## COURSE: Probability and Statistics

| DEGREE: ENGINEERING PHYSICS | YEAR: 1 | TERM: 2 |
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| WEEKLY PLANNING |  |  |  |  |  |  |  |  |
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| $\begin{aligned} & \mathbf{w} \\ & \mathbf{E} \\ & \mathbf{E} \\ & \mathbf{K} \end{aligned}$ | $\begin{aligned} & \mathrm{S} \\ & \mathrm{E} \\ & \mathrm{~S} \\ & \mathrm{~S} \\ & \mathrm{I} \\ & \mathrm{o} \\ & \mathrm{~N} \end{aligned}$ | description | TEACHING <br> (mark X) |  | SPECIAL ROOM FOR SESSION (Computer class room, audio-visual class room) | WEEKLY PROGRAMMING FOR STUDENT |  |  |
|  |  |  | $\begin{aligned} & \text { L } \\ & \text { E } \\ & \text { C } \\ & \text { T } \\ & \text { U } \\ & \text { R } \\ & \text { E } \\ & \hline \end{aligned}$ | $\begin{gathered} \hline \mathrm{S} \\ \mathrm{E} \\ \mathrm{M} \\ \mathrm{I} \\ \mathrm{~N} \\ \mathrm{~A} \\ \mathrm{R} \\ \mathrm{~S} \\ \hline \end{gathered}$ |  | DESCRIPTION | CLASS HOURS $(1,66=50+50$ $\min )$ | HOMEWORK HOURS (Max. Estim. 6,5h) |
| 1 | 1 | Ch1. Presentation and Introduction. | X |  |  | Study the main contents of Chapter 1. | 1.66 | 6.5 |
|  | 2 | Ch1. Problems. |  | X |  | Solve problems alike to the ones solved furing the lecture. | 1.66 |  |
| 2 | 3 | Ch2. Theory: Probability I. | X |  |  | Study the main probability concepts | 1.66 | 6.5 |
|  | 4 | Ch2. Probability problems I. |  | X |  | Solve problems alike to the ones solved during the lecture. | 1.66 |  |
| 3 | 5 | Ch2. Theory: Probability II. | X |  |  | Study the total probability and bayes theorems | 1.66 | 6.5 |
|  | 6 | Ch2. Probability problems II. |  | X |  | Solve problems alike to the ones solved during the lecture. | 1.66 |  |
| 4 | 7 | Ch3. Theory: Univariate Statistics. | X |  |  | Study numerical summaries for univariate data | 1.66 | 6.5 |
|  | 8 | Computer Laboratory I: Univariate Statistics |  | X | X | Laboratory assignment | 1.66 |  |
| 5 | 9 | Ch4. Theory: Random Variables I. | X |  |  | Study probability distributions and charasteristic measures | 1.66 | 6.5 |
|  | 10 | Ch4. Random Variables problems I. |  | X |  | Solve elementary random variable problems | 1.66 |  |
| 6 | 11 | Ch4. Theory: Random Variables II. | X |  |  | Study transformations and examples | 1.66 | 6.5 |
|  | 12 | Ch4. Random Variables problems II. |  | X |  | Solve problems alike to the ones solved during the lecture. | 1.66 |  |
| 7 | 13 | Continuous evaluation. | X |  |  | Study for continuous evaluation | 1.66 | 6.5 |
|  | 14 | Computer Laboratory II: Probability and Random Variables |  | X | X | Laboratory Assignment | 1.66 |  |
| 8 | 15 | Ch5. Theory. Statistical Inference I | X |  |  | Study estimation and estimators properties | 1.66 | 6.5 |
|  | 16 | Ch5. Statistical Inference Problems I. |  | X |  | Solve problems alike to the ones solved during the lecture. | 1.66 |  |
| 9 | 17 | Ch5. Theory. Statistical Inference II | X |  |  | Study estimation techniques | 1.66 | 6.5 |
|  | 18 | Ch5. Statistical Inference Problems II. |  | X |  | Solve problems alike to the ones solved during the lecture | 1.66 |  |
| 10 | 19 | Ch6. Theory: Confidence Intervals I | X |  |  | Study the properties of confidence intervals for one population | 1.66 | 6.5 |
|  | 20 | Ch6. Confidence Intervals Problems I |  | X |  | Solve problems alike to the ones solved during the lecture | 1.66 |  |
| 11 | 21 | Ch6. Confidence Intervals Problems II + Ch 7. Theory Hypothesis Testing I | X |  |  | Study the properties of confidence intervals for two populations and introduce hypothesis testing | 1.66 | 6.5 |
|  | 22 | Ch7. Hypothesis Testing Problems I |  | X |  | Solve problems alike to the ones solved during the lecture | 1.66 |  |
| 12 | 23 | Ch7. Theory. Hypothesis Testing II | X |  |  | Study error types, p-value and power of a test | 1.66 | 6.5 |
|  | 24 | Computer Laboratory III: Statistical Inference |  | X | X | Laboratory assignment | 1.66 |  |
| 13 | 25 | Ch8. Theory: Goodness of Fit tests | X |  |  | Study the main goodness of fit tests | 1.66 | 6.5 |
|  | 26 | Ch8. Goodness of fit test Problems I |  | X |  | Solve problems alike to the ones solved during the lecture | 1.66 |  |
| 14 | 27 | Continuous evaluation | X |  |  | Study for continuous evaluation | 1.66 | 6.5 |
|  | 28 | Computer Laboratory IV: Goodness of fit tests. |  | X | X | Laboratory assignment | 1.66 |  |
|  | 29 | Ch8. Goodness of fit test problems II |  |  |  | Solve problems alike to the ones solved during the lecture | 1.66 | 3.25 |
|  |  |  |  |  |  | Subtotal 1 | 48 | 94 |
|  |  |  |  |  |  | Total 1 (Hours of class plus student homework) | 142 |  |



