

Job Description

JOB TITLE: Mathematics Instructor

LAST REVISED: OCTOBER 1997

DEFINITION

Under administrative direction of an educational administrator, to administer, develop and teach curriculum to help students learn various aspects of Mathematics by preparing course objectives consistent with student outcomes described in the official course outlines, providing supplementary materials, selecting appropriate teaching methods and techniques, providing a supportive learning environment, evaluating student progress, and participating in shared governance, and do related work, as required.

JOB CHARACTERISTICS

Incumbent may supervise student and/or other temporary help, as assigned.

EXAMPLES OF FUNCTIONS AND TASKS

Curriculum Development - ESSENTIAL: Review and evaluate curriculum based on student interests; respond to changes in laws affecting area(s) of instruction and/or changes in academic standards and/or requirements; update and modify course descriptions and outlines, as appropriate; formulate and conduct surveys to assess curriculum needs; consult with colleagues and other faculty members as to type(s) of changes needed in curriculum; keep management advised of changing requirements in area(s) of expertise; attend Curriculum Committee meetings; write detailed course curriculum by researching subject matter; define student outcomes and administer appropriate tests to determine students' level of achievement.

Lecture/ Laboratory Preparation - ESSENTIAL: Review and select textbooks appropriate for each course; further evaluate textbooks for cost and readability; complete textbook order forms; read material to stay current in the field; develop supplemental materials for use in classroom and laboratory; develop syllabi for each course; prepare lesson plans for each class meeting, as appropriate; coordinate lectures with laboratory assignments, as applicable. **PERIPHERAL:** Maintain memberships in groups organized to maintain currency in various fields.

Lecture/ Laboratory Presentation - ESSENTIAL: Present to students accurate and clear learning objectives for each lecture/activity or laboratory session, based on course outcomes and objectives; introduce and convey lecture/lesson materials and concepts in a clear and logical manner; effectively use a variety of methods to present information to class, e.g., lectures, group discussion, demonstrations, etc., with emphasis on the Socratic teaching method; encourage students to ask questions and actively participate in class activities; define and explain new concepts and ideas to class; ask questions to determine student comprehension of material presented; review and summarize key elements of lecture/lesson at end of class; utilize handouts and instructional aids to facilitate lecture/lesson presentation; foster classroom atmosphere which reflects sensitivity to cultural diversity and mutual respect for divergent points of view.

Student Evaluation/ Assessment - ESSENTIAL: Develop quizzes, examinations, term papers, homework assignments, projects, and laboratory assignments which fairly evaluate student progress in acquiring knowledge of subject material; monitor student activity during examinations and quizzes; read, evaluate, and grade student responses on examinations, quizzes, and projects; assign, read, and evaluate student homework assignments and projects; tabulate scores and assign official grades; advise students on matters regarding their academic performance; identify and evaluate learning problems of students and make recommendations for improvement and/or refer students to appropriate student services (i.e., Extended Opportunity Programs and Services [EOPS], the Learning Skills Center, Tutoring Center, etc.) for specialized testing and tutoring.

Shared Governance Activities - ESSENTIAL: Attend and participate in District, division, and department meetings; attend Advisory Committee, Board of Trustees and/or College Council meetings, as necessary;

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represent department and/or division by serving on District-wide committees; serve on employee selection committees, as requested; serve on faculty peer evaluation committees, as requested; participate in departmental meetings to assist in coordinating orders for supplies, equipment, textbooks, other classroom materials, requisitions, purchase orders, and request forms; maintain inventory and records of instructional supplies on hand; report classroom maintenance needs to proper source(s); keep familiar with District policies and procedures; prepare budget requests and submit to proper source(s); develop class schedules based on room availability; complete data processing information sheets for enrollment reporting. **PERIPHERAL:** Read minutes of shared governance bodies, Board of Trustees reports, and other written material to maintain knowledge of District activities; read and respond to information polls distributed by the Faculty Senate and/or other shared governance bodies.

