

# World Maritime Technology Conference 2018 - Shanghai

December 4-7, 2018

## WMTC'18 STUDENT INNOVATIVE MARINE DESIGN COMPETITION

### RULES

#### I. COMPETITION PHILOSOPHY

The Theme of 2018:

#### **Green, Intelligence, Innovation**

The principal objectives of the competition are:

- To enhance the marine design ability and creativity of the students
- To stimulate the interest of the students in marine technology as a career choice
- To increase Green awareness of the participating students

Secondary objectives are:

- To recognize and reward outstanding student design projects
- To provide an opportunity for outstanding student design projects to be presented to the students of marine technology and more members of the profession
- To provide an opportunity for the outstanding students worldwide to communicate with each other.

The competition consists of two stages: the preliminary and the final stage. For the preliminary stage, the Competition Committee's judgment is solely based on the materials submitted such as design reports, photos of models, animations etc. Therefore, the contents of design reports are vitally important. For the final stage, the Competition Committee's judgment is based on both the materials and the face-to-face demonstrating and defense. The Committee will pay more attention to the students' consideration on the Green and/or Intelligence, as well as the innovation and improvements they produced.

The Committee does not desire elegant computer results produced by a sophisticated computer program, when no evidence is presented that the students have any understanding of the workings of the computer program used, its theoretical basis, its structure, restrictions on its applicability, the degree to which the program has been validated and accepted by the greater design community, etc. and when the computer results presented are not accompanied by any thoughtful discussion. While the use of sophisticated computer programs is not prohibited, their use will not gain extra credit for a submittal per se and can, in fact, detract from the final score if no evidence is presented that the students understand the program being used and the results presented are not discussed.

The work presented in the design report is the basis for the Committee's technical score for a project. In addition, the report itself is scored on organization, completeness, text and graphics. A report that is well written, has professional quality figures, tables and drawings, is well-organized and complete will score high.

## II. ORGANIZERS

### 1. Organization units

Steering Unit: World Maritime Technology Congress  
Host Unit: Shanghai Society of Naval Architects and Marine Engineers  
(SSNAME)

2. A Student Design Competition Committee will be set for running of the competition. The Committee is set up by one director, several vice directors and associate directors.

Responsibility of Student Design Competition Committee:

- Make regulations and specific rules for the competition, discuss and determine theme and content of the competition;
- Discuss work plans and other related issues;
- Evaluate and verify scores of competition and decide possible disputes;
- Responsible for carrying out other resolutions of the competition;
- Determine the competition criteria.

Student Design Competition Committee focuses on negotiating mutually beneficial solutions to issues in disputes, voting will be suggested if unable to reach consensus. In the vote, the members shall exceed 2/3 of the total number of members of the committee, and the final result shall be agreed more than half of those who have voted.

3. An Expert Review Group will be set up by the experts in this field to review and assess entries and give final score.

Responsibility of Expert Review Group:

- Make review, judgment and implementing rules based on prospectus of the competition;
- Review scientific principles, technical skills and Intellectual Property Ownership of entries;
- Evaluate entries and propose suggestions of awards and rankings;
- Responsible for clarifying complaints and questions to entries and participants during the competition and provide final suggestions.

### III. GENERAL

1. Participants must be undergraduates, master or PhD students (excluding part-time postgraduate students) registered before July 31, 2018. They may compete as individuals or in teams of up to five students.
2. Design projects that are developed in response to a formal classroom requirement are eligible for the competition as well as thesis projects or designs done independently of the curriculum.
3. Entries can be submitted through “Member Society Recommendation” and “Self-nomination”. “Member Society Recommendation” entries must be submitted electronically before July 15, 2018 according to the specified way and announced on “wmtc18.com.cn” within 5 days. “Self-nomination” entries must be submitted through [ssname@ssname.com.cn](mailto:ssname@ssname.com.cn) before 31 July.
4. WMTC member societies and institutes should set up rules and decide recommendation on their own to encourage students from college to attend the competition.
5. Students intending to enter the competition are requested to submit an Entry Form (copy attached) with their entries.
6. All the materials should be delivered in digital format through e-mail. **Each must bear the names and signatures and of the design team leader and any other student members who participated. The faculty advisor’s signature and membership number must also accompany the report with a statement certifying that the work was done by the students. The advisor’s note need not be bound into the report.**
7. Guidance may come from the faculty advisor or mentors, but it must be accurately referenced and acknowledged.
8. The competition consists of preliminary and final stage. 10 entries with the highest score can enter the final held during the WMTC’18 in Shanghai. For those teams entering the final, one or two team members should present their work on site.
9. There will be one 1<sup>st</sup> Prize, three 2<sup>nd</sup> Prize and six 3<sup>rd</sup> Prize Awards, with Certificate of Recognition and additional bonus determined by sponsorship levels.  
[Note: \*Prizes to be split between team members for team submissions that win.]
10. If a design team withdraws from the competition, the team leader is requested to notify SSNAME promptly at the address noted on the attached Entry Form.

[Note: The 1<sup>st</sup> Prize winner of the competition will have the opportunity to present the winning design at the closing ceremony of WMTC'18. All Prize winners of the competition will have the opportunity to present the winning design at another suitable of any of the WMT Congress member societies' or institutions' event.]

#### IV. SCHEDULE

Significant contest dates are as follows:

Competition Announcement Delivered	On or before <b>May 31, 2018</b>
Preliminary Works Collected	On or before July 31, 2018
Designs Reviewed	On or before August 31, 2018
Preliminary results announced, Invitations issued	On or before September 15, 2018
Final Competition Prepared	On or before November 30, 2018
Final Competition	December 6 2018 at WMTC'18 in Shanghai, China

Designs received after the July 31, 2018, deadline will not be judged nor considered for an award.

