

## Contest Rules, Registration and Instructions

*(All rules and instructions apply to both ICM and MCM contests, except where otherwise noted.)*

To participate in a contest, each team may consist of a maximum of three students and must be sponsored by a faculty advisor from its institution.

**Team Members:** A team may consist of up to three students from the same school and is open to all undergraduate and high school students.

**Team Advisors:** Please read these instructions carefully. It is your responsibility to make sure that teams are correctly registered and that all of the following steps required for participation in the contest are completed:

Please print a copy of these contest instructions for reference before, during, and after the contest.

[Click here for the printer friendly version.](#)

**[COMAP is pleased to announce a new supplement to the MCM/ICM contest. Click here to read more details.](#)**

### **I. BEFORE THE CONTEST BEGINS:**

- A. Registration
- B. Choose your team members

### **II. AFTER THE CONTEST BEGINS:**

- A. View the contest problems via the contest web site
- B. Choose a problem
- C. Teams prepare solutions
- D. Print Summary Sheet and Control Sheet

### **III. BEFORE THE CONTEST ENDS:**

- A. Send electronic copy of Solution Paper by email

### **IV. WHEN THE CONTEST ENDS:**

- A. Prepare Solution Packet
- B. Mail Solution Packet

### **V. AFTER THE CONTEST IS OVER:**

- A. Confirm that your team's solution was received
- B. Check contest results
- C. Certificates
- D. Prizes

### **IMPORTANT NOTES:**

- COMAP is the final arbiter of all rules and policies, and may disqualify or refuse to register any team that, in its sole discretion, does not follow these contest regulations and procedures.
- Decisions of the judges, the contest directors, and the editor of The UMAP Journal are final.

- If a team is caught violating the rules, the faculty advisor will not be permitted to advise another team for one year, and the advisor's institution will be put on probation for one year.
- If a team from the same institution is caught violating the rules a second time, then that school will not be allowed to compete for a period of at least one year.
- All times given in these instructions are in terms of Eastern Standard Time (EST). (COMAP is located in the U.S. Eastern Time zone.)

**By submitting an entry, team members agree that:**

- Their submission and all rights to its publication become the property of COMAP, Inc.
- COMAP may use, edit, excerpt, and publish this submission for promotional use or any other purpose, including placing it online, distributing it electronically, or publishing it in The UMAP Journal or otherwise, without compensation of any kind.
- COMAP reserves the right to use in materials relating to this contest, the names of the team members, their advisor(s), and their affiliations, without further notification, permission, or compensation.
  - and team members assert that
- All images, figures, photographs, tables, and drawings in their submission were either created by the team or else, if reproduced from another source, the submission cites a specific reference for each at its location in the submission.
- All direct quotations in the submission are enclosed in quotation marks or otherwise identified as such, with a specific reference cited for each at its location in the submission.

**I. BEFORE THE CONTEST BEGINS:**

**A. Registration**

**All teams must be registered before 2PM EST on Thursday, February 5, 2015.** We recommend that all teams complete the registration process well in advance, since the registration system will not accept any new team registrations after the deadline. COMAP will not accept late registrations for MCM/ICM 2015 **under any circumstances. NO EXCEPTIONS WILL BE MADE.**

1. **Register your team online via the contest web site:** Go to <http://www.comap.com/undergraduate/contests/mcm>.
  - a. If you are registering your first team for this year's contest, click on **Register for 2015 Contest** on the left-hand side of the screen. Enter all the required information, including your email address and contact information.  
**IMPORTANT:** Be sure to use a valid and current email address so that we can use it to contact you at any point before, during, and after the contest, if necessary.
  - b. If you have already registered a team for this year's contest and want to register a second team, click on **Advisor Login**, then log in with the same email address and password that you used when you registered your first team. Once you're logged in, click on **Register Another Team** near the upper right corner of the page, then follow the instructions there. **New: There is no longer a restriction on the number of teams an advisor can register.**
2. **Registration Fee**

A \$100 registration fee per team is required.

**For an additional \$100 fee per team, you can receive a Judges Commentary written specifically about your team's paper.**

We accept payment with Mastercard or Visa only via our secure web site. We cannot accept other forms of payment. Our secure site will process your credit card payment, so your credit card number is protected. Our system will not store your credit card number after it processes your payment.

3. After we receive approval from your financial institution (this takes only a few seconds), the system will issue a control number for your team. Your team is not officially registered until you have received a team **control number**. **Print the page that displays your team control number: It is your only confirmation that your team has been registered.** This page also lists the email address and password that you entered when registering; you will need this information to complete the contest procedures.

You will **NOT** receive an email confirmation of your registration.

