

Policies and Norms for the courses ICOM5047 and INEL 5195 – Design Project in Electrical and Computer Engineering¹

1 General Norms

The class and lab environment should be such that people are able to make the most of the workshops, lectures, space, time, and any other resource available to assist and enhance their learning experience. In order to guarantee the most efficient use of the resources there are several rules that must be obeyed at all times. Needless to say these rules are in addition to any civil and criminal laws as well as University and Department rules that could be in effect at any given time. The following rules are just examples and should not be construed to be the only applicable rules. The lab and or teaching assistants are responsible for any aspect related to the course whenever the faculty members are not present and as such they should be treated as you would treat any faculty in charge of the course.

The capstone lab is an environment of respect and consideration. Proper demeanor is expected from all students in the course. Proper language must always be used and any unnecessary noises must be avoided at all times. Being a lab and a class environment you must use adequate clothing, shoes, and hands and eye protection. Unauthorized use of equipment is not permitted whether the equipment is property of the University of Puerto Rico or not. Anyone in the class or lab must behave in a way that minimizes risks to others and self, as well as danger to the facilities and equipment. Therefore, playing, eating, drinking, smoking and any other activity that could result in damage to the facilities, equipment, or represent a risk to anyone is not allowed. Failing to comply with these and any other norms or rules will result in access to the laboratory being suspended immediately and proper notification will follow. If the fault is deemed by the faculty members to represent danger to people or property, further disciplinary actions may be pursued.

Access to the laboratory is exclusive to students registered in the course, faculty members and authorized personnel and only for activities and work directly related to the course. A student or team needing to invite any other person to enter the lab should request authorization in writing to the professors and should specify the name of the invitee(s), the visit date and time period as well as the justification for the visit. No visitors will be allowed until duly authorized by the professors. Failing to comply with this norm will result in access to the laboratory being revoked.

Students can request an item (equipment, devices and other elements) for their projects by filling in a request form. The student signing the request form is responsible for the good care of all the elements loaned to them. Damaged or lost items will be replaced at the student's expense. If any of the items

¹ These policies and norms may change to meet new needs. The changes, if any, will be announced in class and in the course Website; and will be enforced immediately.

changes hands, students should inform the teaching assistants or the professors in writing about any such changes. Otherwise, the student who originally borrowed the said item will be held responsible.

After the final presentation, the students should return to the laboratory all the borrowed items. The due date for turning in the equipment is set on the laboratory calendar. Failure to comply with this may result in disciplinary action against the student or their UPRM account being declared delinquent.

The area assigned to each group must be clean at the end of the semester. Failure to clean the workstation area will result in an incomplete grade with F in the course.

Every effort will be made to assign each team a locker in the laboratory. Students should buy a lock and provide a copy of the key to the professors or the teaching assistants. This copy of the key will only be used in case of emergency and will be returned to the team after all the items assigned to the team have been returned.

2 Attendance

Attendance to class and team meetings is compulsory². Missing 50% or more of a lecture is equivalent to one absence. Missing 10 minutes to 50% of a lecture is considered as a quasi-absence. Three quasi-absences is equivalent to one absence.

Each absence will result in a deduction of one (1) point from the final total score. Four or more absences to class without reasonable excuse constitute a grade of F in the course. More than eight total absences to class constitute a grade of F in the course. A student with more than three absences to team meetings without reasonable excuses may be dismissed from the team with all the corresponding consequences described in section 3 below. Students engaged in activities not related to the lecture during lecture time may also be deducted one (1) point for each occurrence.

Excuses should be submitted within the following week after returning to class. Medical excuses should have printed the name of the physician, the office address and the telephone number(s). The professors may verify the veracity of any excuse. Notice that it remains at discretion of the professors whether or not to accept the excuse.

Students are responsible for making the arrangements for duly justified absences to oral presentations or practical demonstrations². Conditions for makeup presentations or practical demonstrations should be agreed upon with the professors and when necessary with the teammates.

3 Accountability and performance

All the teams should maintain a Web log (blog) which serves as a journal of the team activities, work, discussions and decisions. This blog is to begin no later than the second week of class and should remain during the entire semester. Professors must be given access to the team's blog. Team meeting

² Class attendance and examinations. *Undergraduate Catalog 2014-2015*. University of Puerto Rico, Mayagüez Campus. Page 79.

notes and attendance control should be posted on the blog on a regular basis. Any doubts about the blog should be directed to the faculty members.

Every student is accountable to their teammates. A student with poor performance in their work may be dismissed from their team. Dismissal of a student from the team can be the result of:

- individual student evaluation by the professor(s);
- request in writing by their teammates; or
- any other just and adequate procedure.

A request to dismiss a student from a team should present evidence of the student's poor performance, prejudice to the teamwork or unjustified absences to team meetings, but the decision of their dismissal is the sole decision and responsibility of the professors, based on the evidence and arguments of all the parties involved.

A student dismissed from their team will have access to the course laboratory removed and should return all the borrowed items assigned to them no later than one day after their dismissal. Failure to comply with this may result in a disciplinary action or their UPRM account being declared delinquent. A student dismissed from a team will obtain a grade of F in the course³.

4 ADA

In order to make the necessary arrangements, students must provide a letter for reasonable accommodation within the first two weeks of the beginning of the semester. Depending on the request professors will determine if it is possible to provide the accommodations.

