COMPUTER-AIDED DRAFTING

OVERVIEW

Participants in Computer-Aided Drafting develop technical drawings on site using computer-aided drafting tools. There are three distinct categories to this event: engineering, architectural, and 3D modeling. For 2001, the focus of 3D Modeling is architectural; for 2002, the focus of 3D Modeling is engineering.

PURPOSE

The Computer-Aided Drafting event provides an opportunity for TSA members to demonstrate their ability using complex computer graphic skills, tools, and processes to develop two-dimensional or three-dimensional drawings of engineering or architectural subjects.

ELIGIBILITY

Entries are limited to one (1) individual per state in each of the following three categories:

1. Architectural
2. Engineering
3. 3D Modeling

TIME LIMITS

A. One (1) hour set-up time
B. Three (3) hours to develop the drawing(s)
C. One (1) hour for final evaluation

PROCEDURE

A. A workstation space is assigned to each participant prior to the event.
B. Participants must bring a computer with a monitor, grounded 50' extension cord, power-strip, and two (2) blank diskettes or tapes. Conference coordinators supply a table, chair, sketching paper, pencil, and electricity for each participant. As in an industrial setting, participants are permitted reference materials.
C. Participants report with their equipment to the testing area at the time and place stated in the conference program. Each participant with one (1) assistant (an instructor, fellow student, or adult chaperone) is allowed one (1) hour to set-up and test equipment.
D. At the end of the one-hour set-up period, assistants are required to leave the area. Participants are given a drafting problem to solve in the next three (3) hours. Participants work independently, without assistance from event evaluators, teachers, fellow participants, other students, or observers. Upon completion of the three (3)

hour working time, an additional one (1) hour is spent interviewing the participants and evaluating their work.

E. During the event, participants should save their drawing(s) onto their hard drives every fifteen (15) minutes. At the end of the event the final drawing(s) should be saved on the hard drive and on a diskette or tape.

F. All work must be turned in on a diskette or tape labeled with the participant's ID number only. All diskettes, tapes, and work become the property of LTSA.

G. All work is judged from the participant's computer monitor.

REGULATIONS

A. Participants provide their own systems including hardware, software, two blank diskettes or tapes, power strip, grounded 50' extension cord, and reference materials.

B. Participants must use only their conference identification number to identify their work.

C. Participants are not permitted to leave the event room without permission from the event coordinator. If a participant must use the rest room, s/he is accompanied by an escort.

D. Participants are not permitted to share solutions to problems, reference materials, hardware, or software.

E. Participants are expected to save their work frequently [about every fifteen (15) minutes] in the event of power failure.

EVALUATION

Entries are evaluated on screen according to the criteria on the official rating

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EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

A. Event coordinator: one (1)
B. Event evaluators: nine (9), three (3) for each CAD area
C. Assistants: three (3); one for each CAD area

MATERIALS

A. Coordinator's box, containing:
   1. Event guidelines, ten (10) copies
   2. Official rating forms, 27 copies (3 per evaluator)
   3. List of entries, with finalist report
   4. List of event evaluators/assistants
   5. Problems statement: fifty (50) copies of each area (architectural, engineering, and 3D modeling)
   6. Ten (10) pens and nine(9)calculators
   7. Results envelope
B. Tables and chairs for competitors and evaluators
C. One hundred twenty (120) sharpened #2 pencils and one (1) ream of 8'/2" x 11" white copier paper

PROCEDURE

A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's box. Review the event guidelines and check to see that enough evaluators/assistants have been scheduled.
B. Inspect the area(s) in which the event is being held for appropriate set-up, including room size, chairs, tables, outlets, etc. Notify the event manager of any potential problems.
C. At least one (1) hour before the event is to begin, meet with your evaluators and assistants to review time limits, procedures, regulations, and evaluation and all other details related to the event. If questions arise that cannot be answered, speak to the event manager before the event begins.
D. Begin the event at the scheduled time by closing the doors and checking the entry list. All participants and event evaluators should be in the room at this time. Any participant not present is disqualified. In order to compete, participants must be on the entry list or must have approval of the CRC chairman.
E. Allow one (1) hour for participants and their assistants (no more than one per participant) to set up equipment. At the end of the one (1) hour set-up time, non-participants are required to leave the event area. Review with the participants the time limits, procedures, regulations, and protocol of the event. Remind participants to save their work at regular time intervals.

F. Distribute the CAD problems. Answer any appropriate questions concerning the problems. Announce the ending time of the event.

G. During the event, the event evaluators and assistants are expected to monitor and evaluate the participants' progress and work.

H. The event coordinator announces time remaining to work at one (1) hour, thirty (30) minutes, fifteen (15), and 5 minutes before time is called.

I. When time is called, participants must stop all work on their drawings and save their work on their hard drives and their diskettes or tapes (labeled with their ID#). The diskettes and tapes as well as the work stored are the property of LTSA.

J. Once time is called to cease working, participants must remain at their computers no more than one (1) hour until the final evaluation of their work is made. Break down of equipment is not permitted until all participants have been evaluated.

K. The coordinator is responsible for security and the removal of equipment and materials from the event area.

L. Event evaluators independently review the work of the participants.

M. Complete the finalists report, including evaluators' signatures. Evaluators discuss and break any ties that affect the top three (3) placements.

N. The decision to deduct twenty (20) points or disqualify a participant must be reached through the consensus of the three evaluators and event coordinator. The event manager must be informed of any 20-point reduction and/or disqualification as soon as possible.

O. The final results are reviewed by the event coordinator and submitted to the CRC committee following appropriate protocol.

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2001-2002 OFFICIAL RATING FORM HIGH SCHOOL

ENTRANTS ID # / EVALUATIVE CRITERIA														
FOR ARCHITECTURAL, ENGINEERING, AND 3D MODELING Efficacy ..... 30 pts. The drawing clearly and efficiently communicates all necessary and important information using appropriate scale and geometry. Design, originality, and creativity.. ..... 20 pts. Utilizing CAD functions .... 15 pts. Drawing set-up .... 5 pts.														
FOR ARCHITECTURAL AND ENGINEERING Dimensioning (size and location) ... . 10 pts. Standards and symbols..... ..... 10 pts. Drawing contains title block, appropriate symbols, and conventional practices Placement of views .... 5 pts. Line type, lettering .... 5 pts.														
FOR 3D MODELING Manipulation of viewpoints and local coordinate system .... 30 pts.														
SUBTOTAL ..... 100 pts.														
Rules violation (if any) ....minus 20 pts.														
TOTAL ..... 100 pts.														

Evaluator's comments/notes:

I certify these results to be true and accurate to the best of my knowledge.

Evaluator's signature _____