

## COMPUTER SCIENCE: TECHNICAL EMPHASIS MAJORS (Suggested Associate in Science Degree Curriculum)

This worksheet is designed to help students select courses which are likely to apply to a major in **COMPUTER SCIENCE with a technical emphasis**. These suggested courses satisfy requirements in the Associate in Science Degree program at Prairie State College and provide the basis for transferring to a four-year institution. This program meets the guidelines of the **IAI (Illinois Articulation Initiative) Baccalaureate Major Panel for Computer Science: Technical Emphasis**. Students should obtain a copy of the Prairie State College **Associate in Science Degree Worksheet** and should visit the IAI website at [www.iTransfer.org](http://www.iTransfer.org) for more information.

The “Technical Emphasis” focuses on algorithms, theoretical foundations of computer science, and development of software. **A strong foundation in mathematics and science is needed for this emphasis**. Graduates of this emphasis will be prepared to work for a variety of companies including those that have a software, engineering, scientific or mathematical focus. Baccalaureate schools may have multiple computer degree programs, often located in different departments, which build on the recommendations for the Computer Science: Technical Emphasis. This major is typically found in a department named Computer Science or Mathematics and Computer Science or within a College of Engineering. Some schools may not require all of the courses listed below. Consult the baccalaureate schools you are considering and speak with a computer science advisor to select the appropriate courses for transfer.

### CAREER INFORMATION

The study of computers, mathematics and engineering focuses on the development of problem-solving skills and tools and the ability to analyze a situation and effectively use these tools. Career opportunities exist for actuaries, business or financial analysts, computer systems analysts, mathematicians, operations research analysts, statisticians, and computer/math teachers at the junior high and secondary level. Students may choose to go on and do graduate-level research in advanced mathematics and computer science theory and applications.

## SUGGESTED CURRICULUM

*Each senior institution has its own transfer policies. Therefore, we cannot guarantee the accuracy of this information in regard to every individual school. Consult the school of your choice and/or the Prairie State College Counseling and Academic Advising Center to discuss the transferability of courses.*

### TRANSFERABLE GENERAL EDUCATION CORE (37-38 credits)

#### Area A: Communications ( 9 credits)

ENG 101 (3)	[C1 900]*	Composition I (Prereq. ENG 099, C or better, or qualifying score on English Placement Test)
ENG 102 (3)	[C1 901R]*	Composition II (Prereq ENG 101 with C or better)
COMM 101 (3)	[C2 900]	Principles of Communication (Prereq. Placement in ENG 099 or above)

*\*Must have a C or better in ENG 101 & 102 to receive credit for the degree.*

#### Area B: Humanities and Fine Arts ( 9 credits)

Select three courses with at least one course selected from the humanities area and one course from the fine arts area. Refer to the Associate in Science Degree Worksheet, Area B, for a listing of approved course choices.

Humanities Course (3)	Select any Area B Humanities Course (Prereq. Placement in ENG 099 or above)
Fine Arts Course (3)	Select any Area B Fine Arts Course (Prereq. Placement in ENG 099 or above)
Humanities/Fine Arts Course (3)	Select any Area B Course (Prereq. Placement in ENG 099 or above)

#### Area C: Mathematics (3 credits)

MATH 210 (3)	[M1 905]	Discrete Mathematics (Prereq. MATH 151 with C or better)
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#### Area D: Physical and Life Sciences (7-8 credits)

Select one life science course and one physical science course. One course must have a lab component. Refer to the Associate in Science Degree Worksheet, Area D, for a listing of approved course choices.

PHYSI 210 (4)	[P2 900L]	University Physics I (Prereq. MATH 171 and HS Physics)
Life Science course (3-4)	Select any Area D Life Science Course (Prereq. Placement in ENG 099 or above)	

### Area E: Social and Behavioral Sciences ( 9 credits)

Select three courses in at least two different disciplines. Refer to the Associate in Science Worksheet, Area E, for a listing of approved course choices.

