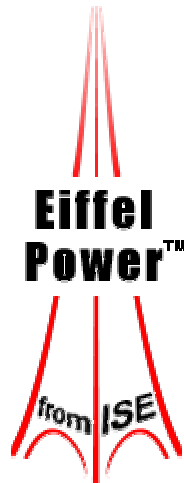


# Interactive Software Engineering

## Eiffel University Partnership Program



## TEACHING THE BEST

We know that, as computer science educators, you want to teach your students the best: skills that will land them a job and enable them to grow in that job.

Most educators know all too well the limitations of the solutions that used to work in the seventies and eighties - Pascal for introductory programming, perhaps a bit of Scheme to encourage abstract thinking, C for systems programming. The challenges of software development today demand a more modern approach.

CS and information systems departments around the world have found the solution: ISE Eiffel. Backed by years of successful experience over four continents, Eiffel has proved to be the method of choice for universities that place teaching quality and student satisfaction at the top of their concerns.

Only with ISE Eiffel do you get:

- **The full benefit of object technology** -- from the team that wrote the book.
- **A simple, clear, easy to learn language.** No strange syntax; forget ampersands and braces, forget complexity; to learn the concepts is to learn the notation.
- Loads of **high-quality libraries**, giving students access to some of the best code around, both to develop their own software and to learn from the masters through the time-honored practice of apprenticeship.
- **Software components** covering data structures, algorithms, graphics, databases, networking, Web programming, numerical computation and more.
- **A gentle approach to systematic software construction:** EiffelStudio is the only environment that offers extensive assertions (preconditions, postconditions, invariants) for teaching students the discipline of Design by Contract™, -- the ideal paradigm to train quality-conscious software developers.
- The flashiest **development environment** around, with graphical tools, fast compilation, debugging, browsing, documentation and more.
- **Openness:** Eiffel talks to C, to C++, Java, CORBA, COM, and .NET so that your students learn to use the power of object technology to integrate software written using other approaches. Eiffel is a .NET language and is fully .NET compliant.

- **The support of a team** - ISE - which understands the academic environment and enjoys working with academics for the benefit of their students.

## WHAT IS ISE EIFFELSTUDIO

ISE EiffelStudio is a seamless object-oriented development environment designed for producing quality software.

The ISE EiffelStudio environment provides an integrated O-O solution covering the full software lifecycle, from analysis and design to code generation, maintenance, and reverse engineering.

ISE Eiffel is one of the most portable environments available today, providing full source-code compatibility across a wide range of client and server platforms, from Windows NT/2000/XP and Windows 95/98/Me to all major Unix brands, Linux and VMS. ISE EiffelStudio is ideal for client-server and cross-platform development.

ISE EiffelStudio offers:

- A complete IDE covering every stage of the software lifecycle. The IDE offers seamless integration between graphical representation of the system and its source.
- A set of libraries covering multiple aspects of software development:
  - Fundamental data structures and algorithms.
  - Graphical applications (both native and multi-platform).
  - Database connectivity.
  - Web applications.
  - Lexical analysis and parsing facilities.
  - Threading support.
  - Numerical computation (NAG).
  - A GUI builder, generating code for multi-platform applications.
  - Legacy ++ - C++ class wrapper: re-engineer C++ applications, wrapping them into Eiffel classes.

## EIFFEL: GATEWAY TO THE WORLD

With Eiffel you are not stuck within the confines of one environment. Eiffel focuses on the concepts, not on notational details. Countless educators have remarked how much easier it is to teach C++, Smalltalk, Java or even C once the students have mastered the techniques of modern system construction through Eiffel.

Students agree too, and so do corporate recruiters and journalists. According to Amy Cody-Quinn from Management Recruiters International, quoted in ComputerWorld: " *There is a big problem with people who say they know C++ -- but they don't really know how to do objects. If they have Eiffel on the résumé, then we know they really have the proper understanding of what they are doing* " (in ComputerWorld, December 18, 1995).

Students with a narrow set of skills are sure to lose in today's competitive job environment. With Eiffel you build a strong basis from which students can learn all the major approaches to software construction. You equip them with the problem-solving skills that will make them able to learn new languages and tools quickly and effectively. As Steve Tynor wrote in the May, 1996 special Eiffel issue of the Journal of Object-Oriented Programming: " *In Eiffel there is no long laundry list of low-level things you should and should not do... The consequence is that in the Eiffel culture the problem domain becomes the central focus of concern... The programmer has more time to design for reusability, to implement the design correctly, and to ensure that both the design and the implementation properly model the domain. After all, creating systems for solving real-world problems is why we write programs in the first place.* " What better motto for your students?

