# ECE 480 – Fall 2015Lecture ScheduleVer. 1.1

Professor Timothy Grotjohn

B113 Engineering Research Building

(Office Hours: MWF 11:20AM-NOON, 2220 EB)

grotjohn@egr.msu.edu

(Please place “ECE480” in the subject line)

Professor Lalita Udpa

Office: 2100C Engineering Building

udpal@egr.msu.edu

(Please place “ECE480” in the subject line)

Lecture hours: MWF 10:20-11:10AM

2250 Engineering Building

* Attendance Policy: All students must attend all lectures (except by prior approved arrangement or valid university excuse).  *Attendance will be taken*.
* **Schedule may change due to unforeseen circumstances & will be announced in class or by email.**

**Labs begin the week of Tuesday, September 8**

Your parts kits should be picked up from the ECE Shop before your lab section.

You can start picking up the kits on Friday, Sept. 4th.

## Week 1:

* Project Preference ranking forms due by Friday 9/4 at 5:00pm, electronically or in Prof. Grotjohn's mailbox in the ECE Office, 2120 EB
* Teams will be assigned and notifications made at Wednesday’s lecture (9/9).

Sept 2 – Class Overview, presentation of project descriptions, handout of preference ranking forms. (T. Grotjohn)
[Lecture Overheads](http://www.egr.msu.edu/classes/ece480/capstone/About480.ppt)

 Sept 4 – Video on Team Design | Discussion of design process.

## Week 2:

* Labs Start

Sept 9 – Introduction of team roles, project planning and engineering notebooks. (T. Grotjohn)

[Engineering Notebook Description](http://www.egr.msu.edu/classes/ece480/goodman/notebook.htm)

[Notebook Overheads](http://www.egr.msu.edu/classes/ece480/goodman/NotebookOverheads.ppt)

[Team Roles Description](http://www.egr.msu.edu/classes/ece480/goodman/Team-roles.htm)

[Team Roles Overheads](http://www.egr.msu.edu/classes/ece480/goodman/Team-roles.slides.htm)

Sept. 11 – Guest Lecturers:  Mr. Brian Wright, ECE Technical Services,

“Building Your Prototype and ECE Shop Resources for your Team Projects”

### Ms. Roxanne Peacock, on parts ordering and purchasing policies.

###  A laptop PC will be assigned to each team.

 [Lecture Notes -- Building Your Prototype](http://www.egr.msu.edu/classes/ece480/goodman/PrototypingLecture.ppt)

## Week 3:

Sept. 14 – Technical Lecture: Circuit protection, power supply circuits, and thermal models. Prof. F. Peng

[New PowerPoint Notes](http://www.egr.msu.edu/classes/ece480/goodman/PowerSupplyAndThermal%20Issues.PPT)

[Earlier Lecture Notes](http://www.egr.msu.edu/classes/ece480/goodman/reg-heat.htm)

### Sept. 16 – VOC: Understanding the Customer’s Viewpoint [2].  Mr. Gregg Motter, Retired from Dow Chemical Co. (or T. Grotjohn)

[Lecture Overheads](http://www.egr.msu.edu/classes/ece480/capstone/DFSSfiles/2_MSUVOC_12.pdf)

Sept. 18 – Guest Lecture: Prof. Erik Goodman Teaming; Group process rules developed; Intro to Project Management and MS Project

[Lecture Notes- Project Management and MS Project Usage](http://www.egr.msu.edu/classes/ece480/goodman/projmgtlectureohs.ppt)
[Lecture Notes- Project Management and MS Project Usage](http://www.egr.msu.edu/classes/ece480/goodman/ProjMgtOH.pdf) -- .pdf file

## Week 4:

* Pre-proposal due to facilitator at group meeting during week 4 Team web page started.
* GANTT chart due to facilitator, Prof. Grotjohn, and Prof. Udpa on Sept. 25 by 5:00PM.

Sep 21 – Assignment and explanation of proposal; overview of required reports; RFP distributed; policy on plagiarism, citing other work, and writing expectations. (T. Grotjohn)

[Team Design](http://www.egr.msu.edu/classes/ece480/capstone/f15/sep21/TeamDesign.htm) | [More Tech Writing](http://www.egr.msu.edu/classes/ece480/capstone/f15/sep21/MoreTechWriting.ppt) | [Memo](http://www.egr.msu.edu/classes/ece480/capstone/f15/sep21/memo_rfp.docx) | [Teaming Lecture](http://www.egr.msu.edu/classes/ece480/capstone/f15/sep21/TeamingLectureOH.ppt) | [Technical Communications](http://www.egr.msu.edu/classes/ece480/capstone/f15/sep21/tech_com.pdf)

