023 Challenge
February 3	Submit any questions about the proposal to Alisha Heath at aheath@ermco.com
February 8	Competition registration deadline for NECA Student Chapter Teams (11:59 PM in each US time zone)
February 23	Virtual Kick Off Project Meeting
April 28	Submission deadline for final PDF proposals (11:59 PM in each US time zone)
June 2	Video Submission deadline (11:59 PM in each US time zone)
June-July 2023	Proposal review by the ECIC jury
July 31	Notification of review results and selection of finalists
September 29	Oral presentations at NECA Convention and Award Ceremony in Philadelphia, PA. Top three teams: 15 minutes each + 10-minute Q/A

2023 ELECTRI ECIC COMPETITION SCORING

The top three teams (based on written proposal scoring) will be invited to the NECA Convention in Philadelphia to give oral presentations on their ECIC proposals. The winner of the 2023 ELECTRI ECIC Competition will be the team with the highest **composite** written proposal and oral presentation score. The written proposal score and the oral presentation score will each represent 50% of each team's final score. Each finalist team's written proposal score will be published prior to the oral presentation segment of the competition.

Example:

	Team A	Team B	Team C
Written Proposal Score:	48	47	44
Oral Presentation Score:	45	47	48
Final ECIC Score:	93	94	92

Team B would be the NECA/ELECTRI ECIC Competition winner.

Participation

- All communications should be directed to **Alisha Heath**, ah Heath@ermco.com
- Student participation is limited to undergraduate students. Students who have graduated within six months of the NECA Convention will be eligible to take part in the team's on-site presentation at the Convention.
- Student teams are expected to have four to six core team members and are encouraged to engage fellow students in supporting roles. A maximum of six team members can present the proposal at the NECA Convention.
- Each university team may submit only one entry and one video.
- All team members are expected to be NECA Student Chapter Members. Teams are encouraged to recruit students from other disciplines to join the chapter and the team.
- Faculty members are strongly encouraged to use the challenge problem as an assignment in an existing course.

External Input

- The completed proposal work must be original and prepared by the team members.
- Teams are expected and encouraged to gain input and feedback on the proposal from NECA contractors and chapter representatives, vendors, material suppliers, and faculty members.
- No team member is permitted to have earned wages for participating in the competition or wages for working on the project selected by the team.
- Much like real-life projects, students should be prepared to manage addenda and change orders throughout the challenge.

Client Interaction/Outreach

- The project "organization" customer for each NECA Chapter Team must be a local representative provided by ELECTRI.
- Student teams are expected to conduct themselves in a professional manner in all aspects of the competition.
- Student teams are expected to plan all meetings with their local NECA chapters and contractors. All interactions should be conducted in a professional manner that is not disruptive to anyone's educational requirements.
- Teams are expected to represent accurately the goals and intent of the competition in any website and publication materials they use to develop sponsorship opportunities and outreach messages about their participation in the competition.

Travel Costs/Sponsorship/Expenses

- Teams are encouraged to seek financial sponsorship to support their team’s travel costs to the Convention and other costs associated with the development of the proposal.
- ELECTRI International will provide travel support of up to \$2000 for each finalist team.
- Awards for winning presentations and videos will be made to the university department of the winning team.
- Prize money is to be used to support general NECA Student Chapter activities, at the discretion of the NECA Chapter Faculty Advisor.
- The winner of Best Presenter will receive a financial award via a check made payable directly to the winning student.

2023 DETAILED SCORING

Contractor/Design Qualification Statement	Total Possible Points
<ul style="list-style-type: none"> • Written Executive Summary (10 POINTS), including mission statement (5 POINTS) and an explanation of the roll each team member will perform (5 POINTS). 	20
<ul style="list-style-type: none"> • Team resumes – 1-page max for each core team member (1 POINT), uniformity (2 POINTS) and professional (2 POINTS) appearance. 	5
<ul style="list-style-type: none"> • Summary of the overall project. What did team members learn throughout the challenge and how will this impact them in their future careers? What are some of the key takeaways and lessons learned from the experience? (30 POINTS) 	30
Technical Analysis: Project Qualifications & Special Considerations	
<ul style="list-style-type: none"> • The team is to review a construction contract provided by ELECTRI and answer various questions regarding that contract. ELECTRI will provide a contract checklist that students must answer and mark where in the contract that they found the information. (25 POINTS) 	25
<ul style="list-style-type: none"> • Teams will be asked to create a kick-off meeting agenda. A kick-off meeting is where all members of the project team get together before construction begins to develop a detailed strategy for completing the work specified in the construction documents. (15 POINTS) 	15

