Here is my grading process:

Each homework and exam is scored on its own scale. For example, there might be 18 points on HW #2 and 105 points possible on the Midterm. Each students’ score is then normalized to an "adjusted value" based on what percent of the final grade that assignment will be. For example, HW #2 will be worth 5% of the final grade and the midterm will be worth 25%. To normalize your score on an assignment, I look at the high score for that assignment. For example, the highest score on the midterm might be 94 out of 105. Everyone else scores between 0 and that number. So I take your score and prorate it accordingly.

\[(\text{YourScore} / \text{HighScore}) \times \text{PercentOfTotalGrade}\]

The high score on the midterm (94) translates into 25.00 adjusted points. A score of half that (47) would translate into 12.50 adjusted points.

At the end of the term, I add everyone's "adjusted points" to give their "total adjusted points". If one person is the highest scorer on all assignments, then that person will have the maximum adjusted points and their total adjusted point sum will be 100.00. If someone gets zero on every assignment, then that person will have a total adjusted point sum of 0.00. Everyone else will fall between 0.00 and 100.00.

Many teachers, particular in elementary schools, do not grade on a curve. They set standards at fixed places, using a system such as this: “Everyone with 90-100 points gets an A, everyone with 80-89 points gets a B, and so on.” With this system, you compete against yourself only. The teacher defines a head of time what you have to do to get the points required for an A. If you do the required work, then you get the points and the corresponding grade, regardless of what everyone else does. If all students do the assigned work, it is possible that all students will get an A. If no one is able to perform the work, then all students might get a D.

This is not a curve and I do not use this grading system. I assign grades on a curve. What this means is that students compete against other students.

Here is how I will assign grades. I will begin by computing total adjusted point sums for each student. Then I will sort the students on their points, from highest to lowest. This will “rank-order” every student. You will be able to see very clearly where you fall, relative to other students. One student will have the most points and that student will be “number 1”. One student will have the least points. You might, for example, be number 17, meaning 16 students did better than you and everyone else did worse.

I will then assign “A” to the top rank students, “B” to the students in the middle, and “C” and "Fail" to the students at the bottom of the ranking. I also use intermediate grades, so I will assign a grade of either A, A-, B+, B, B-, C+, C, or Fail to each student, based only on the student’s rank-order.
Often, there will be natural breaking points where it makes sense to draw the line between, say, an A- and a B+. I will follow the data when I see natural boundaries. Here is a picture showing my general approach to assigning letter grades. This only reflects my general intention on where to set the boundaries.

A Sample Grading Curve*

![Grading Curve Diagram]

* Tentative, subject to change, this is demonstrative only

I assign everyone a 4 digit random ID number. This number is used only for this class and is unrelated to any other number or your PSU ID. You are told your number at the beginning of the term. If you forget, you may also discover your number assuming you know your score on the midterm and other homeworks. All grading and ranking is done by ID number. Therefore you can only know your own rank and grade. You will see all the grades from all the students, but without knowing their ID numbers, you will not know what a particular person did, even if you know their name and PSU ID number.

I grade the midterm and final exams “blind”. Your name is on a separate page and while grading I do not look at the name. This prevents any unconscious bias I might have when I am grading the exams. The only source of bias comes from your handwriting, and I will reveal I am strongly biased against those people who do not write legibly. I grade all questions on the exams before adding the points. Therefore, I do not learn who did well until after it is already determined.

I use a curve for the following reasons:

First, with a class I have not taught before, it is difficult to know what the students will be able to achieve ahead of time. If I set standards at a fixed position, then I am locked in for the rest of the class. When grading, I might end up giving almost everyone an A or, worse, I might end up in having to fail almost everyone.
Second, by grading on a curve, I will give people a broad spectrum of grades. I will not give all A's or all C's. Grades are useful later in evaluating student performance. Spreading the grades out means that information can be conveyed. Giving all A's tells nothing about the students' performance.

Third, in many classes there are no natural goals to achieve or mileage posts to reach. Instead, the material to learn forms a continuum. My goal is not to get everyone up to some minimum level but to move everyone forward from where they start. I want you all to improve, regardless of where you are coming from and what preparation you have. There are no natural boundaries to knowledge in general.

Fourth, using the rank-order approach gives you concrete information about how competitive you are, relative to your peers. This is the way the real world works. If a company needs to pare down and eliminate a few employees, it is pointless to say, “Don't fire me. I did everything you asked me to do.” Employers simply compare their employees and try to keep the best ones.

Unfortunately, some students coming out of elementary schools have unrealistic expectations about their abilities. They are used to competing with their high school peers and, when suddenly they find themselves in an upper-level computer science course at PSU, they discover that they are competing against a set of very bright, very motivated, and very well-prepared peers. Grading on a curve reveals the reality of this situation. As students progress in their educations and later in their careers, they can expect this effect to intensify. My goal is not to stress students out with a lot of competition, although I understand that everyone wants an A. Grading on a curve means that not everyone will achieve the grade they desire. Such is life.

Finally, when grading is not curved, but done on a set of fixed standards, students will very naturally do only as much work as they feel necessary to get the grade they want. My goal as a teacher is to motivate students to do more than some fixed minimum. In particular, I want keep pressure on the very best students to work as hard as they can. You must understand that when all the other students are working hard and performing well, it raises the curve and you will also have to work hard.

Like many things, grading is subject to errors. For one thing, assigning grades is subjective and requires many small judgment calls. Grading is also subject to random errors and mistakes, and I am certain I will make a few. I try to reduce errors and lessen the impact of subjectiveness in my grading in these ways:

I ask a lot of questions on exams, with each question being worth only a small number of points. Therefore any errors or misjudgment in grading will not affect the overall grade very much. On average, the scores are more likely to be an accurate reflection of the student's knowledge.
If errors are pointed out to me after the exams are reviewed, I will fix them and adjust the points accordingly.

I resist increasing grades to the students who complain about their grades, unless I made an error.

I add the exam scores twice at separate times, to ensure that I do not make addition errors. I use a program to perform the actual addition; I key in all scores for all questions so that when a discrepancy occurs, I can go back and determine which score is correct.

I distribute the point spreadsheet to students, so they can verify that the score entered matches the score on their exams and homeworks.

I try to ask questions with answers that are clearly right or wrong, rather than essay or “tell-me-all-you-know” questions. Grading these involves making judgment calls and that introduces increased likelihood of random variation.

I also keep exact counts on all the exams to make sure that every exam is accounted for and results in a grade going into the point spreadsheet.

I try to make the entire process fair. Toward this end, I do not allow people to retake tests or perform additional work to increase their scores. Allowing this option to some people is simply not fair to the other students. I also do not grade optional work. Experience has shown that most of the best students will always do the optional work and get the extra points. Therefore, the optional work is not really optional. When a class is graded on a curve and you want more points, you have to do the optional work.

Please do not hesitate to let me know if you need more information about my grading procedure.