UNIVERSITY OF SOUTHERN CALIFORNIA

VLSI Test Engineer

Job Code: 167405

Grade: TK

OT Eligible: Yes

Comp Approval: 10/8/2008

JOB SUMMARY:

Provides electronic test, engineering, and design support for semiconductor wafer engineering laboratory. Troubleshoots test instruments and related equipment and systems. Supervises assigned subordinate staff. Participates in budget development and administration, and development of internal policies and procedures.

JOB ACCOUNTABILITIES:

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<th>*E/M/NA</th>
<th>% TIME</th>
<th>Shares test engineering staff responsibilities for scheduling, coordinating, and modifying wafer laboratory work flow.</th>
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<td>Coordinates operation and maintenance of wafer and packaged device test equipment including automatic, semi-automatic, and manual wafer probe stations, electronic and mechanical interfaces from probers to test instruments, parametric and functional testers, and auxiliary test instruments and equipment. Troubleshoots test instruments, equipment, and systems and makes necessary modifications or repairs. Provides backup operations support.</td>
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<td>Oversees maintenance of wafer laboratories in consultation with senior test engineering staff. Coordinates contact with field service personnel and electrical, air conditioning, and other contractors when outside service is required.</td>
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<td>Supervises assigned subordinate staff. Participates in screening and interviewing of job candidates and in hiring and training of staff. Evaluates employee performance and provides guidance, counseling, and discipline for assigned staff.</td>
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<td>Recommends departmental goals and objectives and communicates them to staff. Reassesses or redefines priorities as appropriate in order to achieve performance objectives.</td>
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<td>Develops and maintains, in consultation with programming staff, software for semiconductor device testing.</td>
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<td>Produces and distributes standard and custom wafer laboratory test reports using command-line-driven report generators and electronic mail. Provides support for maintenance and development of report generating software.</td>
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<td>Supports custom test systems activities, including: creation and maintenance of designs and design documents (schematics, printed circuit board artwork, and mechanical and assembly drawings); purchase of electronic and mechanical parts; and coordination of assembly, test, debugging, and maintenance of prototype systems and existing custom installations.</td>
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<td>Participates in development and documentation of internal operating policies and procedures. Assists in development and dissemination of policies and procedures. Provides interpretation as required.</td>
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<td>Participates in development and administration of department budget. Provides projections and financial status reports as needed.</td>
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Networks with professional counterparts inside and outside the university. Participates in professional associations to stay informed of new developments and technologies. Makes recommendations to senior management regarding technology changes based on developments in field and business needs.

___E___ Develops and implements security related procedures such as office opening and closing routines, recognition of duress signals and key controls. Coordinates security activities with University Public Safety Department. Promotes and maintains standards for security conscious awareness and behavior. Maintains knowledge of university's crime prevention and suppression programs and services. Ensures dissemination of security related information to staff.

Performs other related duties as assigned or requested. The university reserves the right to add or change duties at any time.

*Select E (ESSENTIAL), M (MARGINAL) or NA (NON-APPLICABLE) to denote importance of each job function to position.

**EMERGENCY RESPONSE/RECOVERY:**

- Essential: No
- Yes In the event of an emergency, the employee holding this position is required to "report to duty" in accordance with the university’s Emergency Operations Plan and/or the employee’s department’s emergency response and/or recovery plans. Familiarity with those plans and regular training to implement those plans is required. During or immediately following an emergency, the employee will be notified to assist in the emergency response efforts, and mobilize other staff members if needed.

**JOB QUALIFICATIONS:**

**Minimum Education:**
- Bachelor's degree
- Combined experience/education as substitute for minimum education

**Minimum Experience:**
- 5 years

**Minimum Field of Expertise:**
- Comprehensive knowledge of standard electronic test equipment and computer user interfaces. Ability to read, interpret, and explain electrical and electronic schematics and mechanical drawings. Understanding of industry practice in the areas of materials storage and handling, care and maintenance of test equipment, and process and job flow documentation. Basic electronic and mechanical assembly skills including soldering and wire-wrapping. Working knowledge of analog and digital circuits (amplifiers, switches, buffers, oscillators, gates, latches, flip-flops, optoisolators), including ability to create prototype designs and circuits as required by wafer laboratory activities. Basic programming skills in at least two languages and operating systems used in the wafer laboratory environment. Intermediate level skills in file manipulations and text file editing on at least two widely used computer operating systems. Working knowledge of CAD software, spreadsheets, and other electronic engineering software tools.

**Preferred Experience:**
- 10 years

**Preferred Field of Expertise:**
Semiconductor electronic test or related field. Bachelor of Science in Electrical Engineering. Practical experience with several laboratory applications of personal computer hardware and software and UNIX-based tester workstations. Proficiency in file manipulations, text file editing, and command line utilities of three widely used computer operating systems (UNIX, VMS, DOS).

Skills: Administrative:
- Communicate with others to gather information

Skills: Other:
- Analysis
- Assessment/evaluation
- Budget development
- Coaching
- Conceptualization and design
- Conflict resolution
- Counseling
- Human resource process and employment knowledge
- Interpretation of policies/analyses/trends/etc.
- Interviewing
- Knowledge of applicable laws/policies/principles/etc.
- Organization
- Problem identification and resolution
- Scheduling
- Staff development
- Supervisory skills
- Teaching/training

Skilled in:
- Computer-Aided Design (CAD) tools
- Device physics
- Electronic semiconductor test equipment
- Engineering software tools
- Mathematics
- Quality assurance/testing methods, tools and techniques
- Technical documentation
- Troubleshooting
- VLSI electrical engineering at circuit level

Skills: Machine/Equipment:
- Calculator
- Computer aided tools for circuit or device level simulations
- Computer network (department or school)
- Computer network (university)
- Computer peripheral equipment
- Fax
- Personal computer
- Photocopier

Supervises: Level:
Supervises employees and/or student workers.

Supervises: Nature of Work:

Technical

Comments:

May require periodic weekend or evening work.

SIGNATURES:

Employee: ____________________________  Date: ____________________________

Supervisor: ____________________________  Date: ____________________________

The above statements are intended to describe the general nature and level of work being performed. They are not intended to be construed as an exhaustive list of all responsibilities, duties and skills required of personnel so classified.

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