BOOK REVIEW

Heat Conduction, Second Edition, by Latif M. Jiji *(The City College of the City University of New York, New York, NY), Begell House, Inc., NY, 2003. 260 pp., ISBN: 1-56700-191-2, $54.00*

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I have had the fortunate experience of teaching my graduate Conduction Heat Transfer class using Latif Jiji's text Heat Conduction. I have taught the course numerous times and have used several different books (e.g., Carslaw and Jaeger, Ozisik, Arpaci). I found Jiji's text to be the easiest for the students to comprehend the subject. It is simple, straight forward, and yet shows all of the important points. His organization and selection of subject material is very good. His use of the simplicity of one-dimensional problems to introduce the essential steps of an analysis is excellent. Conduction is one of those subjects that can quickly overwhelm a student with heavy mathematics. He/she loses sight of the basic concepts of conduction heat transfer and the course degenerates into a treatise on higher mathematics.

This is a relatively inexpensive book and represents the "best bang for the student's buck".

Adoption of the text includes a very detailed PowerPoint set of slides for the complete book. It is a great asset for teaching the course. I didn't have to waste time writing the equations on the board and having the students copy them. I passed out copies of the PowerPoint slides. This speeded up the class and allowed me the opportunity to discuss problems that the students were encountering in their jobs, e.g., Friction Stir Welding, buried pipelines, etc.

Jiji's examples are clear and enlightening. The text is well conceived and wisely implemented. His example problems are all followed by discussions involving: (1) Observations, e.g., symmetry; (2) Origin and Coordinates; (3) Formulation, i.e., assumptions, governing equations, boundary and initial conditions; (4) Solution; (5) Checking, e.g., dimensional, limiting, symmetry, quantitative, boundary, and initial conditions; and (6) Comments. The Solutions Manual for the text is excellent. Each problem is restated in the Manual so that it is not necessary for the Instructor to have to resort to looking back and forth between the textbook and the Solutions Manual when he/she is discussing a problem. The solutions are very detailed and each problem solution is followed by the abovementioned considerations: namely, Observations, Formulation, Solution, Checking, Comments, etc.

The students were especially appreciative of Jiji's Appendix A which tabulates the solutions for the ordinary differential equations that are encountered in the body of

the textbook. His "Online Tutor" and "Homework Facilitator" proved to be very useful tools for the students when they were doing their homework. These tools, as well as, the Solutions Manual and PowerPoint lectures are available to the Instructor on disk upon adoption of the text.

Jiji's chapter on Heat Transfer in Living Tissue is enticing. It gives an excellent introduction to this important area of Biomedical Engineering.