You've got a solid but dense course to cover in a week. It's doable with the right plan, especially if you balance **core theory**, **book references**, and **hands-on practice** with R or Python (or SPSS if needed).

✅ **Study Plan (1 Week Crash Course)**

Day	Focus Area	Topics	What to Use
Day 1	Probability Distributions	Binomial, Poisson, Normal, Exponential, Gamma, Beta, etc.	**Books** + R practice
Day 2	Sampling Techniques	Population, sample, random sampling, sample size, estimation of mean/proportion	**Books** + R practice
Day 3	Estimation Methods	MLE, Method of Moments, Bayes estimators	**Theory** + implement in R
Day 4	Hypothesis Testing	Type I/II errors, significance, MP and UMP tests	**Theory** + t-test/z-test in R
Day 5	Regression Basics	Simple and multiple regression, model matrix	**Theory** + lm() in R
Day 6	ANOVA & ANCOVA	One-way, two-way ANOVA for fixed models	aov(), anova() in R
Day 7	Revision + Practical	Go through all R/SPSS implementations, summary sheets, previous year papers	R + SPSS (if required)

📚 **Best Book References**

1. Theory:

- **"Fundamentals of Mathematical Statistics" by S.C. Gupta & V.K. Kapoor**
  ✅ Great for probability distributions, sampling, estimation, hypothesis testing.

- **"Statistical Inference" by George Casella and Roger L. Berger**
  ✅ Advanced but covers estimation methods, hypothesis testing in depth.

- **"Introduction to the Theory of Statistics" by Mood, Graybill, and Boes**
  ✅ Classic for sampling, estimation, and hypothesis testing.

2. Practical (R-focused):

- **"The Art of R Programming" by Norman Matloff**

- **"R for Data Science" by Hadley Wickham** *(Free online at https://r4ds.had.co.nz/)*

- **"Practical Statistics for Data Scientists" by Peter Bruce & Andrew Bruce**

3. SPSS Users:

- **"Discovering Statistics Using IBM SPSS Statistics" by Andy Field** – Best SPSS book, beginner-friendly with deep examples.

🧪 Hands-On (R focused):

You can use these R packages:

- stats (for distributions, regression, tests)

- ggplot2 (for visualization)

- car, MASS, psych, e1071, DescTools (for ANOVA, regression diagnostics, skewness, kurtosis)

- sampling (for survey designs)

I can also provide you **ready-to-run R scripts** for each day's practical component if that helps you move faster.

✅ Where to Start?

Start with Day 1: Probability Distributions. Learn the formulas and theory briefly, then immediately jump into:

Binomial example

dbinom(3, size=10, prob=0.5)

Normal Distribution

dnorm(0, mean=0, sd=1)

Gamma

dgamma(2, shape=2)

Plotting

```
curve(dnorm(x, mean=0, sd=1), from=-3, to=3)
```

Would you like me to create a **daily breakdown with R code examples and reading links** for each day? That way, you can just follow along without overthinking.