

Society of Hispanic Professional Engineers
September 2006



AHETEMS

DESIGN COMPETITION

REVISION 1.9.1.06

AHETEMS Foundation, Inc.
The University of Texas at Arlington
PO Box 19019
Arlington, TX 76019
www.shpe.org and click on "Education Programs"

**2006-2007 AHETEMS FOUNDATION DESIGN COMPETITION
GUIDELINES**

TABLE OF CONTENTS

Purpose	2
Eligibility	2
Design Criteria	2
Team Mentors	2
Preliminary Stage	
Required Documentation	3
Deadline	3
Abstract	3
Design Concept Paper	3
Finalist Stage	
Selection	4
Working Model/Prototype	4
Formal Presentation	4
Pre-Registration, Travel and Design Materials Compensation	4
Awards	5
Information Release	5
Contact Information	5
Deadlines	5
Design Entry Form	6
Appendix	
Judging Criteria – Preliminary Stage	7
Judging Criteria – Final Stage	8

2006-2007 AHETEMS FOUNDATION DESIGN COMPETITION GUIDELINES

PURPOSE

The AHETEMS Foundation Design Competition is intended to stimulate a creative intellectual and entrepreneurial spirit, develop technical presentation skills, engender a team spirit and instill cooperation essential in a design project. This competition demonstrates to industry the technical and business capabilities of engineering and science students and illustrates that a successful idea need not be expensive to design and build.

ELIGIBILITY

Participants must be undergraduate students with a current SHPE membership. Students, who are not current SHPE members, must become SHPE members prior to submitting an entry for this competition. (Graduate students and professionals may only serve as mentors. The mentors must also be SHPE members).

Design teams may consist at a minimum of two (2) undergraduate students and a maximum of six (6) undergraduate students.

There is no limit on the number of design teams per college/university.

Students may only compete as a registered member of one (1) team. If a student competes in more than one team, *all* those respective teams will be disqualified.

Designs or inventions funded by an external source (i.e., NSF grant, government research/training grant, corporate-sponsored research) are not eligible for submission.

Senior projects or theses are not eligible for submission.

DESIGN CRITERIA

The submitted design must be a commercially marketable product that has both a unique social benefit and improves the quality of human life. This design shall not be a duplicate of a currently existing commercial product, but can be an improvement to a currently existing commercial product. The design should be creative, but demonstrate technical merit.

TEAM MENTORS

Each team may solicit the assistance of no more than two (2) graduate students or engineering professionals from industry, academia, or government to serve as mentors. The mentor(s) may assist the team in detailing the design, and if selected as a team finalist, in developing the presentation charts and rehearsing the oral presentation. The name(s) and organization(s) of the mentor(s) must be included in the design concept paper.

**2006-2007 AHETEMS FOUNDATION DESIGN COMPETITION
GUIDELINES**

PRELIMINARY STAGE

REQUIRED DOCUMENTATION

Students interested in participating in the design competition must submit the Design Competition Entry Form, an abstract and a design concept paper. *No materials will be accepted by fax.* Materials may be submitted electronically to designcomp@shpe.org in MS Word 97 or later. No Portable Document Format (PDF) will be accepted. Abstracts and design concept papers received in any format other than Microsoft Word will be automatically disqualified.

DEADLINE

The Design Competition Entry Form, abstract and design concept paper must be postmarked by **11:59 pm PST, Friday, October 20, 2006.** Entries postmarked after this date/time will be automatically disqualified.

ABSTRACT

The length of the abstract should be between 300 – 400 words. It should be a concise summary of the design concept. The format of the abstract must adhere to the following:

- Typed,
- Single-spaced
- 1-inch margins,
- Times New Roman, and
- 12-pt font.

DESIGN CONCEPT PAPER

The length of the design concept paper is at the discretion of the design team. However, it should be sufficient to technically explain and illustrate the design concept to the reviewers. At minimum, the paper should include an introduction, background, intent of design, statement of the problem the design is addressing, and proposed or actual design testing and evaluation.

The paper should also include detailed illustrations of the dimensions, scale, orthographic projection (top, side, front views), and a 3-D view of the design. A developmental/production cost analysis must also be included. You may make assumptions on the quantity to ensure a low cost. Segregate costs by non-recurring (engineering) and recurring (production) costs. Designs without a cost analysis will be immediately rejected.

The format of the design concept paper must adhere to the following:

- Typed,
- Single-spaced,
- 1-inch margins,
- Times New Roman, and
- 12 pt Font.

