



# The Finite Element Method: A Practical Course

*By G. R. Liu, S. S. Quek*

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Written for practicing engineers and students alike, this book emphasizes the role of finite element modeling and simulation in the engineering design process. It provides the necessary theories and techniques of the FEM in a concise and easy-to-understand format and applies the techniques to civil, mechanical, and aerospace problems. Updated throughout for current developments in FEM and FEM software, the book also includes case studies, diagrams, illustrations, and tables to help demonstrate the material.

- Plentiful diagrams, illustrations and tables demonstrate the material
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## **The Finite Element Method: A Practical Course** By G. R. Liu, S. S. Quek Bibliography

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## **Editorial Review**

### **About the Author**

Dr. Liu received his PhD from Tohoku University, Japan in 1991. He was a Postdoctoral Fellow at Northwestern University, U.S.A. He is currently the Director of the Centre for Advanced Computations in Engineering Science (ACES), National University of Singapore. He is also an Associate Professor at the Department of Mechanical Engineering, National University of Singapore. He authored more than 200 technical publications including two books and 130 international journal papers. He is the recipient of the Outstanding University Researchers Awards (1998), for his development of the Strip Element Method. He is also a recipient of the Defence Technology Prize (National award, 1999) for his contribution to development of underwater shock technology at Singapore. He won the Silver Award at CrayQuest 2000 (Nation wide competition in 2000) (Nationwide competition in 2000) for his development of meshless methods. His research interests include Computational Mechanics, Element Free Methods, Nano-scale Computation, Vibration and Wave Propagation in Composites, Mechanics of Composites and Smart Materials, Inverse Problems and Numerical Analysis.

Mr. Quek received his B. Eng. (Hon.) in mechanical engineering from the National University of Singapore in 1999. He did an industrial attachment in the then aeronautics laboratory of DSO National Laboratories, Singapore, gaining much experience in using the finite element method in areas of structural dynamics. He also did research in the areas of wave propagation and infinite domains using the finite element method. In the course of his research, Mr Quek had gained tremendous experience in the applications of the finite element method, especially in using commercially available software like Abaqus. Currently, he is doing research in the field of numerical simulation of quantum dot nanostructures, which will lead to a dissertation for his doctorate degree. To date, he had authored two international journal papers. His research interests include Computational Mechanics, Nano-scale Computation, Vibration and Wave Propagation in Structures and Numerical Analysis.

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