**Contest Rules**

1. A team may consist of up to four secondary or below students enrolled in the same school.
2. You must obtain and use your control number and password to participate in the 20th annual HiMCM. Advisors must log on to the specified web site at the beginning of their thirty-six hour contest period (not before 3:01 p.m. on Friday, October 27, 2017) to receive the contest problems.
3. Teams must then choose to work on either the A or B problem.
4. The contest runs between 3:01 p.m. EST Friday, October 27th and 8:00 p.m. EST on Monday, November 20, 2017.
5. Each team will decide on a consecutive 36-hour period between October 27 - November 20 to work on the contest. For example, the contest for your team could be from 8:00 a.m. on Tuesday, November 7 until 8:00 p.m. on Wednesday, November 8. Your teams' contest ends upon completion of the 36-hour period.
6. Faculty advisors must ensure that no alterations of any form are made after the end of your 36-hour period or after 8:00 p.m. EST Monday November 20, 2017. Papers must be collected from students at this time to be email to COMAP for judging.
7. All contest forms must be printed, signed, emailed and received at COMAP no later than 5:00 p.m. EST Friday, December 1, 2017
8. A signed **[Parental/Guardian Authorization](http://www.comap.com/highschool/contests/himcm/parental_permission.html" \t "_blank)** form must be included for each participating student. Schools should email the signed forms to COMAP, and retain a copy of each for their records.
9. All accommodations relative to learning conditions for individual students would follow the accommodations used as part of the local school program in an affected student's daily learning. If specialized staff is required, the school bears the responsibility for providing any specialized assistance as required by law. If such accommodations are required for a student participating, the school should detail them and the extent to which they were utilized as part of the HiMCM activities.

**Before the contest registration deadline of 2:00 p.m. (EST) on Friday, October 27, 2017:**

**Register Your Team(s) Online:**The registration process will take you through a series of screens that ask you for your email address and contact information. Enter the required information as you step through the screens. **Important:** Be sure to use a valid current email address so that we can use it to contact you at any point before, during, or after the contest, if necessary.

1. **All teams must be registered before 2:00 p.m. (EST) Friday, October 27, 2017.**At that time the registration system will stop accepting new team registrations. To guard against the possibility of interruptions in Internet service we recommend that all teams compete the registration process well in advance of the deadline. COMAP will not accept any late registrations under any circumstances. No exceptions will be made.
2. **Registration is via the contest web site. No other forms of registration will be accepted.**  
   To register a team, click the[**Registration**](http://www.comap.com/highschool/contests/himcm/himcmpayment.html) link on the left side of this page. If you have already registered a team for this year's contest and want to register additional teams, email us at [**himcm@comap.com**](mailto:himcm@comap.com).   
   **After each team is registered, you will receive an email confirmation. You must follow the link in the email to complete the registration process for each team.**  
     
   **Advisors may register any number of teams, but must use the same email address and password for all teams.**
3. You may specify the team members at the time of registration, or as you enter your Control Sheet information at the end of the contest. Team members may be changed up until the beginning of the contest period. Once the contest problems are read, team members cannot be changed. **The spelling of all names and institutions is the responsibility of the advisor. This is exactly as they will appear on certificates. COMAP will not reprint certificates.**
4. Once you have completed the registration, you will receive a **Team Control Number.**
5. The screen giving your team control number is the only confirmation that you will receive indicating that you have successfully registered that team.
6. In order to participate in the contest, you will need to return to the contest website to confirm information about your team, and to print/download out the Control Sheet and Parental/Guardian Authorization Form that you will need to print and email to COMAP.
7. **If at any point before or during the contest you need to change any of the information that you specified when you registered, you may do so by logging in to the contest website with the email address and password that you specified when registering. Once logged in click the Register/Update button and proceed.**
8. Return to the contest website regularly to check for any updated instructions or announcements regarding the contest. Except in extreme circumstances, COMAP will not send any confirmation, reminders, or announcements by email. All communication regarding the contest will be via the contest website.

