

## AMERICAN SOCIETY OF AGRICULTURAL AND BIOLOGICAL ENGINEERS

### Northeast Agricultural/Biological Engineering Conference (NABEC)

#### NABEC UNDERGRADUATE STUDENT DESIGN COMPETITION

1. Purpose: The purpose of the ASABE-NABEC Student Design Competition is to encourage students to participate in the basic design of an engineering project useful in agriculture or forestry and to provide a special type of experience not obtained in the classroom.
2. Eligibility; All Students enrolled in an undergraduate Agricultural and Biological Engineering, Forest Engineering or related curriculum in the universities in the NABEC area are eligible to compete in this design competition providing they were undergraduate students while working on the design project being submitted in the competition. A person who has received his Bachelor of Science degree at the time of the competition can participate only if his degree was received within the previous academic year.

Projects submitted for the competition may be the result of a group activity or an individual activity. Projects entered in the student paper competition are not eligible for the design competition or projects entered in the design competition are not eligible for the student paper competition.

3. Competition Entry Requirements; Projects must involve engineering design, which is the process of devising a system, component, or process to meet a desired need. It involves synthesis and decision-making processes (often iterative), in which the basic sciences, mathematics, and engineering sciences are applied to convert resources optimally to meet a stated objective. The words "system, component or process" and "convert resources optimally" operate to indicate that sociological, economic, aesthetic, legal ethical, etc., considerations can be included. All projects must be related to agriculture, forestry, engineering or related fields. The design projects must include: 1) A written report (see format for entries). 2) Drawings and/or specifications that describe the design and 3) *Extensive or substantial test or performance data obtained from a) a prototype or physical model of the machine or critical component, and/ or b) a computer simulated test of the system or process.* The entries will conform to the instructions given in "Format for ASAE-NABEC Student Design Competition Entries." Entries shall be submitted **electronically** to the Chair of the Student Paper Competition Committee.
4. Judging Procedure: Three judges will be selected each year by the Executive Committee of NABEC. The judges will use the score sheet included with these rules. Average scores will be used to determine the winner.
5. Awards - 1st Place \$200.00, 2nd Place \$150.00; 3rd Place \$ 100.00  
The first place winner will be reimbursed a maximum of \$350.00 for expenses to attend the annual meeting of ASABE-NABEC and present his/her design paper. A team will be reimbursed up to \$500.00 for expenses.
6. Submission Date: 5:00 PM EDT, May 19, 2018. Entries, **complete with summer contact information and mailing addresses for all authors included in the email**, shall be submitted **electronically** by the submission date, preferably in pdf format to:

NABEC Student Paper Competition Committee Chair, Dr. **Satyanarayan Dev**

Email:

[satyanarayan.dev@mcgill.ca](mailto:satyanarayan.dev@mcgill.ca)

Department of Bioresource Engineering  
McGill University / Florida A&M University

7. National Design Competition Eligibility; The two top eligible entries in the ASABE-NABEC Student Design Competition can be submitted for the AGCO Student Design by the authors. For rules and regulations of the National Design Competition, the ASABE Student Manual should be consulted. To enter the National Design Competition, the student must be a student member of ASABE.

**FORMAT FOR NABEC STUDENT DESIGN COMPETITION ENTIREES**

**1. Title Page**

The cover page of the entry shall state:

- a. Title of the paper
- b. Full Name(s) of the contestant(s)
- c. Name of the department and school
- d. Name(s) of the adviser(s) for the paper
- e. Expected date(s) of graduation
- f. Date on which the paper is submitted for the regional contest
- g. Scanned signatures of contestant(s), adviser(s), and the student branch Faculty Adviser (department head if no student branch exists)
- h. The date of signing

In the case of multi-authored papers, all correspondence will be directed to the first author unless otherwise requested as a footnote on the cover page.

**2. Second Page: The second page shall contain the following:**

- a. A statement of how the subject was chosen
- b. An abstract of the paper
- c. Acknowledgements

**3. Third Page: The third page shall contain the Table of Contents.**

**4. Organization: Each paper shall be organized under appropriate headings. The presentation shall follow a logical pattern and conform to good technical writing standards. Drawings and/or specifications and test data should be entered as appropriate.**

**NABEC STUDENT DESIGN COMPETITION SCORE SHEET**

Evaluation Criteria	Maximum Score
I. Project	
A. Establishment of Need and Appropriateness to the Field	9
B. Approach and Originality	9
C. Definition of Design Objectives and Criteria	9
D. Extent of Analysis and Synthesis of Alternatives	16
E. Evidence of Sound Evaluation and Adherence To Good Engineering Design, and Safety Consideration	10

Evaluation Criteria	Maximum Score
F. Adequacy of Drawings and Specifications	7
G. Appropriateness of Tests and/or Performance Data	7
H. Achievement of Objectives	11
II. Written Report	
A. Organization, Clarity, and Ease of Reading	12
B. Effective Use of Graphics, Illustrations, Video, etc.	5
C. Neatness, Accuracy and Style	5
TOTAL	100