### Sept. 23 – Six Sigma Overview and Introduction to Design for Six Sigma [1].

### Mr. Gregg Motter, Retired from Dow Chemical Co. (or T. Grotjohn) [**Lecture Overheads**](http://www.egr.msu.edu/classes/ece480/goodman/DFSSfiles/1_SS_Overview_08.pdf)

Sept 25 – Quality Function Deployment (QFD) Customer-Driven Development
[3]. Mr. Gregg Motter, Dow Chemical Co. (or T. Grotjohn)

### [Lecture Overheads](http://www.egr.msu.edu/classes/ece480/goodman/DFSSfiles/3A_MSU_QFD_08.pdf)

## Week 5:

* Voice of Customer assignment due to Mr. Motter by email (exact date TBA by Mr. Motter).
* Work with your team on your page for the Design Day Program, due about week 5 or 6 (exact date TBA).
* Practice oral proposal presentation with facilitator at weekly meeting.

Sep 28 – Technical Communications: Oral Proposal Presentations (L.Udpa)
[Lecture Notes](http://www.egr.msu.edu/classes/ece480/capstone/Sp11/files/lecture-1-23.pdf) | [Tech Writing Pointers](http://www.egr.msu.edu/classes/ece480/capstone/Sp11/files/MoreTechWriting.ppt)

### Working on Teams

[Lecture Notes](http://www.egr.msu.edu/classes/ece480/goodman/docs/resources/TeamDesign.html) | [Lecture Overheads](http://www.egr.msu.edu/classes/ece480/goodman/TeamingLectureOH.ppt)

Extra Notes

 [Technical Communications](http://www.egr.msu.edu/classes/ece480/capstone/f15/sep28/oralpres.ppt) | [Team-Based Design](http://www.egr.msu.edu/classes/ece480/capstone/f15/sep28/tbd.ppt)

Sep 30 – Six Sigma Optimization - MAIC [5]. Mr. Gregg Motter (or T. Grotjohn)

[Lecture Overheads](http://www.egr.msu.edu/classes/ece480/goodman/DFSSfiles/5_MAIC_Optimization.pdf)

Oct 2 – Function Definition - Powerful Problem Analysis Technique [4].

Mr. Gregg Motter, Dow Chemical Co. (or T. Grotjohn)

[Lecture Overheads](http://www.egr.msu.edu/classes/ece480/goodman/DFSSfiles/4_MSU_Fx_08.pdf) | [Function Definition](http://www.egr.msu.edu/classes/ece480/goodman/DFSSfiles/4_MSU_Fx_15.pdf)

## Week 6:

### FAST diagram due by email to Mr. Motter (exact date TBA by Mr. Motter).

### Final proposals due to facilitator, sponsor & Profs. Grotjohn and Udpa, Friday, Oct. 9 at 5:00; submit electronically.

Oct 5 – Team Oral Proposal Presentations: Teams 1, and 2

Oct 7 – Team Oral Proposal Presentations: Teams 3 and 4

Oct 9 – Team Oral Proposal Presentations: Teams 5 and 6

## Week 7:

Oct 12 – Team Oral Proposal Presentation Teams 7 and 8

Oct 14 – Team Oral Proposal Presentation Teams 9 and 10

Oct 16 – Standards Lecture and assignments for application notes and technical lectures. (L. Udpa)

[Standards](http://www.egr.msu.edu/classes/ece480/capstone/f15/oct16/standards.pptx) | [Application Note Assignment](http://www.egr.msu.edu/classes/ece480/capstone/f15/oct16/ana.docx) | [Technical Lecture Assignment](http://www.egr.msu.edu/classes/ece480/capstone/f15/oct16/techlec.doc)

## Week8:

Oct 19 – Demo I (Sign-up sheet will be posted on the Lab door for Demo schedule)

Oct 21 - Demo I (Sign-up sheet will be posted on the Lab door for Demo schedule)

Oct. **23** -- Guest Lecturer:  Intellectual Property, Mr. Steven Noll, patent attorney (Schiff Hardin, Chicago).

[Example Patent used by Mr. Noll](http://www.egr.msu.edu/classes/ece480/goodman/docs/NollPatent.pdf)

[Mr. Noll’s notes on IP](http://www.egr.msu.edu/classes/ece480/goodman/LecNotesReIntellProperty.PDF)

## Week 9:

* Photocopy of Engineering Notebook (up to date) due to facilitator at weekly meeting

Oct 26 – Design Issues Paper *– “Creativity”* (S. Udpa)

[PLM notes](http://www.egr.msu.edu/classes/ece480/capstone/Design%20Issues.pptx)