ECON 201 (3) [S3 901]	Macroeconomic Principles (Prereq. Placement in ENG 099 or above)
ECON 202 (3) [S3 902]	Microeconomic Principles (Prereq. ECON 201)
Social/Behavioral Sci Course (3)	Select any Area E course, other than ECON (Prereq. Placement in ENG 099 or above)

### COMPUTER SCIENCE/TECHNICAL COURSE RECOMMENDATIONS ( 22-23 credits)

(Check with the school to which you plan to transfer to verify transferability of these courses for this major)

Select 22-23 credits from the “suggested” course recommendations listed below:

Select one programming language sequence from the list below:

ITPRG 144 (3)	Intro to C++ Programming (Prereq. ITPRG 103 or IT 140 and Placement in ENG 099 or above) <b>AND</b>
ITPRG 244 (3) [CS 912]	Advanced C++ Programming (Prereq. ITPRG 144)
<b>OR</b>	
ITPRG 147 (3) [CS 911]	Intro to Java Programming (Prereq. ITPRG 103 or IT 140 and Placement in ENG 099 or above) <b>AND</b>
ITPRG 247 (3)	Advanced Java Programming (Prereq. ITPRG 147)

MATH 171 (5) [MI 900-1]	Calculus with Analytic Geometry (Prereq. MATH 165 with C or better)
MATH 172 (5) [MTH 902]	Calculus with Analytic Geometry II (Prereq. MATH 171)
MATH 173 (5) [MTH 903]	Calculus with Analytic Geometry III (Prereq. MATH 172)
PHYSI 220 (4) [PHY 912]	University Physics II (Prereq. MATH 172)
PHYSI 230 (4) [PHY 914]	University Physics III (Prereq. MATH 173)

**PLEASE NOTE:**

1. Students taking calculus should complete the entire sequence of MATH 171, 172, & 173 in the same school prior to transfer, since topics are covered in different order by different schools. MATH 172 & 173 can be used in the elective category.
2. Students should complete the entire sequence of PHYSI 210, 220, & 230 in the same school prior to transfer, since topics are covered in different order by different schools. PHYSI 220 & 230 can be used in the elective category.

**Suggested courses which satisfy the PSC AS degree requirements may include electives such as:**

Any additional general education courses selected from Areas B, C, D, or E

Any entry level majors course in a transferable major area

Any foreign language courses\*

Up to four credits of physical education courses

Additional courses recommended as transferable by the school to which you plan to transfer.

\***Foreign Language Requirement:** Some universities have a foreign language requirement. Generally, four years of a single foreign language in high school, or four semesters in college, will fulfill this requirement. It is recommended that students complete the entire sequence at one institution.

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## 62 CREDITS REQUIRED FOR AN ASSOCIATE IN SCIENCE DEGREE

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### FOR FURTHER INFORMATION CONTACT:

Counseling and Academic Advising Center Room 1190 (708) 709-3506

### INFORMATION TECHNOLOGY DEPARTMENT FACULTY:

Jackie Dennis	Room 2184	(708) 709-3649	<a href="mailto:jdennis@prairiestate.edu">jdennis@prairiestate.edu</a>
Sally Haywood	Room 2212	(708) 709-3653	<a href="mailto:skhaywood@prairiestate.edu">skhaywood@prairiestate.edu</a>

### FOR TRANSFER INFORMATION:

u.select, formerly known as Course Applicability System (CAS): [www.transfer.org/uselect](http://www.transfer.org/uselect)

Illinois Articulation Initiative (IAI): [www.iTransfer.org](http://www.iTransfer.org)

Links to Articulation Tables for Illinois Colleges: <http://www.itransfer.org/IAI/Other/Articulationlinks.taf>

Visit the web sites of colleges and universities to which you plan to transfer.

### FOR CAREER INFORMATION:

Occupational Outlook Handbook, U.S. Department of Labor: <http://www.bls.gov/oco/home.htm>

Association for Computing Machinery: <http://www.acm.org>

Association of Information Technology Professionals: <http://www.aitp.org>

Institute for Certification of Computing Professionals: <http://www.iccp.org>