## TEXTBOOKS

There are plenty of textbooks to help you make your Eiffel-based course a success.

- The classic: *Object-Oriented Software Construction, 2<sup>nd</sup> Edition* by Bertrand Meyer, now in its long-awaited second edition, which the *Journal of Object-Oriented Programming* calls "epoch-making". The reference on object technology and modern software engineering practice.
- *Eiffel: the language* by Bertrand Meyer. The language reference. Prentice Hall PTR; ISBN: 0132479257
- *Data Structures and Software Development in an Object Oriented Domain Eiffel Edition* (With CD-ROM) by [Jean-Paul Tremblay](#), [Grant A. Cheston](#), Prentice Hall; ISBN: 0137879466
- *Windows Programming Made Easy*, Glenn Maughan, Raphael Simon, Prentice Hall, ISBN 0-13028977-9) Written by Glenn Maughan and Raphael Simon, this book covers the basics of Windows Programming in Eiffel.

- *Objects Unencapsulated: Java, Eiffel, and C++??, I/e.* Unencapsulated examines and compares the strengths and weaknesses of Java, Eiffel, and C++.

## WHAT EDUCATORS SAY ABOUT EIFFEL

Since 1989, hundreds of universities around the world have been using Eiffel to give their students the best. Here is some of what they have to say.

### **James Heliotis, Rochester Institute of Technology (USA), introductory programming course uses Eiffel since 1994:**

*All of us involved in teaching the first-year courses agree that Eiffel has far exceeded our expectations... Eiffel makes it easier to take a complex software system and "open it up" slowly, piece by piece... Thanks to existing libraries full of all kinds of useful data structure, we no longer need to instruct students how to build something before they may use it. (In Journal of Object-Oriented Programming, May 1996.)*

*Beyond the language itself, ISE's offering is an industrial-strength, well-integrated software development environment that supports, and enforces, the use of object-oriented methods throughout.*

### **Dan Trotter, McMaster University (Canada):**

*Our Department appreciates being able to offer our students quality programming environments such as Eiffel. We believe that educationally priced commercial software provides a win-win-win situation. The students win because they are more marketable, the University wins because they can offer quality environments at a reasonable cost, and industry wins because more students are familiar with their production software.*

### **David Riley, University of Wisconsin La Crosse (USA), first-year programming course uses Eiffel since early nineties:**

*We are currently using Eiffel in our very earliest programming courses. The clean syntax, small collection of primitives, static type checking, and support for design by contract make Eiffel an outstanding choice for instruction in object technology in general and object-oriented programming in particular.*

### **Rob Rist, University of Technology (Australia), first-year programming course uses Eiffel since 1989:**

*Eiffel is the only language I have ever used that makes me think harder than I want, and it has changed the way I think about system design. (From: Object-Oriented Programming with Eiffel, Prentice Hall, 1995.)*

*Eiffel is the best language to teach the principles of object-oriented programming. The*

*language itself is so small and elegant that language issues are seldom a problem. This means that the real issue -- design -- can be brought to the front and taught explicitly. The clean and formal separation, at the routine boundary, of behavior from implementation allows a solution to be designed at a high level, and then later implemented in code. Eiffel was created to support reuse, and it achieves what other languages only aim for. I tell my students: "If you repeat code, then your design is wrong". This is a simple rule that is almost always true, and is easily followed by students: it is easy to see repeated code. It is not so easy to fix the design, but that is where skill and expertise come in! Eiffel is so well designed that the very structure of the language supports the design of reusable solutions*

**David Clark, University of Canberra (Australia):**

*Eiffel engenders a culture of quality.*

*Eiffel actively "pushes" you in the right direction. My OO design / implementation subject focuses on Meyer's "external" quality factors (correctness, robustness, extendibility, reusability). The recurring question is "what can we do internally to achieve the external quality factors?" Always, what we want to do is supported naturally by the language.*

**Hector Garcia-Molina, University of Murcia (Spain):**

*Eiffel is the language most adequate to be used as the first object-oriented programming language, because it is a pure object-oriented language, strongly typed, simple and readable. Moreover, it combines the object-oriented concepts with characteristics which are useful for the development of large software projects, such as the assertions and exceptions mechanisms. Since 1991, we have been teaching object-oriented programming using Eiffel."*

**Dr. James C. McKim, Renselear at Hartford (USA)**

*"Eiffel works extremely well as a language through which to learn the O-O paradigm."*

