CUBA INFRASTRUCTURE STUDENT COMPETITION 2020

Today's Solutions for Tomorrow's Cuba

C-AACE and ACAE

GUIDELINES FOR PRESENTATION OF STUDENTS' PAPERS AT THE CUBA INFRASTRUCTURE STUDENT COMPETITION

Association of Cuban-American Engineers
Asociación de Ingenieros Cubano-Americanos

Cuban-American Association of Civil Engineers

August 2019

OVERVIEW

The Cuba Infrastructure Student Competition (CISC) is sponsored by the Cuban-American Association of Civil Engineers (C-AACE, www.c-aace.org) and the Association of Cuban-American Engineers (ACAE, www.cubanamericanengineers.com). It entails that university-level student teams formulate and present a project of their choice on the reconstruction of Cuba's public infrastructure that relates to the engineering field in transportation, water resources, power, telecommunications, healthcare or agriculture. Any questions regarding the competition guidelines should be directed to the Chair of the CISC Committee by contacting Dr. Regina Rodriguez (rrodriguez@cubanamericanengineers.com, (305) 803-7387) and Sergio Claure (sclaure@cubanamericanengineers.com , (305) 318-7939)

HISTORY

The C-AACE and ACAE, through their infrastructure committees (transportation, water resources, power, telecommunications, healthcare and agriculture engineering), have encouraged university students to submit papers on Cuba's infrastructure to the competition and to infrastructure sessions of the annual conference of the U.S-based Association for the Study of the Cuban Economy (ASCE), an affiliate of the American Economics Association. The papers and presentations have been well received by professionals in attendance, and have stimulated student interest in this topic. The C-AACE and ACAE hope that more engineering students, at the university level, will become interested in applying their skills to future efforts to reconstruct public infrastructure in a free enterprise Cuba, and that in doing so they will collaborate with our associations, including becoming members and bringing their knowledge and new ideas to address this important topic. We believe that the complex issue of reconstructing Cuba's infrastructure will challenge students and provide them with valuable experience that will prove rewarding to them through this process. Each student team will choose a project on their own. If student teams need any assistance in finding a problem statement to develop, they should contact the Chair of the CISC Committee (contact information previously provided).

PURPOSE

The C-AACE/ACAE Cuba Infrastructure Student Competition is intended to promote both (1) "real world" analysis and/or design experience for students interested in pursuing an education and/or career in public infrastructure engineering and related sciences; and (2) improve the body of knowledge on Cuba's infrastructure in these fields. This scholarship competition invites teams of university-level students from Accreditation Board for Engineering and Technology (ABET) programs to analyze and/or design and present a project meeting the requirements of a problem statement that they have worked on together as a team.

STUDENT COMPETITION

The engineering student scholarship competition is about solving problems relating to Cuba's public infrastructure needs and its reconstruction in a future free enterprise Cuba in any of the fields listed above. The organizers recognize that infrastructure implementation involves not only engineering but also other related disciplines such as economics, urban planning and sociology. Being that the organizers are engineering associations, the focus of the papers should be engineering; inclusion of any other related disciplines if appropriate should be only in an incidental and secondary fashion, and preferably in the form of facts and figures rather than qualitative value judgments. Likewise, expression of political value judgments and opinions is discouraged as being outside the desired scope of this

scholarship competition; students are encouraged to seek alternate appropriate venues for such expressions.

The following are examples of potential topics for project submittals within the different areas of infrastructure:

- Transportation: traffic analyses, evaluations of different modes of transportation including public transit, and design of roads and highways.
- Water resources projects: hydrology and hydraulic analyses, such as sustainable withdrawal studies and flood control studies.
- Water supply projects: water master planning and traditional design of supply, treatment and distribution systems.
- Wastewater projects: traditional wastewater design projects, hydraulic capacity design, upgrades to existing systems, and biosolids handling.
- Environmental projects: current contemporary engineering topics such as sustainability, water reuse, wetlands construction, ocean outfalls/coastal zone management, etc.
- Telecommunications projects: plans for fiber optic cables, internet access, intelligent cities, handling of data and cloud services, and cell phone access.
- Electrical power projects: smart grid systems, projections of the future capacity needs, construction of new plants versus modernizing existing ones, modes of energy production (natural gas, combined cycle, solar, wind), and evaluation of transmission lines including the number of miles needed and state of present ones.
- Energy-related projects: "green architecture" and building codes for energy efficiency in buildings.
- Healthcare infrastructure: inventory of existing healthcare equipment and needs for the current and future population, location and capacities of hospitals and their current state of operation, emergency transportation and access to hospital facilities, and supply chain management of medical supplies.
- Agriculture projects: technology and facilities for crop production and animal husbandry, and transportation to market.
- Growth Management: Feasibility of industrialization in Cuba.

