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Wolfram Education Group

Your Mathematica® Learning Resource

WOLFRAMRESEARCH
www.wolfram.com



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ABOUT WOLFRAM EDUCATION GROUP

Wolfram Education Group provides the highest quality training resources for our customers, including courses for a variety of levels of *Mathematica* expertise and free online seminars. Courses are offered live over the internet, onsite at customer locations, and in computer classrooms and Bring Your Own Laptop (BYOL) locations throughout the world. New courses that reflect the evolving needs of the *Mathematica* community are constantly under development, and existing courses are regularly updated to include new *Mathematica* technologies. Free seminars are brief presentations about what's new in *Mathematica* and its emerging technologies.

INSTRUCTORS

Wolfram Education Group courses are developed and taught by *Mathematica* experts, often by *Mathematica* developers. Our certified instructors are required to have years of experience in using and presenting *Mathematica*; they undergo a rigorous evaluation process to become certified by Wolfram Education Group and to maintain their certification.

ONLINE TRAINING

Wolfram Education Group online classes offer certified *Mathematica* training live over the internet. Join an online class from your office or home by connecting to the web from your own computer. A courseware download consisting of *Mathematica* notebooks and packages is included with your training registration, and a 30-day *Mathematica* training version is available at no additional cost.

ONSITE TRAINING

Wolfram Education Group offers onsite training, giving you the opportunity to schedule any of the Wolfram Education Group classes at your site. This option provides a means for your organization to customize our courses to your specific environment and gives you a fast and efficient way to get a whole group productive with *Mathematica*, saving on travel expense and out-of-office time.

CLASSROOM TRAINING

Wolfram Education Group selects only the best venues for instruction. State-of-the-art computer classroom facilities host our classes in cities worldwide, and BYOL events are held in comfortable meeting rooms at popular locations.

COURSES



M50: An Introduction to *Mathematica* in the Classroom

Designed to give high-school and community-college teachers an introduction to *Mathematica*, this course provides the background needed to use *Mathematica* to prepare classroom materials, create quizzes and exams, and create student projects.



M100: An Introduction to *Mathematica*

This training course gives direct experience with the basic features needed to become a proficient user of *Mathematica*, including programming, visualization and graphics, the notebook interface, symbolic computation, and numerical computation.



M101: A First Course in *Mathematica*

This course gives direct experience with all of the basic features of *Mathematica* and provides a comprehensive foundation for advanced work in computation, programming, and visualization. This course is available in Danish, French, German, and Japanese.



M102: Project Session

Scheduled in conjunction with M101, this session explores selected topics. Participants solve computational problems in their own areas of interest and application.



M205: Visualization and Dynamic Interactivity

This short course series is designed for people who want to take advantage of *Mathematica's* graphical and visualization tools as well as dynamic elements. Section A of the course is designed to help users master the two- and three-dimensional graphical functions and options in *Mathematica*. Section B covers the interactive elements in *Mathematica*, including animations, the Manipulate function, sliders, popup menus, and more.



M215: Applied Statistical Analysis with *Mathematica*

This series of short courses uses real-world and simulated datasets to demonstrate how to import data, extract data based on criteria, analyze the data, and visualize the results. Section A discusses descriptive statistics and visualization for data and distributions, hypothesis testing, and ANOVA. Section B covers linear and nonlinear fitting, regression diagnostics, robust estimation, maximum likelihood estimation, and generalized linear models.



M221: Introduction to Programming in *Mathematica*

This course focuses on the programming capabilities of *Mathematica*, including functional, procedural, and rule-based programming. It includes practical hands-on exercises, and shows how to choose the appropriate programming paradigm for solving problems.



M225: Parallel Computing with *Mathematica*

This short course provides an introduction to parallel and distributed programming in *Mathematica*. It discusses the underlying technology and core functions for developing parallel applications, and provides examples of the parallel development process. The course provides the necessary knowledge and understanding to explore the parallel capabilities of *Mathematica*, which are applicable both to the multiprocessor personal computer and the large-scale computer grid.



M235: *Mathematica* Development using Wolfram *Workbench*[™]

This short course covers the major concepts and features of the integrated development environment at the core of Wolfram *Workbench*. Features such as source code editing, debugging, profiling, and unit testing for advanced development of *Mathematica* code and projects will be presented and explained.



M255: web*Mathematica*[™] using Wolfram *Workbench*

This short course gives an introduction to the core features of web*Mathematica*, along with the development tools provided by Wolfram *Workbench*. The course is designed primarily for anyone interested in developing web*Mathematica*-powered sites that are built on *Mathematica* applications, for clients to access through a web browser.



