



Information Technology Background Evaluation

Print Name: _____ On-Line Application Reference Number: _____

We would appreciate learning the details of your computer experience to help us determine if you have the necessary prerequisite knowledge to undertake the MS in Information Technology at Rensselaer. Please return the form with your other mailed application materials or return via e-mail to Ms. Lessa Shear at shearl@rpi.edu.

Place an "X" in front of your primary interest area in Information Technology (choose one):

- | | | |
|---|--|---|
| <input type="checkbox"/> Data Science and Analytics | <input type="checkbox"/> Software Design and Engineering | <input type="checkbox"/> Information Security |
| <input type="checkbox"/> Web Science | <input type="checkbox"/> Database Systems Design | <input type="checkbox"/> Information Dominance |
| <input type="checkbox"/> Networking | <input type="checkbox"/> Mgmt Information Systems | <input type="checkbox"/> Info Systems Engineering |
| | <input type="checkbox"/> Human Computer Interaction | <input type="checkbox"/> Financial Engineering |

1. How many years of full-time work experience have you had?

2. If currently employed full time, please indicate your primary area(s) of responsibility within your company or organization:

3. Please indicate your level of experience & expertise in the following programming languages (check as many as apply):

	Low	Medium	High		Low	Medium	High
Assembler	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Visual Basic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BASIC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Eiffel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COBOL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Lisp	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
FORTRAN	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Others: (please specify)			
C	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pascal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C++	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Java	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. Please indicate which among the following topics you have learned through your prior study or as part of your job:

MATHEMATICS:

- set theory
- Boolean algebra
- combinatorics
- probability
- statistics
- logic & induction

DATA STRUCTURES:

- stacks & queues
- linked lists
- trees
- graphs
- hash tables
- sorting
- arrays/matrices
- data structures

ALGORITHMS:

- divide-and-conquer
- algorithm design
- Big-O notation
- greedy algorithms
- backtracking
- analysis for worst-case algorithm efficiency
- analysis for expected-case algorithm efficiency

OO CONCEPTS:

- classes
- objects
- encapsulation
- information hiding
- inheritance
- polymorphism

5. Below, we have described three Rensselaer courses. Please insert the name(s) and other requested information about the courses you have taken that most closely match the three Rensselaer courses.

Rensselaer Courses	Your course name and number	Date of completion of your course	Name of college where the course was taken	Grade you received
<p>1. Computer Science I (CSCI-1100)</p> <p>An introduction to computer programming algorithm design and analysis. Additional topics include basic computer organization; internal representation of scalar and array data; use of top-down design and subprograms to tackle complex problems; abstract data types. Enrichment material as time allows. Interdisciplinary case studies, numerical and nonnumerical applications.</p>				
<p>2. Data Structures (CSCI-1200)</p> <p>Programming concepts: functions, parameter passing, pointers, arrays, strings, structs, classes, templates. Mathematical tools: sets, functions, and relations, order notation, complexity of algorithms, proof by induction. Data structures and their representations: data abstraction and internal representation, sequences, trees, binary search trees, associative structures. Algorithms: searching and sorting, generic algorithms, iterative and recursive algorithms. Methods of testing correctness and measuring performance.</p>				
<p>3. Introduction to Algorithms (CSCI-2300)</p> <p>Data structures and algorithms, and the mathematical techniques necessary to design and analyze them. Basic data structures: lists, associative structures, trees. Mathematical techniques for designing algorithms and analyzing worst-case and expected-case algorithm efficiency. Advanced data structures: balanced trees, tries, heaps, priority queues, graphs. Searching, sorting. Algorithm design techniques: dynamic programming, greedy algorithms, divide-and-conquer, backtracking. Example graph, string, geometric, and numeric algorithms.</p>				

Please return this form via mail or email to the main RPI Admissions Office:

Admissions
Rensselaer Polytechnic Institute
110 8th Street
Troy, NY 12180-3590
gradadmissions@rpi.edu