Graphs, charts, tables and references must adhere to **APA 5th Ed.** formatting.

**2006-2007 AHETEMS FOUNDATION DESIGN COMPETITION
GUIDELINES**

FINALIST STAGE

SELECTION

A qualified team of engineers from industry, academe and government will review the abstracts and design concept papers to select the ten (10) team finalists to proceed in the production of a design model or prototype to be presented on Thursday, January 11, 2007, at the SHPE National Technical Career Conference (NTCC) in Denver, Colorado.

The abstract and concept paper will be evaluated on a 150-point scale.

WORKING MODEL/PROTOTYPE

Finalists must demonstrate a ***working*** model or prototype of their design at the 2007 SHPE NTCC. Emphasis will be placed on demonstrating a ***working*** model or example of the design. Be sure that you account for every eventuality, and have a back-up plan or resource. *Team finalists, who fail to present a working model or prototype, will be required to reimburse any and all travel, pre-registration and design material stipends.*

FORMAL PRESENTATION

The team finalists will make a formal presentation before a panel of judges chosen from industry, academia, and government. The presentation will be open to the general audience attending the 2007 SHPE NTCC.

Although presentations may be made using an LCD projector, presenters **must** supply their own laptops, input devices, jump drives, etc. Presentations will be limited to a maximum of twenty (20) minutes. An additional ten (10) minutes will be allotted for questions from the judges and the general audience.

The presentation will be evaluated on a 160-point scale.

PRE-REGISTRATION, TRAVEL AND DESIGN MATERIALS COMPENSATION

Each of the team finalists will be awarded \$500 to proceed in the development of their formal presentation¹. No additional funds for shipping the prototype or otherwise will be provided. In addition, each team member will receive a four-night 2007 NTCC **pre-registration package** and a \$100 travel allowance². One team mentor will also be provided a 2007 NTCC pre-registration package and a \$100 travel allowance³. Each of the finalists **must pre-register** by **November 17, 2006**.

¹ \$250 will be awarded beginning November 17, 2006; \$250 will be awarded after the NTCC. Teams are required to retain all receipts as they must be submitted to the AHETEMS Foundation to receive the appropriate compensation for the design materials.

² Participants who either fail to pre-register or select to register for a five-night package, are responsible for paying the difference in registration costs.

³ Mentors who either fail to pre-register or select to register for a five-night package, are responsible for paying the difference in registration costs.

**2006-2007 AHETEMS FOUNDATION DESIGN COMPETITION
GUIDELINES**

AWARDS

Winners will be announced at either the NTCC luncheon or banquet. The following scholarship awards will be presented to the winning teams:

First Place	\$3,000
Second Place	\$2,500
Third Place	\$2,000

INFORMATION RELEASE

By participating in the AHETEMS Foundation Design Competition, the authors and mentors of the design concept grant permission to SHPE, Inc. and AHETEMS, Inc. to publish and release, in whole or in part, information and illustrations about their design concept, participant photographs, contact information, and institutional and/or employer affiliation, and other such information for audio, video and print media.

Furthermore, the authors and the mentors of the design concept retain the rights to further develop and/or market **their own** design concept.

However, neither SHPE, Inc. nor AHETEMS, Inc. guarantees the protection of the design concept.

CONTACT INFORMATION

All questions and requests for additional information should be directed to designcomp@shpe.org.

DEADLINES

Competition guidelines posted on NTCC Web site	September 1, 2006
Deadline for Design Form, abstract, and design concept paper	October 20, 2006
Acceptance notices sent to ten finalist teams	November 10, 2006
50% of design materials stipend sent to finalists	
Finalists must pre-register for NTCC	November 17, 2006
Confirmation attendance notice sent to finalists	December 1, 2006
Formal design competition presentation	January 11, 2007
Winning teams announced	January 12 or 13, 2007

**2006-2007 AHETEMS FOUNDATION DESIGN COMPETITION
GUIDELINES**

DESIGN ENTRY FORM

College/University: _____

Title of Design: _____

Team Captain

Name (First, Last)

Mailing Address/City/State/Zip

Primary Email Address

Phone Number

Major Field of Study

Classification
 Freshman Sophomore Junior Senior

NOTE: All correspondence, mailings, check disbursements, etc. will be sent to the Team Captain.