**Preparing a Team**

1. Go to the HiMCM web site and review the rules, guidelines and prior years' problems to prepare your students.
2. Ensure that students have access to computers that enable them to word process, use a spreadsheet, and dynamically model both graphs and geometric relationships. In addition, students should have access to graphing calculators.
3. It is both legitimate and desirable to coach or otherwise prepare your team(s) BEFORE the start of the contest. Visit **[www.mathmodels.org](http://www.mathmodels.org/" \t "_blank)** to view previous years' problems and solutions.
4. The Consortium Article, HiMCM Contest in Modeling: 2015 Outstanding Paper which includes the HiMCM Director's Article, Judges' Commentary and **[a sample solution can be viewed here.](http://www.comap.com/Free/PDF/2015_Cons_HiMCM.pdf" \t "_blank)**
5. All parents of students participating in the contest must sign a **[Parental/Guardian Authorization Form](http://www.comap.com/highschool/contests/himcm/parental_permission.html" \t "_blank)** making their child's work available (with confidentiality assurance) for use in example and training materials for HiMCM professional development activities. Additionally, should their team be designated as an Outstanding winner, the student's Solution Paper (or solution abstract) will be published in COMAP's Consortium newsletter, among other places. THIS AUTHORIZATION FORM MUST BE **[DOWNLOADED FROM THE INTERNET](http://www.comap.com/highschool/contests/himcm/parental_permission.html" \t "_blank)** AND SENT HOME WITH EACH STUDENT BEFORE THE CONTEST PERIOD. SIGNED AUTHORIZATION FORMS FOR EACH STUDENT MUST BE EMAILED AND INCLUDED WITH SOLUTION FOMRS FOR CONSIDERATION BY THE JUDGES.

**Preparing a Solution Paper**

1. The contest problems will become available at 3:01 pm EST on Friday, October 27, 2017. When teams are ready to compete the team advisor must  **[login](http://www.comap.com/highschool/contests/himcm/login.php)** to view the problems. Once logged in look for the **\*VIEW PROBLEMS\*** link which will become active at 3:01 pm EST on Friday, October 27, 2017. Once you login and view the problems we recommend that you print out a copy for your students.
2. The contest consists of a choice of two problems A or B.
3. Teams may use any inanimate source of data, materials, computers, software, references, websites, books, etc. Be sure to credit all sources used.
4. Teams may not use any person (other than team members) to discuss or obtain ideas for solving their problem **nor maythey seek help in obtaining an answer from the teams' advisor or anyone else**. Any team that discusses the problem with anyone in a position to supply them with information reflecting experience or professional expertise will be disqualified. The relevant issue is one of intent: each team of students is expected to develop all of its substantive analysis without the help of others.
5. Partial solutions are acceptable. There is no passing or failing cutoff score, nor will numerical scores be assigned. The HiMCM judges are primarily interested in a teams' approach and methods.
6. Papers must be typed in English, with a readable font of at least 12 point type.
7. The solution must consist entirely of written text and possibly figures, charts, or other written material. No non text support such as computer programs will be accepted.
8. Your submission should consist of a 1 page Summary Sheet and your solution cannot exceed 30 pages for a maximum of 31 pages. Note: The appendix and references do not count toward the 30 page limit.
9. **Each page of the solution must contain the team control number and the page number at the top of the page;**we suggest using a page header on each page for example: Team # 321 page 6 of 13.
10. The names of the students, advisor, or institution must not appear on any page of the solution. The solution must not contain any identifying information other than the team Control Number.
11. Any preparation rule not followed is grounds for disqualification.
12. Teams should keep in mind the following guidelines while preparing their solution papers:

* Conciseness and organization are extremely important. Key statements should present major ideas and results.
* Present a clarification or restatement of the problem as appropriate.
* Present a clear exposition of all variables, assumptions, and hypotheses.
* Present an analysis of the problem, motivating or justifying the modeling to be used.
* Include a design of the model. Discuss how the model could be tested.
* Discuss any apparent strengths or weaknesses to your model or approach.
* Incorporate lengthy derivations, computations, or illustrative examples in appendices. Summarize these in the main report. Results must be explicitly stated in the body of the report.

**During the contest the advisor should:**

1. Login to the contest website and enter your email address and password.
2. Enter the team members names and confirm that they are spelled correctly.
3. Specify the problem that each team has chosen to solve.
4. Print/Download one copy of the Control Sheet.
5. Be sure to download the **[Parental/Guardian Authorization](http://www.comap.com/highschool/contests/himcm/parental_permission.html" \t "_blank)** form.