Oct. 28 – Guest Lecture *“Energy and Transportation”* Linos Jacovides

Oct. 30 --- Guest lecture:Assistive Technology -- Stephen Blosser, MSU RCPD

## Week 10:

Nov 2 - Entrepreneurship and small business start-up.  Neil Kane, MSU College of Business

Nov 4 – To be determined

Nov 6 – To be determined

## Week 11:

* **Individual Application Notes due to facilitators during week 11.**

[Application Note Assignment](http://www.egr.msu.edu/classes/ece480/capstone/f15/oct16/ana.docx)

Nov 9 –Team Technical Lectures: Teams 1 and 2

Nov 11 – Team Technical Lectures: Teams 3 and 4

Nov 13 – Team Technical Lectures: Teams 5 and 6

## Week 12:

Nov. 16 -- Team Technical Lectures: Teams 7 and 8

Nov. 18 --Team Technical Lectures: Teams 9 and 10

Nov 20 -- TBD

## Week 13:

Nov 23 – Demo Project Prototype

Nov 25 – Demo Project Prototype (continued)

Nov 27 – THANKSGIVING BREAK -No Class

## Week 14:

* **Professional self-assessment papers due to Profs. Grotjohn and Udpa and facilitators by Wednesday Dec. 2nd at 5:00PM (electronic submission)**

**Nov. 30 – End Game Instruction: Discussion of final report and other deliverables. (L. Udpa) Design Day procedures.**

**See detailed instructions for final report and all final deliverables** [HERE](http://www.egr.msu.edu/classes/ece480/capstone/FinalDeliverablesAndFinalReptFormat-S12.docx)

**Dec 2 – Guest Lecture:  Dr. Asif Naseem, Vice President, Oracle. Thirty years in engineering; if I knew then what I know now!**

**Dec 4 – Guest Lecture:  Dr. Asif Naseem, Vice President, Oracle. Big Data**

## Week 15:

* **Final Reports due Wednesday Dec. 9 by 4:30PM (see below)**

**See below for other last week deliverables**

Dec 7 – Evaluation Day: Course evaluations (SIRS), evaluations of facilitators will be done in class. (L. Udpa)

Dec. 9 – No class -- Team final preparation day - work on project/poster/oral presentation.

**Special note: FINAL REPORTS DUE ELECTRONICALLY AND PRINTED BY TODAY as follows:**

* To facilitator (electronic or printed, as they choose)
* To Prof. Udpa:  electronic (docx file) AND five (5) printed copies due in ECE Office, PRIOR to 4:30pm, for Prof. Udpa and judges to read.

(*Make an additional printed copy to give your sponsor at Design Day, if they attend, or for you to express mail to them no later than Monday, Dec. 14).*

* Final updates to web pages (videos, photos, results, and all other non-confidential items) should be made by 6:00 today (Wednesday) so that the judges may examine them Thursday.

Judging Criteria ([HERE](http://www.egr.msu.edu/classes/ece480/capstone/JudgingCriteria%204-13-12.doc)).

Two copies of your POSTER (see instructions on web page) are not DUE until Design Day Friday morning, BUT you should be printing them (in person at DECS office on 1st floor) Wednesday or EARLY THURSDAY, as it takes a while to set up, print, and laminate it. Remember that about 30-40 teams (ECE + ME + CSE + others) all need their posters printed for Friday morning.  Don’t wait until 4:00PM on Thursday to print your poster!  Mounting materials will be provided.

Note:  Print quota additions for poster printing and for printing multiple copies of final report will be available if requested (to Prof. Udpa) by Tuesday at noon.  Otherwise, you’re on your own to pay for additional quota if needed.

Dec 11 – **Design Day**

* In Engineering Building.  Final oral presentations, demonstrations of projects, poster displays graded/judged by instructor and invited judges. Detailed schedule to be announced in Design Day Brochure. Prizes announced at award ceremony ~1:00pm.
* Most ECE classes cancelled through 3:00; plan to spend the day.

ALSO DUE:

* Final Notebooks due to facilitator by 5:00PM.
* Final CD with ALL documentation due to Prof. Udpa by 5:00PM.  (May turn in CD and notebooks at ECE Office, labeled for ECE 480 (CD) or your facilitator (notebook)).

## Week 16: Final Exam Week

* Due Monday, Dec. 14 by 12:00 noon: You must submit (electronically to Profs. Grotjohn and Udpa) your evaluation of the contributions of your team members (get it [here](http://www.egr.msu.edu/classes/ece480/capstone/Sp11/files/EvaluationOfTeammateContributions-S11.doc)).

* Due Monday, Dec. 14by 5:00PM: You must have cleaned out your lockers, turned in all parts and project materials not going back to your sponsor, sent your hard-copy report and CD to your sponsor, and had the ECE Shop sign off on the form indicating completion, or grade will be withheld and possibly reduced.