The student’s major, as well as General Education requirements. Courses taken to complete the STS minor can also be used to satisfy the role of science and technology in society. This minor offers students a broad, cross disciplinary perspective on Russian culture, history, political institutions, economy and geography. This program deepens the students’ understanding and knowledge of the Russian and non-Russian peoples of the former Soviet Union, and prepares them for careers in teaching, government and international business. Students should take courses in at least three different disciplines from the following list:

**Required Courses**

- ECON 301. Economies in Transition
- GEOG 333. Russian and the Former USSR
- HIST 385. Russia to 1855
- HIST 386. Russia Since 1855
- HIST 475. Modern Russia
- POSC 337. Russia and Post-Soviet Politics
- RUS 266/GHUM 200. Russian Literature in Translation/Great Works
- RUS 300. Russian Conversation and Composition
- RUS 308. Introduction to Russian Civilization
- RUS 315. Russian Phonetics
- RUS 320. Advanced Russian Grammar
- RUS 405. Russian Literature of the 19th Century
- RUS 426. Russian Literature of the 20th Century
- RUS 438. Studies in Russian Literature

Students may include one course from the following list:

- ECON 499. Special Studies in Economics
- FL 490. Special Studies in Foreign Languages (Russian)
- GEOG 490. Senior Project II
- HIST 399. Special Studies in History
- POSC 496. Senior Tutorial in Political Science

With the approval of a program coordinator, six to eight hours of Russian language may be included. Students may also earn credit by studying in a program in Russia or any of the former Soviet states.

Science, Technology and Society

**Dr. Jeffrey Tang, Coordinator**

Phone: (540) 588-2758  E-mail: tangjd@jmu.edu

Science, technology and society (STS) is an internationally recognized field of cross disciplinary study that integrates social scientific and humanistic studies to better understand the natural and human-built world. The minor offers students the opportunity to critically examine science, technology and medicine as expressions of human cultures, past and present. Students learn to scrutinize the ideas, values and materials embedded in the world they inhabit today and to relate them to other times and places. They explore how choices made within various social, economic and political structures influence the development of science, technology and medicine. They also see how the adoption and diffusion of ideas, artifacts and techniques can then influence individuals, society, politics and culture. Courses in this minor draw students together from diverse majors across the campus and encourage open inquiry into the role of science and technology in society.

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 Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISAT 131</td>
<td>Technology, Science, and Society</td>
</tr>
<tr>
<td>SOCI 315</td>
<td>Science, Technology, and Society</td>
</tr>
<tr>
<td>HIST 327</td>
<td>Technology in America</td>
</tr>
</tbody>
</table>

**Elective courses**

Choose five from at least four different programs/majors 15

- ANTH/ARTH/HIST 492. American Material Culture
- ANTH/SCI 313: Processes of Social and Cultural Change
- ANTH/490. The Invention of Race
- ANTH 360. Medical Anthropology
- ANTH 373. Anthropological Perspectives on Environment & Development
- ARTH 305. 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 395. History of Science and Christianity
- HIST 326. The Automobile in 20th Century America
- HIST 327. Technology in America
- HIST 328. History of Science, 1534 – 1859
- HIST 329. History of Science Since 1859
- 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 411. Energy Economics and Policy
- 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.

Substance Abuse Intervention

**Katherine Ott Walter, Adviser**

Phone: 568-8972  E-mail: ottwalmk@jmu.edu

This 22-credit hour cross disciplinary substance abuse intervention minor prepares the student to understand the impacting forces on the abusing individual and help the individual seek aid as appropriate. The SAI minor also prepares the student to assist communities in designing science-based prevention programs. Course work in the SAI minor can lead to certification as a Certified Prevention Professional, Alcohol, Tobacco and Other Drug (CPP-ATOD).

There is a moratorium on the SAI minor for the 2010-11 academic year.

**Required Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>HTH 378</td>
<td>The Use and Effects of Drugs</td>
</tr>
<tr>
<td>HTH 407</td>
<td>Health Education Facilitation/Synthesis</td>
</tr>
<tr>
<td>HTH 451</td>
<td>Strategies for Health Change</td>
</tr>
<tr>
<td>HTH 458</td>
<td>Health Program Planning and Evaluation</td>
</tr>
<tr>
<td>HTH 488</td>
<td>Substance Abuse Prevention Basics</td>
</tr>
<tr>
<td>SOWK 317</td>
<td>Skills for Generalist Social Work</td>
</tr>
</tbody>
</table>

Cross Disciplinary Programs: Minors 115

http://www.jmu.edu/catalog/10
Choose one of the following:

- PSYC 285. Drugs and Behavior
- PSYC 308. Health Psychology

Choose one of the following:

- SOC 327. Juvenile Delinquency
- SOWK 340. Violence in Families
- SOWK 387. Working with Teenagers

Choose one of the following:

- HTH 357. Coping with Stress
- HTH 278. Alcohol Use and Abuse
- HTH 389. Health Education Practicum

1 Prerequisite is PSYC 101 and junior status.

Telecommunications

Dr. Mohamed Aboutabl, Adviser
Phone: (540) 568-7589
E-mail: aboutams@jmu.edu
Web site: http://www.jmu.edu/cisat/minors/telecomm.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.