The scope and extent of the project should be at the level of a senior undergraduate or graduate engineering/science student. The students are expected to work with little assistance from an advisor and/or professor. The students are expected to work together as a team. They may use whatever references or resources they choose. To enhance the learning experience for the students, and to maximize the quality of their papers and accordingly their chances of winning, students are required to work with the assistance of a practicing mentor, preferably an engineer. Students may choose a practicing mentor on their own or they may contact the Committee Chairs to be paired up with a C-AACE/ACAE practicing mentor based on his/her area of practice and the team's project scope.

Students are expected to perform the necessary analysis for the project. This scholarship competition is not intended to be limited to a research project or literature review. However, some literature review and/or research will be required.

For example, if the project involved a water distribution system expansion or upgrade, judges should verify that the team performed population analyses and design flow projections, hydraulic calculations, sizing of pipes, evaluation and selection of pipe material based on manufacturers' information,

preliminary evaluation of costs and a brief evaluation on societal impact such as public health improvements and mitigation of traffic disruption.

SCHOLARSHIP AWARDS

The C-AACE and ACAE will be awarding scholarships to the top three ranked teams. The 2020 scholarships, as described in the table below, will be awarded at a joint event of the two organizations usually held in the month of February. Participating teams will be recognized at the Annual Gala of the two organizations usually held in the month of March.

Team Ranking	2020 Team Scholarship Award
First	$6,000
Second	$4,000
Third	$2,000
Other top ranked teams invited to present their project.	$600 Participation Incentive
Any other teams submitting a paper that scores at least 30 points.	$100 Participation Incentive

Also, the members of teams scoring first place will be awarded a one-year free membership in either C-AACE or ACAE. The award committee reserves the right to not make an award if the quality of the projects does not meet minimum professional standards.

COMPETITION SUBMITTALS AND DEADLINES

Deliverable	Deadline	Description
CISC Participation Form	October 25th, 2019	Presentation subject, short abstract, final team contact, membership, presentation team information and mentor confirmation.
Progress Report	December 13th, 2019	An extended abstract or progress report to be submitted in order to remain eligible for the final submission.
Final Project Report Submittal	February 21st, 2020	See guidelines for this deliverable below and attached (no PowerPoint presentation needs to be submitted at this time, only the Report in **both** MS Word and PDF formats).
Presentation	April 4th, 2020 (*day of final presentations*)	PowerPoint files must be submitted by 5:00 P.M. on the day prior to Final presentations.

Final presentation materials should be submitted in PowerPoint, overhead or other format. A/V equipment will be made available, including laptop computer, projector and screen. Other A/V needs including remote conferencing, if applicable, should be coordinated in advance of the presentation. Travel assistance may be available upon request for those traveling outside of the South Florida region.

Teams receiving awards are encouraged to participate in the U.S-based Association for the Study of the Cuban Economy (ASCE) annual student paper competition. For exact date and submission information please visit the ASCE web site at: http://www.ascecuba.org/.

GENERAL REQUIREMENTS

The general requirements for the preparation of the entry are as follows:

- Team size should be limited to a maximum of four (4), so that the learning and participatory benefits to each student are maximized.
- Each member of each team must be a university student in good standing or a recent graduate who has left the university within one (1) year of the date of the competition.
- The subject matter or presentation shall comply with the purpose of the Cuba Infrastructure Scholarship Competition.

WRITTEN DATA REQUIREMENTS

Each entry shall include written data that complies with requirements set forth in the following section on "Written Data Requirements". Competition entries shall be in both MS Word and PDF format provided on a CD or by email. Special indices, bookmarks, or other features are appreciated, but not required.

The following shall be included in the written data submittal (in the order shown):

1) The project name and team name shall be affixed to the disk and case (CD) or included as the file name.
2) Page 1 of the Report shall be the completed CISC Participation Form
3) Page 2 of the report should include a summary of the project team, including:
   - Each member's role in the effort
   - Acknowledgement of any others that assisted in the effort
4) Page 3 may include a title page, followed by a discussion of the project (**not to exceed 5,000 words, line spacing: double-spaced)**. The discussion must cover the salient facts upon which the recommendation is made, give a clear analysis of the evaluation technique, and present a clear recommendation of action. Relevant data should be presented in the discussion in clear form.
5) Color diagrams, charts and photographs that reflect the unique features of the project. Each graphic/photo is to be identified with an appropriate descriptive caption.
6) Drawings, calculations, tables, and other supporting documents.
7) All entry materials become the property of the C-AACE and ACAE. Top entries making oral presentations will be compiled into the Proceedings of the event.

