



MAJOR CHOSEN: COMPUTER SCIENCE

I. A BRIEF DESCRIPTION OF THE MAJOR

Our main focus is the preparation of the student for the pursuit of a graduate degree in computer science or computer engineering. The primary objectives for computer science majors are:

1. A general understanding of computer technology and function
2. Design and use of software
3. Use of the computer for problem solving
4. Tendencies and limitations of computer technology

II. COURSE HIGHLIGHTS

Here are some of the courses you will especially enjoy:

Computer Science I & II These first two courses introduce you to the wonders and challenges of computer programming. What are these man-made machines capable of? How does one talk to a computer in order to tell it how to solve a particular problem? How do we build software systems that will make it possible for non-programmers to be able to solve their problems using a computer? How do you debug programs that don't work properly? These courses introduce you to the programming methodology known as Object Oriented Programming: solving problems by creating objects in the computer that model the objects in the real world. These courses include a lab that meets each week to help you gain a better understanding of the concepts taught in the classroom.

Microprocessor Architecture At the very heart of the computer revolution is a little piece of silicon known as a microprocessor. In order to have a good grasp of computer science, one must certainly understand how a microprocessor works. One of the best ways to understand a complex system is to figure out how to simulate one on the computer. The course consists primarily of designing and implementing an interactive computer program that simulates the functionality of a commercial microprocessor at the instruction set level. We also discuss microprocessor design tradeoffs that affect the performance of a microprocessor.

Language Translation Systems You will learn how the computer translates programs from human readable languages into machine language. This provides you with an in-depth knowledge of computers that will help you be a better programmer as you understand what the compiler does to the programs you give it. You will use various software tools to assist you to implement your own compiler.



Introduction to Operating Systems Operating systems are at the core of everyone’s use of computers today. As a computer science student, you need to understand the strengths and limitations of these systems. This course teaches you how an operating system works by actually studying the subsystems that compose modern operating systems.

III. A TYPICAL YEARLY COURSE SEQUENCE

This is a suggested program of study for you. Other refinements to your program can be made when you consult your faculty advisor at the time of your enrollment.

You will notice that some courses are listed as electives. These electives give you the opportunity to tailor your program by selecting courses you would like to take for your own personal enjoyment.

Freshman

Orientation	1	Orientation	1
Transcendental Functions	3	Calculus I	3
Computer Science I	3	Computer Science II	3
Old Testament Messages	1	New Testament Messages	1
General Psychology	3	Fundamentals of Speech	3
English Composition.....	3	English Composition.....	3
Social Studies Elective.....	<u>3</u>	Psychology Elective	<u>3</u>
Total	17	Total	17

Sophomore

Data Structures	3	Fundamentals of Technical Writing	3
Computer Systems	3	Digital Electronics	3
English Literature.....	3	Elementary Linear Algebra	3
Social Studies Elective.....	3	Unix Programming	3
Sophomore Bible Elective.....	1	Sophomore Bible Elective	1
Minor or Electives.....	<u>1</u>	Minor or Electives	<u>3</u>
Total	14	Total	16

Junior

Elementary Statistics	3	Discrete Math	3
Intro: Database Management Systems	3	Introduction to Operating Systems	3
Microprocessor Architecture	3	History of Civilization	3
History of Civilization	3	Bible Doctrines	3
Bible Doctrines	3	Computer Science Elective	3
Minor or Electives	<u>1</u>	Minor or Electives	<u>1</u>
Total	16	Total	16

Senior

Programming Language Design	3	Language Translation Systems	3
Computer Science Seminar	1	Christian Family Forum	1
Computer Science Elective	3	Oral Communication for the Professions	3
Upper-Level Bible Elective.....	2	Upper-Level Bible Elective.....	2
Minor or Electives	<u>7</u>	Minor or Electives	<u>7</u>
Total	16	Total	16



IV. FACILITIES, EQUIPMENT, AND OPPORTUNITIES

At BJU you not only will receive a good theoretical foundation in computer science, but you also will have available for your use sophisticated and diverse software and hardware. This will complement your classroom instruction with extensive "hands on" experience.