4. If you need to change any of the information (name, address, contact information, etc.) that you specified when you registered, you can do so at any point before or during the contest by logging in to the contest web site with the same email address and password that you used when registering (click on the **Advisor Login** link on the left side of the screen). Once logged in, click on the **Edit Advisor or Institution Data** link near the upper right corner of the page.
5. Check the contest web site regularly for any updated instructions or announcements about 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 web site.
6. You will return to the contest web site during the contest to enter and confirm information about your team, and to print out your team's Control Sheet and Summary Sheets, which you will use when preparing your team's solution packet. Details on these steps follow in the instructions below.

#### **B. Choose your team members:**

1. You must choose your team members **before the contest begins at 8PM EST on Thursday February 5, 2015**. Once the contest begins you may not add or change any team members (you may, however, remove a team member, if he or she decides not to participate).
2. Each team may consist of a maximum of three students.
3. Each student may participate on only one team.
4. Team members must be enrolled in school at the time of the contest, but they need not be full-time students. Team members must be enrolled at the same school as the advisor and other team members.

## **II. AFTER THE CONTEST BEGINS:**

### **A. View the contest problems via the contest web site:**

Teams can view the contest problems via the contest web site **when the contest begins at 8PM EST on Thursday February 5, 2015:**

1. The contest problems will become available precisely at 8PM EST on Thursday February 5, 2015; team members can view them by visiting <http://www.comap.com/undergraduate/contests/mcm>. No password will be needed to view the problems; simply go to the contest web site at or after 8PM EST on Thursday, February 5, 2015 and you will see a link to view the problems.
2. The contest problems will become available precisely at 7:50PM EST on Thursday February 5, 2015 on the following mirror sites:  
<http://www.comap-math.com/mcm/index.html>  
<http://www.mathismore.net/mcm/index.html>  
<http://www.mathportals.com/mcm/index.html>  
If you cannot access any of the sites, there may be a problem with your local Internet connection. Contact your local Internet service provider to resolve the issue.

### **B. Choose a problem:**

Each team can choose any one of the four problem choices and should submit a solution to only one problem.

- **MCM problems are Problem A or Problem B.**
- **ICM problems are Problem C or Problem D.**

### **C. Teams prepare solutions:**

1. Teams may use any inanimate source of data or materials: computers, software, references, web sites, books, etc. ALL SOURCES USED MUST BE CREDITED. Failure to credit a source will result in a team being disqualified from the competition.
2. Team members may not seek help from or discuss the problem with their advisor or anyone else, except other members of the same team. Input in any form from anyone other than student team members is strictly forbidden. This includes email, telephone contact, and personal conversation, communication via web chat or other question-answer systems, or any other form of communication.
3. Partial solutions are acceptable. There is no passing or failing cut-off score, and numerical scores will not be assigned. The MCM/ICM contest judges are primarily interested in the team's approach and methods.
4. **Summary Sheet:** The summary is an essential part of your MCM/ICM paper. The judges place considerable weight on the summary, and winning papers are often distinguished from other papers based on the quality of the summary.

To write a good summary, imagine that a reader will choose whether to read the body of the paper based on your summary: Your concise presentation in the summary should inspire a reader to learn about the details of your work. Thus, a summary should clearly describe your approach to the problem and, most prominently, your most important conclusions. 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.

**Besides the summary sheet as described each paper should contain the following sections:**

- **Restatement and clarification of the problem:** State in your own words what you are going to do.

- **Explain assumptions and rationale/justification:** Emphasize the assumptions that bear on the problem. Clearly list all variables used in your model.
  - **Include your model design and justification** for type model used or developed.
  - **Describe model testing and sensitivity analysis**, including error analysis, etc.
  - **Discuss the strengths and weaknesses** of your model or approach.
5. The judges will evaluate the quality of your writing in the Solution Paper:
- 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, including the motivation or justification for the model that is used.
  - Include a design of the model.
  - Discuss how the model could be tested, including error analysis and stability (conditioning, sensitivity, etc.).
  - Discuss any apparent strengths or weaknesses in your model or approach.
6. Papers must be typed in English, single or double sided with a readable font of (11 or 12).
7. The solution must consist entirely of written text, and possibly figures, charts, or other written material, on paper only. No non-paper support materials such as computer files or disks will be accepted.
8. **The Solution Paper must display the team control number and the page number at the top of every page;** for example, use the following page header on each page:
- Team # 321
Page 6 of 13
9. The names of the students, advisor, or institution should NOT appear on any page of the print solution or electronic solution. The solution should not contain any identifying information other than the team control number.
10. Failure to adhere to any preparation rule is grounds for team disqualification.