## TYPICAL COURSES

Eiffel is suited to teach programming at large. Among others, it has been used for the following courses:

- Data Structures and Algorithms
- Programming Methods
- Software Engineering

- Programming Languages
- Software Analysis
- Specification and Design
- Databases
- Object-Oriented Programming
- Formal Specification and Verification
- Objects for the Business World

## INDUSTRY PARTNERS

Companies worldwide have been using ISE Eiffel for years to develop some of the most challenging industry projects, drawing on the full power of modern object technology. Here is the partial list of our industry customers:

- **CALFP Bank (Credit Agricole Lazard Financial Products Bank)**

London-New York-Paris-Singapore-Tokyo  
Future trading, pricing, bank operations.

- **XONTECH**

Huntsville, Alabama  
Battlefield Simulation.

- **The Chicago Board of Trade**

Chicago, Illinois  
Floor Pricing System.

- **EMC Corp.**

Hopkinton, Massachusetts  
Disk drive design and simulation.

- **Lockheed Martin / US EPA**

Research Triangle Park, North Carolina  
Scientific applications.

- **AMP**

Sydney, Australia  
Financial applications

- **National Board of Occupational Safety and Health**

Solna, Sweden  
Support and analysis system for safety and health inspections.

- **AXA Rosenberg**

San Francisco, London, Tokyo  
Financial applications.

## UNIVERSITY PARTNERS

Eiffel is not just used by industry to develop tough enterprise applications, but also by universities to prepare their students for the job market of tomorrow and beyond. Universities the world over rely on Eiffel for software and systems courses, starting with introductory programming and continuing throughout the curriculum.

Some of our University partners are:

- Rochester Institute of Technology (USA)
- Monash University (Australia)
- University of Saskatchewan (Canada)
- York University (Canada)
- ETH, Zurich (Switzerland)
- George Mason University (USA)
- Northampton University (United Kingdom)
- University of Turku (Finland)
- Dublin Institute of Technology (Ireland)
- ENST Paris and ENST Bretagne (France)
- Northern Arizona University (USA)
- Westminster University (United Kingdom)
- Rensselaer at Hartford (USA)
- Darmstadt University (Germany)
- York University (Canada)
- ENSEEIHT (France)

## WE OFFER INTERNSHIPS

ISE offers students of the universities, which are part of the Eiffel University Partnership program, the possibility of applying for an internship position at ISE. ISE's internship positions are 12 to 18 months. During their stay at ISE, students have the possibility to enhance their knowledge in all aspects of object technology under the leadership of experienced Eiffel programmers. The areas of development and research include: compiler development, networking, concurrency, modeling and

design, .NET, development of various libraries, building reusable components, metrics and testing techniques, and many, many more.

Internships take place in Santa Barbara, California. They start with a one week intensive hands-on practical training. All interns having gone through the program have entered their professional career with a significant advantage in the job market.

## LEARNING OBJECT TECHNOLOGY

Every year during the TOOLS USA conference, (Technology of Object-Oriented Languages and Systems) one full day is dedicated to a Symposium on Teaching Object Technology.

The purpose of the symposium is to explore innovative ways of sharing the wealth of resources we have each individually created, discovered and collected to aid teaching and learning in object technology.

In order to share the resources of this symposium, Brighton University (UK) is maintaining a Web site (<http://www.it.brighton.ac.uk/staff/jd29/stot/>) open to anyone interested in helping students achieve more.

## HOW TO BECOME AN ISE EIFFEL UNIVERSITY PARTNER

Becoming an ISE Eiffel University Partner is very easy. Simply fill out the enclosed ISE Eiffel University Partner Application Form, and send a purchase order, accompanied by payment (check, Visa, MasterCard, American Express) and fax or mail it to ISE. For inquiries, please call (805) 685 - 1006, fax (805) 685 - 6869, email [info@eiffel.com](mailto:info@eiffel.com) and ask for the University Department. Someone will be happy to assist you.

## UNIVERSITY PARTNERSHIP PROGRAM PRICE LIST

### **Enterprise Package**

The Enterprise Package for Windows and Linux includes: EiffelStudio, EiffelBase, EiffelLex, EiffelParse, EiffelWeb, WEL, EiffelNet, EiffelStore, EiffelCase, EiffelCOM, EiffelBuild, EiffelVision, EiffelVision 2, Legacy ++, EiffelThreads.

