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EE641 - Model-Based Image and Signal Processing

Fall 2017

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*Instructor:* Charles A. Bouman

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    Course Hours: MWF 1:30 to 2:30

    Classroom: Wang Hall 2579

    Class TA: Jing Li - li1463@purdue.edu

    Additional TAs: Thilo Balke - tbalke@purdue.edu, Qiulin Chen - chen2114@purdue.edu

    Additional TAs: Dilshan Godaliyadda - ggodaliy@purdue.edu, Soumendu Majee - smajee@purdue.edu

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    Office Hours: after class or by appointment

    Course Web Page: https://engineering.purdue.edu/~bouman/ee641/

    Lab Web Page: https://engineering.purdue.edu/~bouman/grad-labs/

    Email address for off-campus homework submission: hwbouman@gmail.com

*Primary Reference:*

1. Class notes: C. A. Bouman, *Model Based Image Processing.*

*Supplementary References:*

1. T. Hastie, R. Tibshirani, and J. Friedman, *The Elements of Statistical Learning: Data Mining, Inference, and Prediction,* Springer, 2009.

2. R. Chellappa and A. Jain, *Markov Random Fields: Theory and Application,* Academic Press, 1993.

3. S. D. Silvey, *Statistical Inference,* Chapman & Hall, 1975.

4. A. K. Jain, *Fundamentals of Digital Image Processing,* Prentice-Hall, 1989.

5. A. Rosenfeld and A. Kak, *Digital Picture Processing,* volumes 1 and 2, Academic Press, 1982.

6. R. Kindermann and J. L. Snell, *Markov Random Fields and their Applications,* Providence: American Mathematical Society, 1980.

7. A. Tikhonov V. Arsenin and F. John, *Solutions of Ill-Posed Problems,* V. H. Winston & Sons, 1977.

This course will cover topics in image processing at the level of current research. Reference material will be primarily in the form of journal publications. The course will include computer homework assignments, computer projects, one midterm and a final. Final grades will use the following weighting.

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| Homework and computer projects | 30% |
| Midterm #1 | 30% |
| Final exam | 40% |