#### **D. Print Summary Sheet and Control Sheet:**

After the contest begins at 8PM EST on Thursday February 5, 2015, and while the teams are preparing their solutions, the advisor should:

1. Login to the contest web site (go to <http://www.comap.com/undergraduate/contests/mcm>. Click on **Advisor Login**, then enter your email address and password).
2. Enter the team member names and confirm that each name is spelled correctly. **This determines how the names will appear on the contest certificates. COMAP will not make any changes or reprint certificates for any reason.**
3. Specify the problem that your team has chosen to solve.
4. Print one copy of the Control Sheet.

5. Print one copy of the team Summary Sheet.

### III. BEFORE THE CONTEST ENDS:

#### A. Send electronic copy of Solution Paper by email:

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 by the submission deadline of 8PM EST on February 9, 2015.**
  - b. Failure by a team to submit a solution via email by **8PM EST on February 9, 2015** constitutes a violation of the contest rules and will result in that team's disqualification.
  - c. No further modifications, enhancements, additions, or improvements may be made to the team's solution paper after this email submission. Each team's electronic submission will be cross-checked for consistency with their paper submission. Any changes to the paper version will constitute a violation of the contest rules and may result in disqualification.
2. In the subject line of your email write: COMAP and your team's control number. For example:  
Subject: **COMAP 2222**
3. Use your team's control number as the name of your file attachments.
4. COMAP will accept only an **Adobe PDF** or **Microsoft Word** file of your solution. DO NOT include your **Control Sheet**, 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. Your team's summary should be included as the first page of your file. \*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.**
5. See the rules for submitting the paper copy via mail below.

### IV. WHEN THE CONTEST ENDS:

#### A. Prepare Solution Packet:

##### When the contest ends at 8PM EST on February 9, 2015:

1. Each team member must sign the Control Sheet to pledge that he or she abided by the contest rules and instructions.
2. Make **one** copy of your team's Solution Paper.
3. Place the Summary Sheet on top of the Solution Paper.
4. Staple the Control Sheet on top the Summary Sheet and Solution Paper.

**\*So the paper order should be: Control Sheet on top followed by Summary Sheet followed by the Solution Paper.**

**B. Mail Solution Packet:**

1. Mail your team's complete Solution Packet to:  
MCM/ICM Coordinator  
COMAP, Inc.  
175 Middlesex Turnpike., Suite 3B  
Bedford, MA 01730  
USA
2. COMAP must receive your Solution Packet via mail on or before **Wednesday February 18, 2015**. It is your responsibility to make sure that your team's Solution Packet arrives at COMAP by this deadline. Use registered or express mail, if necessary, to insure that it arrives at COMAP by Wednesday February 18, 2015.
3. COMAP will not accept late solutions under any circumstances.
4. If you require confirmation that your print paper was received by COMAP, send the packet via a carrier that provides package tracking. Due to the number of papers received, COMAP can not answer receipt inquiries or emails.

**V. AFTER THE CONTEST IS OVER:****A. Confirm that your team's solution was received:**

1. You may login to the contest web site using the **Advisor Login** link to verify that your team's Electronic Solution was received at COMAP. If you require confirmation that your print paper was received by COMAP, send the packet via a carrier that provides package tracking. Due to the number of papers received, COMAP can not answer receipt inquiries or emails.

**B. Check contest results:**

1. **Judging:** Judging will be completed in March and the results will be posted on April 29, 2015. The Solution Papers will be recognized as Unsuccessful, Successful Participant, Honorable Mention, Meritorious, Finalist, or Outstanding Winner.
2. We will post the contest results on the web site as soon as they are available, so visit the contest web site regularly to check for updates. It will take several weeks for the judges to evaluate the solutions and for COMAP to process the results. Please do NOT call or email COMAP regarding contest results.

**C. Certificates:**

After the results are issued, each successfully participating team will receive a certificate of participation. You may login to the contest web site using the **Advisor Login** link to view and print your team's certificates. 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 MCM/ICM certificates.](#)

**D. Prizes:**

- The Institute for Operations Research and the Management Sciences (INFORMS) will designate an Outstanding team from each of the three problems as an INFORMS winner.

- The Society for Industrial and Applied Mathematics (SIAM) will designate one Outstanding team from each MCM problem as a SIAM winner.
- The Mathematical Association of America (MAA) will designate one Outstanding team from each problem for the MCM as a MAA winner.
- The Ben Fusaro Award, Typically, among the final MCM papers from which the Outstanding ones are selected is a paper that is especially creative but contains a flaw that prevents it from attaining the Outstanding designation. In accord with Ben's wishes, the award will recognize such teams.
- The Mathematical Contest in Modeling's Frank R. Giordano Award began in 2012. It honors Brig. Gen. (ret) Frank Giordano who directed the MCM for 20 years. This award goes to a paper that demonstrates true excellence in the execution of the modeling process.