5 Reports, presentations and practical demonstration examinations

The project proposal, progress and project report should be submitted on the date specified in the course calendar (see <http://ece.uprm.edu/~icom5047/>), unless a date change is agreed upon with the professors. Every delayed submission will result in a penalty of 25% reduction of the full grade per calendar day of delay. After four calendar days of delay the grade will be 0.

All reports must contain a table of contents. This table of contents will list each section of the report. We require that each section contains the name of the writer of the section. In addition, the report must contain the name of the editor (person who edits the whole report).

Practical demonstrations should comply with the requirements established by the professors for each one and should present at least the outcomes described in Section 5.1 below, on the dates specified in the course calendar and at the times agreed upon between each team and the professors. Delayed

³ Evaluation of students's academic coursework. *Undergraduate Catalog 2014-2015*. University of Puerto Rico, Mayagüez Campus. Page 79.

demonstrations will result in a penalty of 25% reduction of the full grade for each additional opportunity. After four opportunities the demonstration grade will be 0.

Absence to a presentation or practical demonstration without reasonable excuse acceptable to the professors will result in a grade of 0 in the presentation or demonstration.

5.1 Expected demonstrations outcomes

There will be three practical demonstrations in the semester and the expected results in each one are specified below:

- First practical demonstration: Complete detailed design of all the components both hardware and software; bill of materials and some implementations.
- Second practical demonstration: Full implementation of all the components and modules of the system, individually tested and ready for integration and final testing. Students are expected to explain in detail all the technical aspects of their module(s) specifications including interfacing with the rest of the system, their designs, implementations, and individual tests performed. Students should be able to explain any difficulties or problems faced with their project and how they were solved.
- Third and final practical demonstration: System fully integrated, functional and tested. Students are expected to explain in detail all the technical aspects of the system specifications, design, implementation, integration and testing. Students should provide testing evidence and data together with their analysis, and be able to explain any difficulties or problems faced with their project and how they were solved.

5.2 Grading of practical demonstrations

Practical demonstrations are at the very heart of this course and thus are a very significant part of the students' grade in the course. Therefore, a student's performance in each practical demonstration may become a deciding factor between the student's passing and failing the course. In every practical demonstration students are **individually evaluated and graded** by the team of the course professors. At the professors' discretion, the teaching assistants may become part of the evaluating team. Other persons may be invited to assist in the evaluation of a project when there is a need for expertise in a particular area. Evaluation and grading criteria will be published on the course website at least one week before the practical demonstration date.

In all the demonstrations, every student is expected to have a sound knowledge of the whole system, and detailed and in-depth knowledge of their corresponding assigned components or modules assigned to the student. The first two practical demonstrations will be graded according to the achievement of the outcomes described in section 5.1 above.

For the final demonstration, the system should be fully functional, integrated and tested according to specifications. **Partial credit will not be given for isolated components or modules that are working.** If the system is not fully functional, integrated and tested as specified, the demonstration grade will be 0.

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6 Teamwork and Peer evaluation

Teamwork is a requirement of every project in the course, so every student must be part of a project team. The performance of each student in a design team will be peer-reviewed by their teammates three times during the semester. Hence, all students are strongly encouraged to contribute to all aspects of the project.

7 Additional constraints

- The capstone project must solve a real world problem with real constraints and value proposition.
- This is a design course therefore the project must show an open ended problem is solved using a design process in one of the following areas:
 - For ICOM
 - Software
 - Hardware
 - Combination of Software and Hardware
 - For INEL
 - Electronics
 - Communications
 - Electromagnetics
 - Control Systems
 - Power/Power Electronics
 - Combination of the areas above
- Clear system specifications. All the projects must comply with existing engineering standards. Non-compliance with any currently applicable standard must be duly justified.
- A group of students must be working on the project.
- A real actual customer.
 - Please make sure that the customer knows the rules and regulations of Intellectual Property (IP) at UPRM. UPRM has participation on the IP of all Software/hardware design done in the capstone course. Any element of the project used for commercial purposes must be approved by UPR.
 - Student presentations are open to the public. The customer must be informed about this and, if needed, he/she may be required to sign a disclosure agreement.
- Follow the design process: problem analysis, presenting multiple solutions, decision, and proposal based on an engineering analysis of the solutions.
- A final working prototype is required. All projects must be delivered with final assembly in encasing.
- Clear testing plan for verifying system's compliance with specifications.

- Workload among team members should be evenly distributed, and individual workloads must be adequate to the academic requirements of the course. The scope of the project is determined based on the size of the team.
- For ICOM students, all code will be graded from the course repository, hosted at the ECE department. Git will be used as the repository. Code contribution will be determined solely from the repository content.

8 Public health measures

A student presenting the symptoms of a contagious disease should stay at home, not attend public places and contact their primary doctor. If the symptoms appear while on campus, the student should go immediately to Medical Services or to their primary doctor. In any case, the student should inform the professors by email (or telephone when sending email is not possible) and must not return to class until a physician certifies in writing that the student is back in a health condition suitable to attend public places.

Possible contagious conditions include flu, conjunctivitis, small pox, and measles, among others. It is expected that any student takes appropriate measures to avoid spreading the disease.