

The IPSUR package: an Introduction to Probability and Statistics Using R

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IP_SUR stands for Introduction to Probability and Statistics Using R, ISBN: 978-0-557-24979-4, which is both a textbook and an R package written for an undergraduate course in probability and statistics. Attendees of the class for which the book was written include mathematics, engineering, and computer science majors. The approximate prerequisites are two or three semesters of calculus and some linear algebra in a few places.

IP_SUR is FREE, in the GNU sense of the word. This entails both opportunities and challenges, and in this presentation we will discuss a little bit of both.

IP_SUR contains several interrelated parts: the *Document*, the *Program*, the *Package*, and the *Ancillaries*. The Document is what the end-user reads. The Program (essentially a gigantic Sweave vignette) provides an efficient means to modify the Document. The Package is an R package that houses the Program and the Document, and makes it easy for students to use. Indeed, after installation of the **IPSUR** package the student needs only issue

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library(IPSUR)
read(IPSUR)
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to begin study. Finally, the Ancillaries are extra materials that reside in the Package and were produced by the Program to supplement use of the Document. In this talk, we briefly detail each of these in turn.

Since IP_SUR is *free*, instructors are *free* to tailor it to suit the needs of their individual classes of students. We will spend part of the time outlining steps instructors can take to accomplish this goal.

References

Kerns, G. J. (2010). The IP_SUR Project Page on R Forge.
<http://ipsur.r-forge.r-project.org/>.

Kerns, G. J. (2010). Introduction to Probability and Statistics Using R. First Edition.