The minor in STS is open to all undergraduate students at JMU. Courses taken to complete the STS minor can also be used to satisfy the student’s major, as well as General Education requirements. The STS minor requires 18 credit hours with at least one course each from the history, sociology and ISAT courses listed.

**Required Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISAT 131. Technology, Science, and Society</td>
<td>3</td>
</tr>
<tr>
<td>HIST 327. Technology in America</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 315. Science, Technology, and Society</td>
<td>3</td>
</tr>
</tbody>
</table>

**Elective courses**

Choose five from at least four different programs/majors

- ANTH/SOCI 313. Processes of Social and Cultural Change
- ANTH 340. The Invention of Race
- ANTH 360. Medical Anthropology
- ANTH 373. Anthropological Perspectives on Environment and Development
- ANTH/HIST 492. American Material Culture
- ARTH 303. History of Design
- ARTH 474. The New Media and Contemporary Art
- ARTH 476. Modern Architecture
- GEOG 322. Agricultural Systems
- GEOG 325. Environmental Ethics
- GEOG 344. Economic Geography and Development Issues
- HIST 305. History of Science and Christianity
- HIST 326. The Automobile in 20th Century America
- HIST 327. Technology in America
- HIST 405. Travel and Exploration
- HIST 427. U.S. Environmental History
- HIST 443. Modern American Technology and Culture
- HIST 481. Early Modern Europe: New Worlds of Exploration & Science
- ISAT 231. Political Economy of Technology and Science
- ISAT 311. Role of Energy in Modern Society
- ISAT 421. Environmental Policy and Regulation
- ISAT 456. Ethical, Legal and Social Implications of Biotechnology
- ISAT 471. Transportation: Energy, Environment and Society
- ISAT 477. Complex Systems and How They Fail
- PHIL 300. Knowledge and Belief
- PHIL 395. Philosophy and Scientific Inquiry
- SOCI 311. Sociology of the Environment
- SOCI 316. Space, Time and the Human Social Environment
- SOCI 366. Sociology of Knowledge
- SOCI 375. Medical Sociology
- WRTC 350. Science and Technology in Literature

Special topics courses not listed can be applied to the minor with prior approval of the program coordinator.

**Telecommunications**

**Dr. Mohamed Aboutabl, Adviser**

Phone: (540) 568-7589  
Email: aboutams@jmu.edu  
Website: http://www.cs.jmu.edu/telecomminor.html

The cross disciplinary minor in telecommunications is designed to augment the student’s major program with a package of courses that will prepare the graduate to obtain a position as a telecommunication/network professional and fill a societal need in one of the fastest growing areas of technology. The program is developed as a minor principally for three major programs: computer science, integrated science and technology (for students not in the telecommunications concentration), and computer information systems. However, the program is open to any undergraduate with an interest in telecommunications and some computer background.

The telecommunications minor will instill knowledge of:

- Telecommunication terminologies, standards, policies and procedures.
- Basics of data transmission, digital signal processes and signaling hierarchies.
- Architectures, communications protocols and components of LANs, WANs and internetworks.
- The TCP/IP and ATM protocol suites.
- Switching, routing and traffic management in inter-networked environments.
- Voice, video and data transmission over IP and ATM.
- Application development for the Internet.
- Distributed object systems programming and management.

Students are encouraged to check prerequisites. At most four courses can be used to satisfy both the telecommunications minor and a student’s major requirements.

http://www.jmu.edu/catalog/13
Choose five of the following: 15
CS/ISAT 460. TCP/IP Networks 3
ISAT/CS 461. Internetworking 3
ISAT/CS 464. Telecom in Public Interest 3
Choose one of the following: 3-4
CS 139. Algorithm Development
CIS 221. Principles of Programming
ISAT 252. Programming and Problem Solving
Choose one of the following: 3
CS 458. Cyber Defense
CS/ISAT 462. Network Applications Development
CS/ISAT 463. Network Analysis and Design
ISAT 465. Wireless Networking, Security and Forensics

Urban and Regional Studies
Dr. Henry Way, Coordinator
Phone: (540) 568-8186 Email: wayha@jmu.edu
Website: http://www.jmu.edu/cisat/minors/urs.html
The minor in urban and regional studies prepares students for careers or graduate training in government. While satisfying the B.A. or B.S. requirements of their chosen major, students may complement that major with a 24 credit hour minor in urban and regional studies drawn from the following courses.

Required Courses Credit Hours
SOC 265. Sociology of the Community 3
POS 360. Urban Politics 3
GEOG 376. Urban Geography 3
ECON 475. Regional Economics 3
Choose one of the following: 12
ECON 326. Public Finance
ECON 340. Economics of Natural Resources
FIN 210. Principles of Real Estate
GEOG 315. Field Studies
GEOL 310A-D/GEOG 310. Environmental Impact (2-3 credits)
GEOL 340. Soil and Land Use
POSC 302. State and Local Government
POSC 495. Internship in Political Science (4 credits)
SOCI 352. Birth, Death, Sex: Exploring Demography
SOCI 381. Bureaucracy and Society

World Literature
Dr. Ramenga Mtaali Osotsi, Coordinator
Phone: (540) 568-6560 Email: osotsirm@jmu.edu
The undergraduate minor in world literature provides students with a chance to study literature from the following areas: Africa, Australasia, Latin America, Middle East, Central Asia, East Asia, South Asia, and a special interest area (Native America, African America, Caribbean, and sections of Europe traditionally not covered in an average student’s classroom experience). By offering a broad yet substantial introduction to literatures produced beyond their traditional Western experience, the minor provides students with a bridge to new cultures and languages. Through a careful examination of literary traditions produced by others, students will be encouraged to develop a clear understanding of the relationship between culture and literature as well as the capacity to think outside the parameters of their own cultural background. Courses that contribute to this minor address both the cultural contexts from which given works emerge and to which they respond, as well as the actual formal literary qualities of the works. By exploring various literary traditions, students will better understand how literature both reflects and interrogates culture. Students interested in the shape of tomorrow’s world will benefit from this exposure to a global perspective on human cultures. This is also good foundation for students aiming to study, especially comparative literature, at the graduate level.

The program is sponsored jointly by the Department of English and the Department of Foreign Languages, Literatures and Cultures. World literature courses offered by the English department study different non-English language-literatures. No prior foreign language training is assumed or required.

Required Courses Credit Hours
CS/ISAT 464. Telecom in Public Interest 3
ISAT/CS 465. Wireless Networking, Security and Forensics 3

1 Must be in a discipline other than the student’s major.

Women’s and Gender Studies
Dr. Jessica Davidson, Coordinator
Phone: (540) 568-2897 Email: davidspb@jmu.edu
Website: http://www.jmu.edu/womensstudies/
The women’s studies minor is an 18 credit hour cross disciplinary program that explores the scholarship related to gender and equity issues affecting women. This minor includes one required course, WMST 200. The remainder of the program incorporates many academic fields.

Required Course Credit Hours
WMST 200. Introduction to Women’s and Gender Studies 3
Choose five of the following: 15
ANTH 370. Topics in the Anthropology of Gender
ENG 327. The Gothic
ENG/WMST 368. Women’s Literature
ENG 389. Feminist Literary Theory
ENG/WMST 370. Queer Literature
ENG/WMST 466. Studies in Women’s Literature

Phone: (540) 568-2697 Email: davidsjb@jmu.edu
Website: http://www.jmu.edu/womenstudies/