DEEP Activitity

- **Activity 1:**

  Prerequisite:
  Matrix and vector operations

  Follow *Crash Course in Matlab* and learn the basic of Matlab
  Do exercises:

  1.6 : 1
  2.6: 1,4,5,9
  3.6: 1,2,(3)

- **Activity 2:**

  Prerequisites:
  Matrix and vector Algebra
  Linear programming

  Finish Activity 1 if it hasn't been finished yet.
  Optimize your diet: Follow the exercise from *Linear Programming*
  Chemical Reaction Balance Problem
  Learn Simulink

- **Activity 3:**

  Prerequisite: Basic Signal and System/Control Design

  Some mathematical exercises
  Use simulink for control system design: an exercise from
  http://www.engin.umich.edu/group/ctm/examples/cruise/cc.html

  Tour of the multi-vehicle lab

- **Activity 4:**

  Use matlab and excel to search for Nash equilibrium: Based on the economics book

Tour of the optical network lab

- ## Activity 5:

Finishing what is left from the previous labs.
Optimization Numerical method:

```
? Manipulate
```

Manipulate[*expr*, {*u*, u_{min}, u_{max}}] generates a version
of *expr* with controls added to allow interactive manipulation of the value of *u*.
Manipulate[*expr*, {*u*, u_{min}, u_{max}, *du*}] allows the value of *u* to vary between u_{min} and u_{max} in steps *du*.
Manipulate[*expr*, {{*u*, u_{init}}, u_{min}, u_{max}, …}] takes the initial value of *u* to be u_{init}.
Manipulate[*expr*, {{*u*, u_{init}, u_{lbl}}, …}] labels the controls for *u* with u_{lbl}.
Manipulate[*expr*, {*u*, {u_1, u_2, …}}] allows *u* to take on discrete values u_1, u_2, ….
Manipulate[*expr*, {*u*, …}, {*v*, …}, …] provides controls to manipulate each of the *u*, *v*, ….
Manipulate[*expr*, c_u –> {*u*, …}, c_v –> {*v*, …}, …] links the controls to the specified controllers on an external device. ≫