M310: Digital Image Processing

This course presents the theory and practice of digital image processing with *Mathematica* and focuses on the *Digital Image Processing* package, demonstrating its features and capabilities and including numerous examples and practical hands-on exercises.



M330: Neural Networks

This course presents the theory and practice of neural networks with *Mathematica* and the *Neural Networks* package. It contains relevant theory explaining practical issues when neural networks are used to find relations in data, and includes hands-on exercises illustrating practical solutions to problems using neural networks.

FREE ONLINE SEMINARS

Our seminar series offers brief presentations by senior Wolfram Research technical staff on topics of interest to *Mathematica* newcomers as well as to experienced users. These seminars provide you with an easy way to learn about what's new in *Mathematica* and find out about emerging technologies. They give you a special opportunity to learn from *Mathematica* experts, and best of all, they're free! Seminars run about 1 hour; live seminars include 10-15 minutes for questions. Live seminar dates and times are listed on the Wolfram Education Group seminar calendar. On Demand seminar recordings are now available, so you can watch anytime.

Seminar Catalog: www.wolfram.com/weg/seminars

For a complete schedule, please visit us at: www.wolfram.com/weg.

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S01: An Overview of *Mathematica* for Education

This seminar provides an overview of the *Mathematica* functionality that makes it easy for educators to integrate the software into precollege, community college, and higher education classrooms. Whether you have used *Mathematica* for years or have no technical computing experience, you'll see many examples of *Mathematica*'s use for education that can be implemented immediately. Resources and presentation materials are made available to participants.



S10: A Technical Overview of *Mathematica*

This seminar provides an introduction to the major technologies in *Mathematica* and their applications across disciplines. Resources and presentation materials are made available to participants, including sample "jump-start" computational tasks with solutions provided.



S11: What's New in *Mathematica* 7

This seminar gives a brief overview of the new features in *Mathematica* 7, including parallel computing, image processing and analysis, discrete calculus, splines, vector visualization, statistical model analysis, new data collections, and much more. Resources and notebooks are made available to participants.



S13: Introduction to Visualization with *Mathematica*

Taught by a senior graphics developer, this seminar provides a closer look at the new visualization options in *Mathematica*. Attendees receive an introduction to `MaxRecursion` and `PlotPoints`, the basic concepts necessary to achieve high-quality plots. Several examples are presented.



S14: Creating Demonstrations

Popular among educators, this seminar, presented by a Demonstrations editor, gives a brief introduction to the Wolfram Demonstrations Project, and shows how *Mathematica* users can write and publish their own Demonstrations and thereby join the growing community based around the project.



S15: Senior Developer Q&A

Participate in a Q&A session with a senior *Mathematica* developer. Developers (one per session) share their expertise about the system's structure and design, and its broad application in a variety of professional and academic fields. Discuss exciting new innovations and technologies with the pros.



S16: College Calculus with *Mathematica*

Presented by an experienced teacher, this seminar offers an overview of calculus in *Mathematica*. Significant historical and practical calculus examples are presented and solved, using the symbolic, graphical, and interactive features available in *Mathematica*.



S17: Applied Parallel Computation with *Mathematica*

Learn real-world solutions with this seminar, which provides a brief overview of *Mathematica*'s parallel capabilities applied to several disciplines. The presentation covers examples in finance, engineering, biology, and mathematics.



S18: Import and Export Data Formats in *Mathematica*

This seminar presents an introduction to the `Import` and `Export` functions in *Mathematica*. With the help of many examples, it illustrates how to work with data formats, over 100 of which are supported, from a variety of application areas.



S19: Discrete Calculus with *Mathematica*

This seminar offers an overview of discrete calculus in *Mathematica* along with applications such as random number generation, chaotic dynamical systems, and the analysis of algorithms. Examples illustrating the new capabilities for symbolic summation and convergence testing of infinite series in *Mathematica* 7 are given. Insight into the internal implementation and user-extensibility of these features are provided during the seminar.



S21: Working with Data Collections

This seminar introduces computable data collections and shows how to work with them in *Mathematica*. Examples are drawn from mathematics, physics, chemistry, economics and finance, geopolitics, linguistics, and more.



S22: Overview of *webMathematica*™

This seminar provides an introduction to *webMathematica*. Topics covered include an overview of *webMathematica* technology, a tour of example sites highlighting key and new features, and *webMathematica* development tools. Presentation and example materials are made available to participants.



S24: Working with Imported Data in *Mathematica*

Mathematica provides a variety of tools for importing and manipulating data. This seminar walks through several concrete applied examples of working with imported data in some widely used formats, such as XLS, HDF, text, DXF, and FASTA.

For more information, schedules, or to register for these free seminars, visit the Wolfram Education Group online at:

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