Computer Equipment

Computer Network We have several academic computer labs on campus. They consist of various types of PC's and are all interconnected via a local area network that is also connected to the Internet using appropriate filtering software. As a computer science major you will have exclusive access to one of these labs. We have a very low student to PC ratio that gives you access to a computer when you need it. If you come with your own computer, you will also have the option of connecting to this network from your residence hall room.

Hardware and Software The lab contains about 50 workstations, two laser printers, and an image scanner. Most of these workstations dual-boot Windows and Linux. Under Windows we have excellent software development tools as well as Microsoft Office Professional. Under Linux we of course have all of the tools one expects to find in this open source environment. For the most up-to-date information about our computing facilities visit the Computer Science Department home page at <http://www.bju.edu/cps>.

Additional opportunities are available to our computer science students while they are still at school. Some secure jobs programming for the University Computer Services (part-time during the school year or full-time during the summer). Others work in one of the computer labs as computer lab assistants. We also have an annual programming contest.

Chapel is a central feature of Bob Jones University. This 35-minute service is held every morning, Monday through Thursday. These services are a source of great inspiration to students. Four days a week the Chapel message is brought by the President or by selected speakers. Each Friday the Chapel period is devoted to the meetings of various literary societies.

Davis Field House, with over 87,000 square feet and seating for 3,000 people, contains 4 full-sized courts; auxiliary courts; indoor and outdoor tracks; swimming pool; café; and a fitness center with fully-equipped exercise room, aerobic room, sauna, and whirlpool.

The Mack Library, with 90,000 square feet of floor space and seating for over 1,300 students, gives you access to 294,000 volumes, 1,100 current periodical subscriptions, and more than 17,000 music, speech, and language recordings. Mack Library offers access to over 65 electronic databases on the library web site. An interlibrary loan program is available through OCLC, a national database, for books not held in our library. Other prominent features include the Jerusalem Chamber, a replica of the room in Westminster Abbey in London in which work was done on the 1611 King James Bible, and the University Archives Room which displays materials about the Founder and history of the University.



If you are planning to live on campus, you will be glad to know that all of our residence halls are air-conditioned, have wall-to-wall carpeting, and have a phone in each room. You will be able to make long-distance calls directly from your room and have them automatically placed on your school bill. Computer network connectivity is available in all residence halls, as well.

All of our classrooms are air-conditioned, and there are awnings over the sidewalks to keep you dry when it is raining. The Dining Common serves 8,500 delicious meals a day, and the Snack Shop and Bookstore in the Student Center carry just about anything you'll need.

You will find the finest Christian young people in the country are your fellow students, and without trying too hard, you may end up making a life-long friend!

V. ABOUT THE FACULTY

The computer science faculty is well trained and qualified to teach you. All of the permanent computer science faculty members hold advanced degrees. They attend special workshops and seminars in order to stay up-to-date in the field of computer science. All of them have on-the-job experience as programmers, analysts, consultants, and project managers.

VI. CAREER OPPORTUNITIES AND PLACEMENT

Career opportunities in the computer science field are excellent and are expected to be so for some time to come. Our graduates are pursuing careers in:

Industry

Operations research
Programming
Database design
Insurance
Statistics
Analysis

IT Management
Compiler design
Network management
Cryptography
Web Application development

Government

Some of the above fields are available plus highly sensitive positions with the CIA, NSA, and many other government agencies.

Education

Teaching positions are available in high schools, colleges, technical colleges, industry, and government.



VII. BJU: AN AFFORDABLE EDUCATION

Enclosed is an expense sheet detailing the cost of attending Bob Jones University. When you compare our charges to those of other private colleges, we think you will be pleasantly surprised. We believe we offer a student more value for his dollar than anyone else in America. And to help you see how affordable "the Opportunity Place" can be for you, we have enclosed a financial aid brochure that you can use to evaluate your own situation. Your Admissions Counselor or the Director of Student Financial Aid would be happy to discuss this with you if you have any questions.

HOW TO TAKE THE NEXT STEP . . .

If you can see yourself in the career described in the profile, then a great opportunity awaits you at Bob Jones University. It is the opportunity for the premier Christian college experience in all the world. It is the opportunity for learning, for fun, and for developing new friendships. It is the opportunity to prepare for a lifetime of service for the Lord . . .

The Opportunity Place . . . God's Special Place for You.

For more information about this exciting major, visit the Computer Science home page at <http://www.bju.edu/cps>