Words from Professor VII (November 26, 2014)

These are my responses to some of your feedback this morning.

- "Lack of examples...", "Pace too fast". I will improve my notes by adding in more examples next time. By scheduling the midterm outside regular meeting, we will have a double class, so the pace could be adjusted accordingly.

- " Exercises are too difficult..". I agree. Some of them were. Allow me to point out that the exercises given in this course are unlike some courses you took before, where the exercises are like examples or straightforward applications of the theorems taught in class. Here some exercises form an organic component of the course. They are of the nature of a theorem that you need to prove and even to apply in later occasions. This is the characteristic of an advanced math course.

- " Too much on functional analysis and space of infinite dimension." Yes, the passage from finite dimension to infinite dim spaces is the bridge from elementary to advanced analysis. What people deal in analysis is precisely infinite dim phenomena. We must confront and conquer them. In this course I intensively used only the space of continuous functions as our principal example, while in functional analysis people study general Banach spaces such as $C(X), L^p(X), l^p$, etc. I don't think functional analysis is too much here.

- "Should include complex analysis." Complex analysis is the study of complex analytic functions on the complex plane. It does not fit in this course. A new, theoretical course on complex analysis will be offered from 2015/16 and onward.

- Someone suggested to exclude differential equations. Let me explain, we use the Cauchy problem of differential equations to illustrate the power of the contraction mapping principle and Ascoli theorem. These materials are standard and extremely important in later development. Not wanting to spend too much time on this topic, I did deploy some materials to the assignment, which may confuse you. Last time I will proceed more carefully.

- "Homework can be double checked before putting on the web." I will do that next time. Thanks.

- Over all, the feedback shows the degree of difficulty is between OK and hard. That is exactly what I expected. I will keep it at this level.