Student Services - ESSENTIAL: Post and hold regular office hours; acknowledge diversity of student population and plan accordingly to include all students; provide students with a positive role model in terms of character and citizenship; participate in commencement and other student award ceremonies; provide students with letters of reference, as requested; develop standards of behavior for classroom conduct which foster an atmosphere of courtesy and respect for individual viewpoints and communicate them clearly to students; explain consequences for violating standards; handle student complaints fairly. **PERIPHERAL:** Provide articulation with feeder high schools through programs such as 2+2; encourage and assist students with scholarship applications; invite guest speakers to share their on-the-job experiences (i.e., "brown bag lunches"); arrange field trips to enhance students' knowledge of job opportunities.

Special Programs - ESSENTIAL: Participate in special programs related to enhancement of instruction; evaluate own professional status to determine what steps should be taken to broaden or strengthen teaching skills; keep abreast of changes in area(s) of expertise through attendance at conferences, seminars, workshops, etc.; remain receptive and open to new professional trends and teaching methods; subscribe to journals and magazines in area(s) of expertise, as feasible and appropriate; confer with colleagues regarding current trends and changes in discipline(s) taught; implement, as appropriate and feasible, new techniques in classroom instruction and evaluate effectiveness. **PERIPHERAL:** Maintain awareness of the local community in order to plan, develop or promote specific courses, programs and/or curriculum; speak before community groups and organizations regarding subject area(s) knowledge, as feasible and appropriate; participate in community affairs and groups.

MINIMUM QUALIFICATIONS

Degrees/Experience:

ESSENTIAL: Incumbent must possess a Master's Degree in Mathematics or Applied Mathematics OR a Bachelor's Degree in either of the above AND a Master's Degree in Statistics, Physics, or Mathematics Education OR the equivalent.

Knowledge of:

ESSENTIAL: Mathematics concepts and principles; teaching practices, methods, and techniques to prepare and teach courses in Mathematics ranging from Elementary Algebra to Differential Equations and Linear Algebra, including Geometry and Statistics; operation of scientific and graphing calculators; microcomputer applications software appropriate for Mathematics courses.

Ability to:

ESSENTIAL: Lecture and direct group activities; explain mathematical concepts and principles in a logical, sequential manner; provide students with a "hands on" learning experience in the laboratory; show sensitivity to and understanding of the diverse academic, socio-economic, cultural, and ethnic backgrounds of students; provide for the special needs of students with disabilities; form and maintain effective working relationships with students and other faculty members and staff; maintain personal integrity, honesty, reliability, and cooperation;



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work independently and/or collaboratively to solve problems; observe routine safety precautions for use of equipment. **PERIPHERAL:** Develop activities and assignments to address diverse learning styles.

Physical Suitability Requirements:

ESSENTIAL: Incumbent must be able to function indoors in a classroom/laboratory environment engaged in work of primarily a moderately active nature, and to accomplish the following, with or without reasonable accommodation: **Frequently:** Utilize vision (near) to read written materials and computer screens; utilize vision (far) to critique body language and other nuances of student performance; utilize hearing and speech for ordinary and telephonic conversation, to deliver lectures and respond to student questions, and to listen to student presentations; stand upright and forward flexing to deliver lectures and view student group activities classrooms and/or laboratories; walk, to move about classroom and campus environs; utilize manual and finger dexterity to write on whiteboards and/or overhead projectors and to operate microcomputers, calculators, and audio/visual and other equipment; lift (from overhead, waist, and floor levels, max. 50 lbs.) and carry (max. 50 lbs.) to move equipment and materials to and from classrooms/laboratories and in and out of storage areas; reach (from low, level, and overhead) to connect computer view screens and other audio/visual equipment and to turn television monitors on and off; twist and turn head and trunk to deliver lectures and assist students with laboratory activities.

Faculty Salary Schedule, subject to placement at date of hire.

FLSA exempt.

SCFA bargaining unit status.

Classification III, Bloodborne Pathogens Exposure Control Program.