For Unix, the Enterprise Package includes: EiffelStudio, EiffelBase, MEL, EiffelLex, EiffelParse, EiffelVision, EiffelVision 2, EiffelBuild, EiffelNet, EiffelStore, EiffelCase, EiffelWeb, Legacy ++ and EiffelThreads.

	Windows, Linux and Unix
1 user license	US\$ 795.00
10 user license	US\$ 2,495.00
25 user license	US\$ 4,995.00
50 user license	US\$ 8,495.00
100 user license	US\$ 12,495.00
200 user license	US\$ 15,995.00
350 user license	US\$ 20,995.00
500 user license	US\$ 24,995.00
Unlimited site license	US\$ 34,995.00

### **Maintenance, Support and Upgrades**

- Each software purchase includes free Standard Service support for 30 days. Extended Standard Service Agreements are available on a yearly basis.

Extended Standard Service Agreements gives you:

- Continued access to ISE's customer support team to provide you with assistance on problems encountered in the use of the software by electronic mail, fax, or telephone.
- Free access to regularly scheduled bug fixes.
- Automatic receipt of publicly released upgrades.

	Windows, Linux and Unix
1 user license one year Standard Service Agreement	US\$ 595.00
10 user license one year Standard Service Agreement	US\$ 1,495.00
25 user license one year Standard Service Agreement	US\$ 2,495.00
50 user license one year Standard Service Agreement	US\$ 4,295.00
100 user license one year Standard Service Agreement	US\$ 6,495.00
200 user license one year Standard Service Agreement	US\$ 8,495.00
350 user license one year Standard Service Agreement	US\$ 11,295.00
500 user license one year Standard Service Agreement	US\$ 14,495.00
Unlimited site one year Standard Service Agreement	US\$ 17,995.00

## UNIVERSITY PARTNERSHIP PROGRAM APPLICATION

United States, 2002

This application is only applicable towards the purchase of ISE Eiffel components by computer science departments (or equivalent) of degree-granting educational institutions, strictly for the purpose of teaching in computer science, on designated hardware, not for any commercial applications.

Execution of this contract will take place upon receipt by Interactive Software Engineering Inc. (hereafter referred to as "ISE") of two copies of this agreement signed by

*Signature:*

*Department:*

(hereafter referred to as "Department") and accompanied by purchase order and payment.

The Department agrees that the ISE Eiffel systems are to be run solely on the computer systems designated on the attached University Partnership Program Order Form, and only for purposes of teaching in Computer Science. This right to use the ISE Eiffel system is granted solely to the Department and may not be extended to other parties (including other academic units of the Department's University or College) without written agreement of ISE. The Department agrees not to make any copies of the ISE Eiffel systems and documentation or part thereof (other than copies made for installation on the computer systems for which licenses were granted, or copies performed as part of normal backup procedures), by any means, and not to disseminate any non-public information about ISE Eiffel and its implementation to other parties without written agreement of ISE. The Department agrees to take all reasonable steps to protect the ISE Eiffel Systems and documentation against unauthorized use or copy, and to instruct to this effect the Department's faculty, students, personnel, and any others that may have access to the systems.

The Department agrees to provide ISE with a report describing the Department's experience with the systems and containing an overall evaluation of the systems, and descriptions of the systems' use within the Department. The report shall be sent to ISE within one year after the execution of this agreement.

The following Attachment to this Agreement, is an integral part of this Agreement and is incorporated herein by this reference: \* Attachment A: University Partnership Program Order Form is applicable and is attached as an integral part of this Agreement.

This writing constitutes a full and complete expression of the Agreement of the parties and shall not be modified except by writing signed by both parties.

Both parties hereby accept this agreement.

### For Department:

*Signature:*

*Name:*

*Title:*

*Date:*

### For ISE:

*Signature:*

*Name:*

*Title:*

*Date:*

## UNIVERSITY PARTNERSHIP PROGRAM ORDER FORM

Qty.	Description	Unit Price	Total Price
<b>Shipping*</b>			
<b>California shipments add 7.75%</b>			
<b>Total:</b>			

**Shipping:**

USA	UPS Ground Service	\$10.00
	UPS 2nd Day Air Service	\$15.00
Canada	UPS Ground Service	\$20.00
	UPS Express	\$40.00
International	UPS Express	\$60.00

All software is provided on CD-ROM

### Contact Details

Name:

Title:

Address:

Phone:

Fax:

Email:

### Method of Payment

American Express

Credit Card Number:

VISA

Expiry Date (Month/Year):

Master Card

Authorized Signature:

Check, made out to ISE enclosed in the amount of: