



4005 755 01 - Neural Networks and Machine Learning Introduction

Hi guys,
Welcome to my Neural Networks and Machine Learning class!

This class is a bit non-conventional in different aspects. It is designed as a “blended” course. It means that I will try to employ novel methodologies in teaching this class, combining traditional teaching deliveries like lectures and class discussions with more work you will be required to do on-line. This way you will have more flexibility: you can do it any time, day or night and any place: the classroom or a sofa in your friend’s apartment, wherever, whenever, whatever it will help you to study more efficiently and achieve better results!

The class time in this course will be reduced. But you will have to spend more time on your independent study and on-line work. To prove my intentions and to test this concept from the very beginning I want you to spend some time on studying the online materials even before this class kicks off on November 26th. It will help you to decide if this class is good for you and/or suggest some possible modifications.

The first thing you have to do is reading this letter and following up the instructions. Please, go to the course page on mycourses.rit.edu. I believe you can do it any time after ITS makes it available on November 19 for students enrolled. Make sure that you do have an access to this page. If you do not and you are enrolled in this class, please, contact ITS immediately or if you are not enrolled, please, email me with your name and I will grant you an access to this page as a guest.

This course will have a lot of activities conducted through mycourses. If you click on the Content bar you will see that all my lecture notes as well as project and assignment descriptions are already there. I am planning to conduct the tests online also (I will have to prepare them this way). This class will have a big project also and it will include a research component. BUT so far I am not planning the final exams in this class. Please, think about it and get back to me if you do not like it and want to get your finals back on schedule. I am sure we will be able to fix it.

Now please, download the assessment document on mycourses. You see that this class will be project oriented with more than a half of all the points assigned for your **project** work and your research. You can do your project either individually or in small groups of 2-3 students. The requirements for individual and group projects may differ slightly but generally will be very similar. The project is designed as a group project but you can do it individually also. However, I am expecting a higher quality submission from the group of three than from a group of one. Penalties for late submissions/resubmissions will be different: for individual projects it will be 10% grade reduction per day and for group projects it will be 20% grade reduction per day. If you do your project in a group, please, coordinate your efforts and do it on time. I suggest you to have an initial discussion about your work assignments and to schedule your work to finish at

least a few days before the deadline. However, I am leaving all organizational aspects to you to decide.

I have put the project description online. Please, read it and have your questions ready for me. This short quarter you will run ONE project, which consists of five parts. You will have to submit all the parts separately. Those parts will be assessed separately also. However, unless and until you finish part 1, you will not be able to start part 2, so PLEASE keep your work on schedule. The submissions deadlines will be distributed between weeks Four and Nine. Commonly, you will have about one-two weeks to finish up the next part after submitting the previous one. The first part is due in four weeks. Unlike many other courses, in this class you have to start with your research. It will be the main component of your part 1 project, which includes bibliography search and research of the chosen topic. I suggest you to start working on it very soon. Remember that you will use the results of your research study later in the following up parts 3 and 4.

Your assessment includes another research component that is commonly missing: patent search and research. This activity becomes more and more important, especially within the industry. This is why I want you to learn about patents, patent research and prosecution. You will have to do it in your assignment 1. This assignment is individual and it is due even sooner, in less than three weeks time. Please, download it, read and analyze it and start working. Our college librarian Mr. Roman Koshykar will attend my first class and will give you some general help. He is available for any assistance you might need before and after this date.

You will be required to prepare and present to the class one neural networks design tool of your choice. Please, read Tool presentation document from mycourses. You can prepare and run your presentation in small groups of 2-3 students. As you see there are seven topics. What I want you to do first is choosing the topic and your partner(s). There are seven groups in the list. After you choose your presentation, please, enroll yourself into the corresponding group on mycourses. To do it click on the Groups bar, then select Tools category (**not** projects at this stage), tick the group you have chosen and do not forget to click on save. If there are already three students enrolled in this group, please, choose another one. You can do it any time from the time you are reading this letter until our December 1st class. **Please, enroll yourself.** To help you to make your decision I have put some advise how to prepare your presentation.

As soon as you decide if you want to do your project work individually or with partners, please, enroll yourself into a project group on mycourses. You can enroll yourself into any group that is vacant by that time. The group may consist of only one student also. So even if you do it individually, please, enroll yourself into a project group.

One of the features of this blended class will be on-line discussions, which you will be required to participate in. Every student has to participate in an on-line discussion. Your participation will be evaluated as a part of your assessment in this course. All discussion topics are divided into three groups:

- 1) Course administration
- 2) Discussions of student's TOOLS presentations: there are eight topics here. Every student has to submit his/her contribution within FOUR days after the presentation

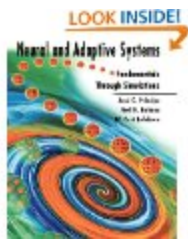
- 3) Project discussions –I am expecting your participation while you are doing a specific project part. You have to submit at least one entry to each project part discussion group. Your participation will be graded as a part of the project assessment. If you do not participate in a particular project part discussion or your contribution is not adequate, your grade for this project part will be reduced.

Please, read on the Discussions document for more information.

The last assessment component is the tests. Again, I am not planning the finals in this class and I am planning to conduct the tests online that might save you some time also. Currently I am planning two tests with at least one of them conducted online. The test problems may include theoretical questions, design and application problems. To help you to prepare yourself I have put some examples from the previous years on mycourses (see the Problems documents). We are not going to discuss these problems in class. They are for your self-preparation. Please, note that problems in these two sets are mixed. They are NOT distributed according to two quizzes.

Talking about a course assessment, I want to mention that I will follow up an official grading policy. One has to get a total grade higher than 90 to get an A and higher than 80 for a B.

As you might expect from a blended course, all the submission will be done online through mycourses. PLEASE, PLEASE submit on time in order not to lose any point and please, do not wait until the last minute to avoid any problems with the network traffic and the mycourses bandwidth.



As you see mycourses page has all lecture notes already available. Of course, I would love you to complement this information with a textbook reading. I recommend [Neural and Adaptive Systems: Fundamentals through Simulations](#) by José C. Principe, Neil R. Euliano, and W. Curt Lefebvre (Paperback - Dec 21, 1999) with the pricing information I took from Amazon [Buy new](#): \$99.00 [24 new](#) from \$45.97 [28 used](#) from \$14.85 . This book comes with a CD, which has a NeuroSolutions demo version, one of the tools you may use for the neural network design. However, I have to say that you might get this tool newer demo version online for free. Also, please, note I am not requiring you to buy any book, I am only recommending this book.

Now at this point I want you to submit your input into the online discussion topic. Please, click on the Discussions bar, choose Course administration forum and the My goal in this course as a topic. Please, submit a paragraph about what you want to learn and what you want me to teach and probably the way how you want me to do it or not to do it. Your input is really appreciated. After that go to I have a question or suggestion topic and submit your messages there. You can do it later on also. This topic allows anonymous messages. It means that I may not see the message origin if you do not want me to.

Finally, please, look at the Schedule document, which lists almost all activities.

Please, contact me with any questions, suggestions, etc.

See you in my class on November 26th.

Good luck!

L.Reznik