8) A complete bibliography should also be included, if appropriate.

9) The manuscript should conform to one of the standard academic writing and citation styles.

JUDGING CRITERIA/SELECTION

The event will be judged by an impartial panel consisting of at least two (2) members of the C-AACE and ACAE, and private industry (engineering consultant firms and manufacturers) representatives. The judging team shall have no direct affiliation/representation with any university participating or engineering firm involved as part of the project. All written data and oral presentations will be judged by the same panel of judges. Points will be awarded as follows:

SELECTION CRITERIA		**POINTS**
Written Paper (40 points)		
1	Clear statement of objectives (or thesis) and relevance to Cuba's engineering infrastructure needs	10
2	Organization and Sequencing including whether it reflects the steps of the research process and the extent of evidence to support the main objective or thesis of the paper. Proper Use of Language (Grammar, Spelling and Punctuation)	10
3	Originality and Creativity	10
4	Evidence and Thoroughness of Approach	5
5	Economic Analysis	5
Oral Presentation (60 points)*		
6	Organization and Delivery (Verbal Proficiency and Non-Verbal Image of Presenters)	20
7	Coverage within the Time Limit	10
8	Proficiency in Answering Questions (Effectiveness and Poise)	15
9	Quality and Creativity of Presentation Materials	15
TOTAL POINTS		**100**

***The top ranked teams after evaluation of the written papers will be invited to make Oral Presentations before the judges and audience.**

The judging scores will be made available to all participants after the event along with comments or observations from the judges to enhance the learning experience.

PRESENTATION REQUIREMENTS

Each team will be allowed a twenty five (25) minute block of presentation time. The time will be used to make a fifteen (15) minute presentation directly followed by up to a ten (10) minute question and answer session led by the judges. Additional questions from the audience may be allowed depending on the available time.

INTERNET LINKS

Internet links that may be of use for this event are listed below:

- www.c-aace.org
- www.cubanamericanengineers.com

2015 Competition Submissions:
http://clickeventonline.com/event/education/150228-CubaInfrastructure2015.htm

2016 Competition Submissions:
http://clickeventonline.com/event/education/160227-CubaInfrastructure2017.htm

2016 Live Feed:
http://clickeventonline.com/event/education/160227-CubaInfrastructure2017_TD.htm

2017 Live Feed:
https://www.youtube.com/watch?v=zVkiV2h8kxk&feature=youtu.be

2018 Live Feed:
https://www.youtube.com/watch?v=v3vTSlYcSp4

2019 Live Feed:
https://www.youtube.com/watch?v=tJBJjJ_LgtY

QUESTIONS OR COMMENTS

Please review the entire package and contact Regina Rodriguez (rrodriguez@cubanamericanengineers.com, (305) 803-7387) and Sergio Claure (sclaure@cubanamericanengineers.com, (305) 318-7939) for any clarification on any of the rules or guidelines of the program.

Good luck and thank you for your interest and support!!

Participants AGREE THAT ALL TEAM MEMBERS HAVE READ AND UNDERSTAND THE RULES, AND MEET ALL THE REQUIREMENTS NECESSARY TO COMPETE. The Cuban-American Association of Civil Engineers (C-AACE, www.c-aace.org) and the Association of Cuban-American Engineers (ACAE, www.cubanamericanengineers.com) and its Executive Officers and Directors at large are not responsible for claims and demands of whatever nature, actions and causes of action, damages, costs, loss, of service, expenses, and compensation on account of or in any way growing out of personal injuries and/or property damage having already resulting at any time in the future as a result and by reason of my/our participation in this event.

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2020 CUBA INFRASTRUCTURE STUDENT COMPETITION

Participation Form

Team Name:

University:

Faculty Advisor:

Does the team already have a C-AACE/ACE Member Industry Advisor? **Yes** ☐ **No** ☐

If you selected "Yes" above, please enter your C-AACE/ACE Member Industry Advisor's name in the box below:

Team Members:

#	*First Name*	*Last Name*	*Degree/Major*	*Expected Graduation Date*	*E-mail address*
1					
2					
3					
4					

Team Leader Contact Information:

Name	
Phone	
Address	
E-mail	

Project Title:

Project Abstract (*150 words max***):**

PLEASE E-MAIL THIS FORM TO THE CISC COMMITTEE CHAIR: DR. REGINA RODRIGUEZ (RRODRIGUEZ@CUBANAMERICANENGINEERS.COM) AND SERGIO CLAURE (SCLAURE@CUBANAMERICANENGINEERS.COM) BY THE DEADLINE ESTABLISHED IN THE DISTRIBUTED CISC GUIDELINES OCTOBER 25TH.