<ul style="list-style-type: none"> • Create a submittal log for the electrical portion of the project. The purpose of a submittal log is to track the movement of submittal documents. This form should be created during the preplanning and updated regularly. In addition, teams will be asked to provide submittals for 3 items in the submittal log. (25 POINTS) 	25
<ul style="list-style-type: none"> • Teams will be asked to produce a minimum of 3 purchase orders for items they believe they will need to order for this project. When doing so, think about including a description of each item being purchased including quantities and prices, plan and specification references, packing and shipping requirements, etc (20 POINTS) 	20
<ul style="list-style-type: none"> • Teams will be asked to evaluate the project and identify prefabrication opportunities in the project. Be innovative in your approach to prefabrication, keeping an eye out for better, more efficient, and less expensive ways to get the job done. In addition, it is recommended that teams provide how many labor hours and total dollars they expect to save by using prefabrication. Teams should identify direct and indirect benefits of prefabrication in this section. (25 POINTS). 	25
<p>Application of Means and Methods: Schedule of Values, Pay Application, Schedule, and Change Orders</p>	
<ul style="list-style-type: none"> • Develop a schedule of values for the proposed electrical system. Provide sufficient detailed information to demonstrate that the team has considered how cash flow will be managed for the project. • Teams will also be asked to submit an AIA pay application for the months of February, March, and April. • In addition, teams are asked to create a detailed schedule that corresponds with the SOV and the Pay Applications. (50 POINTS) 	50
<ul style="list-style-type: none"> • As in real construction of a building, teams will be faced with changes in the project that result in a change order. Teams will be asked to review these changes, estimate the cost and additional schedule duration, provide detailed supporting documentation to substantiate the changes, and reflect the change order in their AIA pay application. (40 POINTS) 	40
<p>Interaction with ELECTRI and NECA</p>	
<ul style="list-style-type: none"> • Teams are required to have a minimum of 1 team member attend the following educational courses: <u>Virtual Project Management Training</u>: Teams are required to attend a minimum of 8 hours of online project management training classes. ELECTRI will offer four 2-hour courses in addition to providing cloud- 	60

based software for students to use for the challenge. Courses that will be offered include training in how to review a contract, training in how to properly execute a change order, Procore training, and training on how to create a schedule of values. Attendance will be accepted for both live and on-demand viewing. Student teams can also work with their local NECA contractor/chapter to schedule additional project management training courses. (40 POINTS)
Participate in Monthly Construction Innovation Webinars: Team members are required to participate in monthly webinars hosted by ELECTRI. Real-time participation is strongly encouraged, but recordings will be available if you cannot attend live. (20 POINTS)

- Teams are required to partner and interact with one or more NECA contracting members in the development and refinement of the team’s Electrical Contracting Innovation Challenge proposals. Provide a summary of the interaction the team completed with its sponsoring NECA chapter and local NECA contractors. This may include online meetings, phone calls, tours of facilities and project sites, etc. (40 POINTS)
 - Maintain a log of the team’s communication and interactions with the NECA contractors/chapter regarding the ECIC project and include it in the proposal’s appendix (10 POINTS).

50

- Teams are encouraged to include underclassmen (Freshmen, Sophomores, & Juniors) in the development of their team’s final proposal. We recommend these students own specific areas of focus tied to the overall challenge and for their efforts to be clearly documented. Potential areas of focus for underclassmen would be creation of submittals, participating in online training, interactions with local contractors, etc. For each (Maximum of 3) underclassmen assisting in developing content for the final proposal up to 25 points will be awarded to the team. Scoring will be based on documentation of underclassman’s overall participation in the challenge. Teams may receive less than the 25-point maximum based on the students overall impact on the proposal (75 POINTS)

Max - 75

Campus/Local Media Engagement

- Teams are encouraged to publicize participation in the Electrical Contracting Innovation Challenge in university/department newsletters, websites, social media, and local media. The submitted proposal should include at least one drafted or published article describing the team’s participation in the competition and summarizing the project. For each media outlet, be sure to use the hashtag #ECIC and tag ELECTRI International and NECA

Max – 40

(@ELECTRI_org and @necanet on Twitter),” along with identifying the NECA contractor who is supporting the team during the competition. Teams will be awarded (2 points each – up to a maximum of 20 points total for social media) for each LinkedIn, Twitter, Facebook, and Instagram post and 20 points total for magazine and e-publications. Include links to all additional published articles in the proposal’s appendix.

Format/Appearance

- Each team is expected to submit a final proposal as though it would be presented to the customer for consideration. The proposal should be in PDF format and include a Table of Contents detailing each of the sections in the order they are listed on this scoring checklist.
- Five (5) points will be deducted each time content is not placed in the requested order. Omitting the Table of Contents will result in a score of zero (0) out of 25 points for the Format/Appearance section.
- Proposals are expected to be of professional quality—with no spelling or grammatical errors, cohesive formatting throughout, and written in a uniform voice and style. Proposals should be no longer than 40 pages and submitted in color. (15 POINTS)
- An appendix may be added to provide additional material. The appendix may only include contractor engagement logs, media articles, product data sheets/cut sheets, and estimate backup documentation. There is no page limit on the appendix, but each item in the appendix must be cited in the proposal using the format: (See Appendix, page XXX). (10 POINTS)

25

TOTAL POSSIBLE POINTS

505

Oral Presentation

ELECTRI International will provide the Rules and Regulations for the Oral Presentation to the three finalist teams selected by the competition jury.