Team Members (maximum of five):

NAME (First, Last)	MAJOR	CLASSIFICATION
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Team Mentors (maximum of two)

Name (First, Last)

Name (First, Last)

Place of Employment

Place of Employment

Primary Email Address

Primary Email Address

Submit form, abstract and concept paper to:

AHETEMS Foundation, Attn: Design Competition
The University of Texas at Arlington, College of Engineering, Box 19019, Arlington, TX 76019-0019
(817) 272-0776 (O) • (817) 272-2548 (F) • designcomp@shpe.org

**2006-07 AHETEMS Design Competition
Preliminary Round
Judge's Score Card ***

Project Name _____

Judge's Initials _____

ABSTRACT

30 Possible Points (20%)	Points Possible	Points Earned
The extent, which the abstract meets the required word count of 300-350 words	5	
The extent, which the abstract conforms to the required formatting: typed, single-spaced, 1-inch margins, Times New Roman, 12 pt Font.	10	
The extent, which the abstract clearly summarizes the design concept.	15	
Total Score	30	

PAPER

120 Possible Points (80%)	Points Possible	Points Earned
Introduction	5	
Background	5	
Intent of Design	10	
Statement of the Problem the Design is Addressing	5	
Proposed or Actual Design Testing	10	
Detailed illustrations of the dimensions, scale, orthographic projection (top, side, front views), and a 3-D view of the design	10	
Developmental/Production Cost Analysis	10	
The format: typed, single-spaced, 1-inch margins, Times New Roman, 12 pt Font.	5	
References, tables, graphs, charts are in proper APA 5 th Ed.	5	
Overall, technically sufficient in explaining design concept	10	
Overall, sufficiently illustrates the design concept	10	
Overall Originality	15	
Overall Innovation	10	
Supporting Research	10	
Total Score	120	

Total Score (Abstract + Paper) _____

* Subject to change.

**2006-07 AHETEMS Design Competition
Final Round
Judge's Score Card ***

Project Name _____

Judge's Initials _____

PRESENTATION/PROTOTYPE

160 Possible Points	Points Possible	Points Earned
Intent of Design	15	
Actual Design Testing	20	
Detailed illustrations of the dimensions, scale, orthographic projection (top, side, front views), and a 3-D view of the design	15	
Extent that a working model or prototype of the design is presented	50	
Developmental/Production Cost Analysis	10	
Overall, technically sufficient in explaining design concept	10	
Overall, sufficiently illustrates the design concept	10	
Overall Originality	10	
Overall Innovation	10	
Supporting Research	10	
Total Score	160	

Total Score _____

** Subject to change.*



The Society of Hispanic Professional Engineers

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office: (323) 725-3970 fax: (323) 725-0316

www.shpe.org membership@shpe.org

**SHPE AHETEMS
2006-07**

MEMBERSHIP APPLICATION FORM

(July 1 through June 30)

Mission

SHPE promotes the development of Hispanics in engineering, science and other technical professions to achieve educational excellence, economic opportunity and social equity.

APPLICATION TYPE

New Member Renewal: Have been a member since _____ Address Change Chapter Transfer

MEMBERSHIP TYPE (See reverse side for qualifications for each type)

Regular - \$45/Year Regular/Recent Graduate – No fee for the 1st Year Associate - \$35/Year Student - \$5/Year

Lifetime Membership \$500 Lifetime Regular Member \$400 Lifetime Associate Member
(Membership dues for lifetime members will be waived in perpetuity)

Chapter Affiliation (Professional Chapter/School Name): _____

If you are currently a SHPE Officer, please indicate your position: _____

CONTACT INFORMATION

Name: _____ Birth Date (mm/dd/yy) _____ Gender: F M
First MI Last (Year Optional for Professional members)

Current Address: _____ Home Phone: _____

Home E-mail Address: _____

PROFESSIONAL INFORMATION

Employer Name: _____ Job Title: _____

Work Address: _____ Work Phone: _____ Ext. _____

Work Email Address: _____

EDUCATIONAL BACKGROUND

Degree(s) held: _____

Degree(s) currently being pursued:
 B.S. B.A. M.S. M.A. MBA Ph.D. Other: _____

Major: _____ Last/Expected Graduation Date (mo/yr): _____

University/School: _____ School Location (city/state): _____

If currently a student, what year? HS Fr So Jr Sr Masters PhD Other: _____

If currently a student, GPA? 4.0 3.99-3.5 3.49-3.0 2.99-2.5 2.49-2.0 <2.0 Decline to State