**Preparing and Submitting a Solution Paper**

1. **The Summary Sheet**  
   Type a summary of the teams solution on the Summary Sheet which should be included as the first page of your electronic Solution Paper.  
   The summary is a very important part of your HiMCM paper. The judges place considerable weight on the summary, and winning papers are sometimes distinguished from other papers based on the quality of the summary. To write a good summary, imagine that a reader may choose whether to read the body of the paper based on your summary. Thus, a summary should clearly describe your approach to the problem and, most prominently, what your most important conclusions were. The summary should inspire a reader to learn the details of your work. Your concise presentation of the summary should inspire a reader to learn the details of your work. Summaries that are mere restatements of the contest problem, or are a cut-and-paste boilerplate from the Introduction are generally considered to be weak.
2. Teams must end all work on the Solution Paper at the end of the team's consecutive 36-hour period, or by 8:00 p.m. EST on Monday November 20, 2017.
3. **Send electronic copy of Solution Paper by email:**

3-1. Each team is required to submit an electronic copy of its solution paper by email to [**solutions@comap.com**](mailto:solutions@comap.com). Any team member or the advisor may submit this email.

a. Your email MUST be received at COMAP on or before the email submission deadline of 9PM EST on November 20, 2017.

b. Failure by a team to submit a solution via email by 9PM EST on November 20, 2017 constitutes a violation of the contest rules and will result in that team's disqualification.

3-2. In the subject line of your email write: COMAP and your team's control number. For example: **COMAP 2222**

3-3. Use your team's control number as the name of your file attachment.

3-4. COMAP will accept only an Adobe **PDF** or **Microsoft Word** file of your solution. DO NOT include programs or software with your email as they will not be used in the judging process. Limit one solution per email. The names of the students, advisor, or institution should NOT appear on any page of the electronic solution. **Page 1 of the teams electronic solution should be the team summary.** \*Note: The attachment must be less than 17MB. Do not use a cloud service such as Google Docs your email must contain a Adobe PDF or Microsoft Word attachment.

1. Have each student sign the Control Sheet, pledging that they have abided by the contest rules and instructions.

**To Summarize:  
  
a.** Restatement Clarification of the Problem - state in your own words what you are going to do. Assumptions with Rationale/Justification - emphasize those assumptions that bear on the problem. List clearly all variables used in your model.  
Model Design and justification for type model used/developed.  
Model Testing and Sensitivity Analysis, including error analysis, etc.  
Discuss strengths and weakness to your model or approach.  
Provide algorithms in words, figures, or flow charts (as a step by step algorithmic approach) for all computer codes developed.  
  
**b. Send electronic copy of Solution Paper by email: See #3 above for more details.   
(Note you are no longer required to mail a print copy of your Solution Paper.)**  
  
**c.** Make**one**copy of the teams Control Sheet.

**d.**Collect the signed **[Parental/Guardian Authorization](http://www.comap.com/highschool/contests/himcm/parental_permission.html" \t "_blank)** forms.

1. **Send signed contest forms (Control Sheet/Parental/Guardian Authorization Forms) by email to COMAP:**  
   After the signed contest forms are prepared, email them to: [**forms@comap.com**](mailto:forms@comap.com). In the subject line of your email write: COMAP and your team's control number. For example: **COMAP 2222**. COMAP will accept only an Adobe PDF or a Photo Image of your contest forms. Limit one set of forms per email. Teams may take pictures of the signed forms with a phone or digital camera and then email the images to [**forms@comap.com**](mailto:forms@comap.com). \*Note: The attachment must be less than 17MB.  
   **(Note you are no longer required to mail a print copy of your Contest Forms.)**    
     
   The contest forms must be received by COMAP no later than 5:00 pm EST on Friday, December 1, 2017. COMAP is not responsible for contest forms received after that date.

**HiMCM Results and Recognition**

1. Judging will be completed in January, 2018. The solutions will be recognized as Successful Participant, Honorable Mention, Meritorious, Finalist, or Outstanding. Advisors and teams will be notified of the results in February, 2018 and they will be posted on the high school contest website. News releases will be prepared for local and national dissemination and there will be announcements in professional publications.
2. Every team that submits a properly outlined Solution Paper will be awarded a certificate of participation. All international teams will receive ONLY an electronic (PDF) certificate. US teams should allow several weeks after the results are posted to the contest web site to receive your print certificate. [**Click here to download HiMCM certificates.**](http://www.comap.com/CertformHiMCM/index.html)
3. All USA teams that successfully compete in the HiMCM contest and are awarded a designation of Meritorious or above (Meritorious, Finalist, National Finalist, or Outstanding) will be invited to compete in The International Mathematical Modeling Challenge, IM2C which will take place March, 2018 through April, 2018. **[For more information about the International Mathematical Modeling Challenge click here.](http://immchallenge.org/Index.html" \t "_blank)**
4. Select Outstanding teams will have their Solution Papers (or their solution abstracts) published in COMAP's Consortium newsletter among other places. Recognition information will also be sent to local newspapers and radio/television outlets.