Video Presentation

Each team is encouraged to document digitally its ECIC proposal preparation, interactions with the organization and NECA contractors. The video the team submits for the 2023 ELECTRI ECIC Video Competition must be no longer than three minutes duration. It should include a summary of the team's experience for the first 30 seconds. The remaining 2.5 minutes should highlight the team's creativity due to the challenges caused by current circumstances, with NECA chapters, members, and community outreach services. The video can be set to music and/or narrated. **The more creative the better!**

All videos will be shown to the ELECTRI Council during its July 2023 meeting. The top three videos selected by the Council will be shown prior to the EC Innovation Challenge oral competition at the NECA Convention and some of the videos will be posted to the ELECTRI website. The final three videos will be scored by contractors attending the Convention with each finalist video receiving a financial award from ELECTRI International as detailed below.

Awards

Three finalist teams will receive a financial award for their respective university program, a plaque, and \$2,000 in travel support from ELECTRI International to attend the NECA Convention. The award for the Best Presenter goes directly to the student winning this category. The awards for most innovative electrical system, best project estimate and best social media post are open to any teams that submit a final proposal.

Team Presentation

1 st place	\$4,000
2 nd place	\$3,000
3 rd place	\$2,000

Video Competition

1 st Place	\$1,000
2 nd Place	\$ 750
3 rd Place	\$ 500

Best Presenter	\$500 (Awarded to Individual)
Most Complete Change Order	\$500 (Awarded to Student Team)
Most Innovative Prefabrication Plan	\$500 (Awarded to Student Team)
Most Influential Social Media Campaign	\$500 (Awarded to Student Team)

Travel Support and Complimentary Registration for the NECA Convention

All members of each finalist team and the team faculty advisor will receive complimentary registrations to the NECA Convention.

SCOPE OF WORK

ELECTRI International

1201 Pennsylvania Ave. NW, 12th Floor

Washington, D.C. 20004

Attention: Ms. Alisha Heath, Estimator

Reference: Oglethorpe University Emerson Student Center

Ms. Heath,

Our company is pleased to provide our proposal for the electrical scope of work on the Oglethorpe University Emerson Student Center project. Our proposal is based on the following clarifications and a mutually agreeable contract:

Basis of Proposal

Our proposal is based on the following:

- Specifications Vol. 1 & 2, dated 4/26/2012
- ECIC Consolidated Plan Set, dated 4/26/2012
- ECIC Fully Answered Questions, issued 04/12/2022
- The schedule provided with this proposal, dated 04/23/2022

DIVISION 01 – GENERAL CONDITIONS

Includes:

- All work to be performed during normal working hours, Monday through Friday 7:00AM to 3:30PM.
- Subcontractor agrees to adhere to the project schedule, which is updated on weekly basis after subcontractor coordination meetings
- Phasing and logistics considerations are included. Reference attached logistics plans, if applicable.
- A monthly progress bill projecting work through the end of the month, complete with an updated Subcontractor Reconciliation, is due on the 15th of every month via email to the GC.
- Electrical Studies per specification 260573-Power System Studies Short Circuit, Protective device coordination study, Arc Flash, and shock risk assessment.

- Changes shall be submitted with appropriate breakdown of quantities, labor hours, labor rates, material rates/back up, sub-tier contractor backup and shall include breakout for Material, Equipment, Labor, and Subcontractor Mark-Up. Overhead and Profit is limited to what is described in the contract.
- One Year Warranty from phased substantial completion
- Temporary Power and Lighting for the interior project space only
- This proposal is based on utilizing prefabricated electrical components. This includes, but is not limited to, installing wiring devices during the prefabrication process prior to the installation of drywall.
- Electrical Permit Costs
- Subcontractor shall submit MSDS sheets, safety work plan, and certificate of insurance at least 7 calendar days prior to mobilization on site. Failure to submit these items prior to starting work may be cause for removal of Subcontractor's forces from the jobsite. Subcontractor shall be responsible for any schedule delays due to this removal.
- Subcontractor shall conduct WEEKLY safety meetings onsite with its personnel, and shall submit a record of meeting and attendees to GC superintendent within 48 hours of each meeting

Excludes:

- Liquidated Damages
- Schedule Impacts due to material market volatility or shortages
- Impacts from any laws, regulations, rules, or requirements imposed upon the project or workforce in connection with the coronavirus and its variants including, but not limited to, mandatory vaccinations, testing, masking, or distancing of the work force
- If any of the above are imposed after the proposal date, the project will be subject to schedule extensions and/or cost increases that result from these requirements
- Full-time dedicated safety representative
- Bond – If required, add 1%
- Sales Tax
- Dumpsters
- Overtime considerations – All work shall be performed on normal time
- Fire stopping or acoustical sealants
- Utility Fees and/or charges
- Patching or painting
- M/W/V Participation

BASE BID

Demolition

- Electrical demo of existing underground feeders provided per site plan E-002. No other demo is included.

