

Homework Format

In order to facilitate grading of homework problems, homework shall meet the following specifications:

1. Hand written or typed on 8.5"x11" page.
2. If not typed then for text and equations, use an HB or No. 2 pencil (or darker), or blue or black ink. No other colors please, except in diagrams or graphs.
3. All pages should be numbered i/j in top right hand corner, with your name appearing at the top of each page. It is O.K. to use your initials after the first page.
4. All work must be shown for full grade - be as thorough as possible.
5. Writing must be legible and literate - if the grader cannot read your handwriting, you will receive no credit for the problem. For electronic submission there must be adequate contrast to enable grading.

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6. Answers are to be boxed and right justified, with the variables, values (if any) and units (if any), included in the box. Right justified means placed on the right side of the page.
7. Leave half an inch between consecutive parts of a question, and draw a line across the page at the end of each complete question.
8. No part of a question should appear in any margin of the paper.
9. Diagrams and graphs should be of a good size (say at least 3x5 sq. inch), and may contain colors. Diagrams and graphs must be titled, labeled, axis labeled, and clearly drawn. Tables should also be titled.
10. Graphs should be scaled (put number on axes), labeled (put names /units on axes), and titled at the bottom of the graph. Any graph which is not titled will not be graded. Where possible use conventional units such as bits/sec, Hz and km.

Graphs and plots should be done with a plotting tool.

11. If work is submitted on paper then all work containing more than one page must be stapled - no paper clips and no folded corners. Work is to be shown on one sided of the page, not front and back of pages.

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Example

12-07-2023

EECS 861
Homework 13

1/6
Name
Student Number

1. We want to estimate a received signal X from K observations of Y where Y is modeled as $Y=X+N$. Here, $K=20$ and

$$\bar{y} = \frac{1}{20} \sum_{i=1}^{20} y_i = 18$$

N is Gaussian with $N(0, \sigma_N^2)$

X is Gaussian with $N(12, \sigma_X^2)$

N and X are S.I., For the following 3 cases:

Case 1. $\sigma_N^2 = 0.1$, $\sigma_X^2 = 15$

Case 2. $\sigma_N^2 = 15$, $\sigma_X^2 = 15$

Case 3. $\sigma_N^2 = 15$, $\sigma_X^2 = 0.1$

- a. The MAP estimator for X .



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