#### V. APPLICATION

Individuals or teams intending to enter a design in the competition are urged to submit an Entry Form (copy attached) in pdf form prior to starting work to:

The completed design report and other relevant materials like photos or videos must be submitted via e-mail to one of the above addresses on or before July 31, 2018. Hard copies may be accepted but are discouraged.

- Report: Teams will submit a paper summarizing their design solution and its evolution. This document should be submitted as a single PDF and the file must be no larger than 4 Mb in size.
- *(Optional)* Video: Teams may provide a supplementary video (MP4 file, max 5-minutes), with a file-size no larger than 100Mb, illustrating how your work fits the theme. It may also illustrate some details of the information presented.
- *(Optional)* Photo: Individual .jpg digital submissions required drawings/renderings outlined above saved as:
  - a) JPG format
  - b) RGB color mode
  - c) Maximum size of 3MB per image
  - d) File name: SDC + initials + year\_number (e.g. SDCLHH2017\_1.jpg)

## VI. ENTRIES REQUIREMENTS

1. The goal of the competition is to elicit innovative green and/or intelligence designs in the field of ship or offshore structure and marine system or equipment. Entries that show **green and/or intelligence ideas in energy conservation and environmental protection** are encouraged to participate. Entries should be innovation work designed by students of naval architecture, ocean and marine engineers from January 1, 2016. Entries that have been submitted to other competitions or have been presented at other events are allowed to apply to WMTC design competition, with past awards noted. If applicable, participants must assure their intellectual property and/or patent rights to the entries. **The organizer is not responsible for preserving the patent rights of the entries.**
2. Explanation to the term of “Green and/or intelligence ideas in energy conservation and environmental protection”: The idea can refer to the improvement of the whole or one aspect of ship or offshore structure, by providing more superior eco-friendly or intelligent performance than original structure under same condition and cost. It can also be an advanced conceptual design of the whole or one aspect of ship or offshore structure to achieve environmental protection. Two categories of entries are included: a) **Whole ship or offshore structure (incl. maritime autonomous surface ship);** b) **Marine system or equipment.** Creativity and feasibility of works above need to be considered.
3. Entries must be recommended by an instructor with professor level (Or above the level) and approved by the department of the school.
4. Participants must complete their design and submit entries within the given time according to relevant timetable. Participants who fail to submit entries on time will not be considered.
5. Entries can be submitted through “Member Society Recommendation” and “Self-nomination”. Entries from “Member Society Recommendation” should be submitted before July 15, 2018 by WMTC member societies and institutes. Each society and institute can recommend 1-2 works to participate the competition. Other participants can participate through “Self-nomination”.

## VII. FACTORS FOR JUDGING

### 1. Originality (30 points)

Following aspects will be evaluated:

- Originality of theory (including but not limited to theories of sailing/propulsion/controlling)
- Originality of layout (including but not limited to the arrangement of fluids/structure/function)
- Novelty of approach (including but not limited to the approach of sailing/launching/applying)
- Integrity of elements (including but not limited to culture/environmental protection/cost)

### 2. Science (20 points)

Following aspects will be evaluated:

- The theoretical basis and research method of the work
- The rigor and reliability of the argument
- Precision of argument
- Rationality of the design

### 3. Feasibility and Practicality (20 points)

Following aspects will be evaluated:

- Feasibility of techniques and operations adopted in the work
- Simplicity of realizing the work
- Can solve practical problems
- If there are no existing similar products, then the work should have obvious comprehensive advantage that are worth promoting
- Whether it can bring considerable economic and social benefit

### 4. Compliance with the Theme (15 points)

The work should reflect the consideration of energy conservation and environment protection.

### 5. Documentation (15 points)

The effectiveness of the design report as an instrument of communication is a strong factor in the judging. Organization of the report, clarity, completeness of design rationale and technical data, proper English usage, and use of figures and tables, including labeling, are major considerations. The text should be grammatically correct, succinct, clear, uniform, and easily readable. Small fonts in the body of the text are not desirable. A table of contents is required (not included in the page count), and lists of tables and figures are desirable (also not included in the page count). For innovative design solutions, the potential advantages and disadvantages are to be realistically identified, as well as how to mitigate the technical risks and uncertainties.

## WMTC'18 Student Innovative Marine Design Competition ENTRY FORM

**Title:** \_\_\_\_\_

**Category:**     Whole ship or offshore structure  
                    Marine system or equipment

**School:** \_\_\_\_\_

**Past award information if appropriate (incl. name of competition, award level, and time):**

<u>Name</u>	Team Leader	Expected Grad. Date	Degree	Signature	E-mail (Team Leader at least)
	<input type="checkbox"/>				
	<input type="checkbox"/>				
	<input type="checkbox"/>				
	<input type="checkbox"/>				
	<input type="checkbox"/>				

Please complete and return entry form no later than July 31, 2018 to **SSNAME**, at [ssname@ssname.com.cn](mailto:ssname@ssname.com.cn) .

**I here recommend the team with their entry to participate in the WMTC'18 Student Innovative Marine Design Competition.**

\_\_\_\_\_  
**Printed or Typed Name of Referrer**

\_\_\_\_\_  
**Signature of Referrer**

\_\_\_\_\_  
**Printed or Typed Name of Faculty Advisor**

\_\_\_\_\_  
**Signature of Faculty Advisor**

**Advisor's e-mail address:** \_\_\_\_\_

**Date submitted:** \_\_\_\_\_