Site

- Includes furnishing & installing all conduit, pull strings, marker tape, equipment, duct bank spacers, concrete encasement, handholes, excavation, compacted aggregate sub base, and backfill for a complete underground electrical scope of work.
- Includes excavation/trenching for underground conduit/equipment, and backfilling/compacting with suitable materials as defined on the documents.
- Includes all handholes on site that are in paved areas subject to vehicular traffic shall be traffic rated.
- Includes all excavation and concrete encasement for feeders included per drawings.
- All branch will be installed in schedule 40 PVC
- Includes all excavation and precast pole bases included for sire lighting per drawings.
- Includes all site poles as indicated in the drawings and the schedule.

Primary Power Distribution

- Furnish and install of power distribution equipment and associated feeds, connections per the one-line diagrams and schedules provided
 - We assume panel schedules take precedence over one-line drawings
- Arc Flash Testing
- All wire used in this project is copper. No aluminum was used for this proposal.

Lighting

- Provide and install complete lighting package as shown in drawings and fixture schedule.
- Provide and install all associated lighting branch for both power and controls.
- Control cable and raceway is installed as shown in the Lighting Controls Riser Diagram as indicated in drawing E-009.
- Provide and install MC cable for all branch wiring excluding homeruns. Homeruns will be conduit and wire.

Power

- Includes all power devices as shown in the drawings.

- All wire used in this project is copper. No aluminum is used for this proposal.
- Includes all equipment connections as shown in the drawings and as described in the equipment schedule.
- Provide and install MC cable for all branch wiring excluding homeruns. Homeruns will be conduit and wire.
- Includes all disconnects required to be installed and provided by the electrical contractor according to the drawings.
- Includes all gear and disconnects as shown in the drawings.
- EXCLUDES the utility pad.
- EXCLUDES any equipment pads.
- EXCLUDES any overtime for turnover from existing gear to new gear.

Systems

- Furnish and install fire alarm system components, wiring and connections per the systems floor plan on sheets E-301 and E-302.
 - Pull Stations, Strobes, Switches, Duress Buttons, Photoelectric detectors, and associated cable
- We have based our proposal on using open wiring method for the fire alarm
- Includes all rough in for the telecommunication devices.
- Includes rough in for security devices cable provided by others.

PRICING SUMMARY

Base Proposal	\$ 1,790,630.00
Alternate #1 Use LED Light Fixtures in Lieu of Fluorescent.....	Add \$ 69,650.00

We sincerely hope this quotation will allow us to be of service to you and your company. If we may be of further assistance, please feel free to contact me.

LABOR RATES

Classification	Pay Rate	Total Burden Rate	10% 20%		
			Cost Rate		
			1st Shift	2nd Shift	3rd Shift
General Foreman	47.99	45.43	93.42	102.76	112.10
Lead Foreman	45.86	44.40	90.26	99.29	108.31
Foreman	45.53	44.23	89.76	98.74	107.71
Journeyman	40.66	34.60	75.25	82.78	90.30
5th Period App	33.38	24.01	57.39	63.13	68.87
4th Period App	29.40	22.84	52.24	57.46	62.69
3rd Period App	25.54	12.02	37.55	41.31	45.06
2nd Period App	22.23	10.08	32.31	35.55	38.78
1st Period App	19.04	8.75	27.79	30.57	33.35
Electrician Helper 3	17.30	7.45	24.75	27.23	29.70
Electrician Helper 2	16.24	7.28	23.52	25.88	28.23
Electrician Helper 1	15.23	7.13	22.36	24.60	26.83
Mkt Rec Foreman	28.11	22.82	50.94	56.03	61.12
Mkt Rec Journeyman	25.54	22.18	47.71	52.48	57.26
Construction Electrician Foreman	28.11	12.41	40.52	44.57	48.63
Construction Electrician (CE)	25.54	11.83	37.36	41.10	44.84
Construction Electrician 3 (CE3)	21.67	9.84	31.51	34.66	37.81
Construction Electrician 2 (CE2)	17.30	8.85	26.15	28.77	31.38
Construction Electrician 1 (CE1)	15.23	8.38	23.61	25.97	28.33