INFORMATION RELEASE

Can we include your information in the SHPE Internal Directory? Yes No
Can we release your information outside of SHPE? Yes No
Where do you prefer to receive postal mailings? Home Work
Where do you prefer to receive e-mails? Home Work
For campaign purposes, please release the following to SHPE Candidates: My email My mailing address

Complete this portion if Paying via Credit Card
Visa/MasterCard/American Express are accepted
Account # _____ Exp: _____
Name as shown on card _____

NOTE: Signature Required to Process Membership Application

Signature: _____
Date: _____

MEMBERSHIP BENEFITS

- Membership certificate and pin
- Complimentary subscription to the SHPE Magazine
- Complimentary subscription to Hispanic Business Magazine
- Local Chapter Benefits – discounts at meetings
- Eligible for national awards
- Eligible to nominate recipients for national awards
- Receive registration discounts at our annual National Technical and Career Conference (NTCC).
- Leadership training and career and professional development
- Networking opportunities at conferences and seminars
- Information on employment and professional advancement
- Resume referral service and job posting service
- Resume available to all SHPE event corporate sponsors
- Access to Internships and Scholarships
- Opportunity to enter Technical competitions
- Registration discounts at regional events (ETCC/WCCE/ME)

REQUIREMENTS FOR MEMBERSHIP

Regular/Professional Members (\$45/year or \$500/lifetime)

A Regular/Professional member shall be a person who at a minimum holds an engineer-in-training certificate or a bachelor's degree in any discipline of engineering, engineering technology, mathematics, physical science or a mathematically based science or technical field*. Six years of experience as an engineer or in a mathematically based science or technical field* or engineering educator may be substituted for the bachelor's degree. Regular/Professional members shall be entitled to cast one vote in elections of officers and all business that the Board of Directors refers to the membership. Regular/Professional members may hold a National Board position.

Regular/Professional Members – Recent Graduate (no fee)

For persons who qualify for regular membership and have graduated less than six (6) months ago. This person will receive a one-year (July 1-June 30) free membership and is entitled to all mentioned benefits above.

Recent Graduate Requirement: On the application the sections for Major, Last Graduation Date, Degree, and University Name/Location **must** be filled out.

Associate Members (\$35/year or \$400/lifetime)

An associate member shall be a person who believes and supports the purpose of this organization. He/She shall not be entitled to nominate, vote or hold a position in the National Board. Associate members shall be extended all privileges of a Regular/Professional member less those exempted above.

Student Members (\$5/year)

Student members shall be students enrolled in a curriculum leading to a degree in engineering, engineering technology, mathematics, physical science or a mathematically based science or technical field*. Student members shall be entitled to nominate, vote and hold positions on the National Board to the extent expressly set forth in Section 15, 20.5 or elsewhere in the SHPE National Bylaws.

Other memberships within SHPE include:

Honorary, Guild and Industrial Partnership Council. Please visit our website for more information on these membership types.

*Please visit our website at www.shpe.org for a complete list of qualifying discipline/degrees for regular membership.

CODE OF ETHICS

Members of the Society of Hispanic Professional Engineers shall uphold and advance the integrity, honor and dignity of SHPE by: being honest and impartial and serving with fidelity our organization and our community; striving to increase the development of Hispanics in engineering, math, science, and other technical professions; and using their knowledge and skills for the advancement of Hispanics to achieve educational excellence, economic opportunity and social equity. To achieve these goals, members shall:

1. Act in a professional manner maintaining integrity and truthfulness and avoiding conflicts of interest.
2. Respect and protect the privacy, rights and dignity of others and maintain confidentiality when required.
3. Issue statements or present information only in an objective and truthful manner.
4. Treat fairly all colleagues and co-members, recognizing their unique contributions and capabilities.
5. Present a professional image in dress as well as behavior at all SHPE functions or while wearing the SHPE name and/or logo.
6. Call attention to unprofessional, unethical or inappropriate behavior and notify the appropriate leadership or authority if such behavior continues or threatens the safety or welfare of others.
7. Accept responsibility for their actions and recognize the contributions of others; seek critical review of their work and offer objective criticism of the work of others.
8. Continue their professional development throughout their careers, and provide opportunities for the professional development of those that follow them.
9. Be fiscally responsible with SHPE funds by spending within approved budgets and following financial guidelines set by the SHPE Inc. National Board of Directors, Local Region, Local Chapter, etc., as appropriate.
10. Abide by the National Bylaws, policies, procedures and guidelines as established by SHPE Inc.

Please visit our website for more information on the SHPE Code of Ethics and Judiciary Process.