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS/CS 320. Telecommunications and Information Processing</td>
<td>3</td>
</tr>
<tr>
<td>CS/ISAT 460. TCP/IP Networks</td>
<td>3</td>
</tr>
<tr>
<td>CS 461. Internetworking</td>
<td>3</td>
</tr>
<tr>
<td>Choose one of the following:</td>
<td>3-4</td>
</tr>
<tr>
<td>CS 139. Algorithm Development</td>
<td></td>
</tr>
<tr>
<td>CIS 221. Principles of Programming</td>
<td></td>
</tr>
<tr>
<td>ISAT 252. Programming and Problem Solving</td>
<td></td>
</tr>
<tr>
<td>Choose one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>SMAD 356. Telecommunications Policy and Regulation</td>
<td></td>
</tr>
<tr>
<td>CS/ISAT 464. Telecom in Public Interest</td>
<td></td>
</tr>
<tr>
<td>Choose one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>CS/ISAT 462. Network Applications Development</td>
<td></td>
</tr>
<tr>
<td>CS/ISAT 463. Netowrk Analysis and Design</td>
<td></td>
</tr>
<tr>
<td>ISAT 465. Wireless Networking, Security and Forensics</td>
<td></td>
</tr>
<tr>
<td>CS 458. Cyber Defense</td>
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</tr>
</tbody>
</table>

18-19

Urban and Regional Studies

Dr. Henry Way, Coordinator
Phone: (540) 568-8186
E-mail: wayha@jmu.edu
Web site: 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

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 475. Regional Economics</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 376. Urban Geography</td>
<td>3</td>
</tr>
<tr>
<td>POSC 360. Urban Politics</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 265. Sociology of the Community</td>
<td>3</td>
</tr>
<tr>
<td>Choose from the following:</td>
<td>12</td>
</tr>
<tr>
<td>ECON 326. Public Finance</td>
<td></td>
</tr>
<tr>
<td>ECON 340. Economics of Natural Resources</td>
<td></td>
</tr>
<tr>
<td>FIN 210. Principles of Real Estate</td>
<td></td>
</tr>
<tr>
<td>GEOG 315. Field Studies</td>
<td></td>
</tr>
<tr>
<td>GEOL/GEOG 310A-0. Environmental Impact (2-3 credits)</td>
<td></td>
</tr>
<tr>
<td>GEOL 340. Soil and Land Use</td>
<td></td>
</tr>
<tr>
<td>POSC 302. State and Local Government</td>
<td></td>
</tr>
<tr>
<td>POSC 495. Internship in Political Science (4 credits)</td>
<td></td>
</tr>
<tr>
<td>SOCI 352. Birth, Death, Sex: Exploring Demography</td>
<td></td>
</tr>
<tr>
<td>SOCI 361. Bureaucracy and Society</td>
<td></td>
</tr>
</tbody>
</table>

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

Women’s Studies

Dr. Jessica Davidson, Co-coordinator
Phone: (540) 568-2597
E-mail: davidsjb@jmu.edu

Dr. Mary Thompson, Co-coordinator
Phone: (540) 568-3758
E-mail: thompsmx@jmu.edu
Web site: http://www.jmu.edu/womenstudies/

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

<table>
<thead>
<tr>
<th>Course</th>
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</tr>
</thead>
<tbody>
<tr>
<td>WMST 200. Introduction to Women’s Studies</td>
<td>3</td>
</tr>
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</table>

Choose five of the following: 15

- ANTH 370. Topics in the Anthropology of Gender
- ECON 306. Economics of Women and the Family
- ENG 327. The Gothic
- ENG/WMST 368. Women’s Fiction
- ENG/WMST 370. Queer Literature
- ENG/WMST 466. Studies in Women’s Literature
- ENG 467. Feminist Literary Theory
- HIST 320. Women in United States History
- HIST 321. European Women’s History
- HIST 327. Technology in America
- HIST 466. The Family, 1400-1800
- HIST 448. Gender in Colonial Latin America
- ISAT/WMST 481. Gender Issues in Science
- JUST/WMST 341. Gender and Justice
- PHIL/WMST 350. The Philosophy of Feminism

Dr. Mary Thompson, Co-coordinator
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E-mail: thompsmx@jmu.edu
Web site: http://www.jmu.edu/womenstudies/

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