From the graders for ME 212, with my (Prof. Owen's) remarks:

The most common problems your graders have found so far have been:

- Lack of complete problem statement, or no problem statement at all (Given, Find/Required, Schematic, Analysis). Following this list is an example of what we are looking for on your homework. Going forward you will be docked points for failing to include any of these things.

- Not using units when working with numbers as opposed to symbolic work. All number values should have units associated with this. This is not just for our sake, using units consistently will help you spot problems in your work as you go. It will also help you when going over work after getting a wrong answer. Leave numerical values and units out until last step. Work with variables as long as possible. This good engineering practice. To do otherwise is bad engineering practice, despite how it appears in the solutions manual. The solutions in the manual were probably worked out by grad students, who have no practical experience in the outside world. These solutions ought to be re-done, but so far McGraw Hill hasn't done this.

- Copying the solutions manual. Dr. Owen has instructed us not to dock you points for this, as those who simply copy the solutions manual invariably do poorly on quizzes and exams and the final. Remember, you must pass the final to pass the class. This is a very stupid thing to do. How are you going to learn without putting the effort in? Not only must you pass the final to pass the class, you need to do well on your quizzes too. Copying solutions does not teach you how to solve problems. The 9 points you get for homework will more than disappear on your quizzes if you are not prepared for them. This problem, thus, is self-correcting.

- No vector notation. It doesn’t matter if you like to put your vector lines on top of your variables, or the bottom, but they need to be there when the quantity being considered is a vector. Use arrows on top of your vectors and little hats for unit vectors. Let’s all be consistent. If you want to be creative, don’t do it with vector notation. Go paint something. You must also include unit vectors when working with numerical values that are vectors.
  - This is especially important when paired with your schematic/co-ordinate system. If you use vector notation but have no schematic/co-ordinate system, someone reading your work does not know what you mean when you say, for example, \( \vec{v} = 500 \text{m/sec} \hat{i} \).
When you give an answer for a vector quantity, be sure to give its direction too, either in terms of unit vectors or by clearly giving the angle of the vector’s direction.

- Simply having very cluttered work. If we cannot read your work, or it does not flow logically, we will have a very hard time evaluating whether or not you know what you are doing. We understand if you don’t have the best handwriting, but please make an effort to be legible and logical. As an engineer, you are expected to have clear handwriting. If you don’t work on it.
  - We request that you put one problem per page; this makes it much easier on us to grade your work, and looks more professional.
  - Paper is cheap. Thinking is expensive. If we can use a cheap resource to improve the efficiency and clarity of an expensive resource, we should. That’s good engineering practice. Trying to economize on the use of paper in engineering work is not efficient, a poor use of resources. Use more paper.
  - Don’t write small. I don’t want to have to use a magnifying glass to read your work. I have had to do this, really. And my eyesight is really not that bad.

- Not understanding the concepts being covered. Dynamics is a tough class; we totally get it as we took it too once. If you are having lots of trouble with it, don’t despair! It helps to work in groups (I recommend this highly; this is how the Germans work their way through engineering studies), so see if you can get together with your classmates to work on it together. Also, the Student Success Center has dedicated tutoring for ME211/212 and CE 204/207 MWRF from 4-8PM in 192-133. This can help immensely.

- You must put your section number on the top of the page. If you don’t know your section number, it can be found on the portal in your “My Classes” section. (1010 = 03, 1110 = 04, 1210 = 05, 1310 = 06)

Homework Layout

Problem #

Given: We do not need the entire problem statement here, but enough so that it is clear what you are being given.

Find: What are you being asked to solve for in this problem? If multiple things, write: a) Thing 1 b) Thing 2 c) etc

Schematic: Here is where you need to draw your schematic/co-ordinate system, including but not limited to FBD=MAD.
Analysis: Clearly lay out your reasoning for the problem you are working on, and box your answer at the end.

Remember 1 problem per page.