These tools include debuggers, profilers, and compiler components. A number of approaches will be introduced to improve code performance including compiler and memory access optimization, and various software libraries will also be introduced to emphasize that many tools have already been exhaustively developed and should not be re-implemented by the programmer.

Finally, the course will move on to parallel computation. There is currently a massive paradigm shift away from a single hardware-processing element of ever increasing clock frequencies to parallel computational units. This is true in everything from Field Programmable Gate Arrays (FPGAs), Digital Signal Processors (DSPs), Graphics Processing Units (GPUs), to generic microprocessors such as the Intel and AMD processor lines. In order to leverage these evolving multiple hardware units effectively, much of the burden is placed on the programmer. This course will not spend any significant detail on embedded software/programming, as that is the focus on ASEN 4519/5519 – Microavionics. Nor does this course provide any instruction on the programming of applications for the popular tablet/smartphones genre - as these are not currently used for solving traditional aerospace computational problems. Although the concepts of this class could definitely be applicable and useful

Q i e P ic

Quizzes will

community.   In addressing any proven student violations regarding the Honor Code, the student leadership of the Honor Code Council applies only non-academic sanctions, and the faculty applies academic sanctions.

!   Academic Dishonesty: Any of the following acts, when committed by a student at the University of Colorado at Boulder, shall constitute academic dishonesty:

    i.   Plagiarism: Portrayal of another's work or ideas as one's own;

    ii.   Cheating: Using unauthorized notes or study aids, allowing another party to do one's work/exam and turning in that work/exam as one's own; submitting the same or similar work in more than one course without permission from the course instructors;

    iii.   Fabrication: Falsification or creation of data, research or resources, or altering a graded work without the prior consent of the course instructor;

    iv.   Aid of Academic Dishonesty: Intentionally facilitating plagiarism, cheating, or fabrication;

    v.   Lying: Deliberate falsification with the intent to deceive in written or verbal form as it applies to an academic submission;

    vi.   Bribery: Providing, offering, or taking rewards in exchange for a grade, an assignment, or the aid of academic dishonesty;

    vii.   Threat: An attempt to intimidate a student, staff, or faculty member for the purpose of receiving an unearned grade or in an effort to prevent the reporting of an Honor Code violation.

Violations of the Honor Code are acts of academic dishonesty and include but are not limited to: plagiarism, cheating, fabrication, aid of academic dishonesty, lying to course instructors, lying to representatives of the Honor Code, bribery or threats pertaining to academic matters, or an attempt to do any of the aforementioned violations. All incidents of academic misconduct shall be reported to the Honor Code Council (honor@colorado.edu; 303-725-2273). ***Students who are found to be in violation of the academic integrity policy will be subject to both academic sanctions from the faculty member and non-academic sanctions (including but not limited to university probation, suspension, or expulsion). Any act of academic dishonesty will result in an F for this course and will become a permanent part of the student's academic record.*** For more information about the