

# IPPD Coach Guide

*A Resource for Mentoring Project Teams*

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Dear Faculty Coach,

Integrated Product and Process Design (IPPD) is an outstanding experiential education at the University of Florida. Multidisciplinary teams of senior-year undergraduates work for two semesters designing, building and testing authentic products for industrial sponsors. To guide their efforts, we rely on the expertise of faculty coaches here on campus and the professional guidance of liaison engineers at the sponsoring companies.

As a faculty coach, you are responsible for the academic success of the team, as well as the success of the design project. We developed this guide to help you accomplish these complementary goals. In this guide we have begun to capture best practices for managing your teams. These best practices include how to deal with conflicts, tips on coaching, roles and responsibilities, and who to rely on for administrative support.

I expect each of you to meet with your teams and communicate with your sponsors every week. In addition to reviewing the deliverables prepared by the team, I expect you to collect the hours reported by the team members each week. You are responsible for assigning their grades, so it is important that you track their progress and facilitate the learning process.

The project is for the students to accomplish, so we need to be “the guide on the side, and not the sage on the stage.” If the students are not making mistakes, then they are not taking enough risks—“fail often to succeed sooner.”

I am happy to have you on board this year and look forward to learning with you.



R. Keith Stanfill, Ph.D., P.E.  
Director, IPPD

# 1 Roles & Expectations

*“It is the people and not the procedures and techniques that are crucial to accomplishing the team objectives. Procedures and techniques are mere tools that help people do their jobs”*

## 1.1 Director

The director is responsible for the academic, financial, and product development success of the IPPD program. Administrative, purchasing and travel requests are approved by the director before processing. The director represents the program and the University of Florida to industry customers and peer academic institutions. The liaison engineers and customers may approach the director at any time during the project period to discuss any issues or concerns.

## 1.2 Advisory Board

The advisory board is appointed by the dean of the College of Engineering and is responsible for providing oversight of the program and offering feedback to the director and the dean on initiatives (sponsorship fees, laboratory upgrades, and new staff positions) and outcomes (pre/post self-assessments, annual success/failure rates). The board may also provide recommendations to project teams that are not making satisfactory progress.

## 1.3 Faculty Coaches

The coach is an experienced engineer who assists the team to design and build real-life industrial products. He or she is the primary point of contact for the team and helps the student engineers to understand and implement the structured design process. The coach is responsible for insuring the student team meets all academic and project goals.

## 1.4 Liaison Engineers

Liaison engineers keep the team focused on the project goals. They play a vital role in both the successful completion of the project and in the development of students into workforce-ready professionals. The students look to the liaison engineers as role models.

## 1.5 Student Team Members

### 1.5.1 Team Leader

The team leader leads the development of the project plan and works with the other team members to create deliverables. He or she is responsible for meeting with the coach to generate meeting agendas and preparing weekly project-status memos for the liaison engineer, coach, and director. The team leader also reserves design stations, generates lecture-attendance reports for the coach, collects weekly time from each member, and

“The team leader's primary goal is not to complete a specific task but to ensure the completion of the task so that the other team members get the opportunity to handle responsibilities and make decisions”

prepares the weekly project scorecard. He or she ensures that all the members receive appropriate notice of the times and places of group meetings. When team members fail to attend a group meeting, the team leader is expected to assume full responsibility if the absence is due to poorly communicated information. The team leader is responsible for ensuring that each team member is fully aware of his or her individual responsibilities and assigned deliverables. It is a necessary skill for a team leader to effectively assign tasks to each team member according to his or her skill sets. The team leader's primary goal is not to complete a specific task but to ensure the completion of the task so that the other team members get the opportunity to handle responsibilities and make decisions.

#### 1.5.2 *Poster Coordinator*

The poster coordinator collects required information from team members for the poster, designs and prints the poster, and ensures that it is ready before the final design review session.

#### 1.5.3 *Scribe (rotational assignment)*

In addition to recording meeting minutes and publishing minutes within 24 hours the meeting, the scribe updates the team's "tickets" (action register/issues log) on the team's trac wiki (<http://en.wikipedia.org/wiki/Trac>).

#### 1.5.4 *Facilitator*

The facilitator runs the team meetings, ensures the agenda is completed, and involves/encourages all attendees to participate in the meeting.

#### 1.5.5 *Finance and Travel Coordinator*

The finance and travel coordinator serves as the point of contact for arranging any team travel and turns in original travel receipts within 24 hours of return from travel. He or she is also responsible for managing the Lowes and Target Copy account cards. This team member serves as the point of contact when purchasing project materials, maintains a log of project expenses, and turns in original receipts/invoices/packing lists within 24 hours of receipt of merchandise.

#### 1.5.6 *Web/Wiki-Master*

The web/wiki-master learns how to create and edit team wiki content, sets up initial content, and then trains the rest of the team—including the coach and liaison engineers. He or she learns how to use trac, SVN, and other tools to collaborate with teammates, the coach, and liaisons. All project electronic documentation will be maintained on the team wiki and SVN ([http://en.wikipedia.org/wiki/Subversion\\_\(software\)](http://en.wikipedia.org/wiki/Subversion_(software))).

### 1.5.7 *Time Keeper*

The time keeper assists the meeting leader (or facilitator) in keeping the meeting within time allotments for each topic.

### 1.5.8 *Research Librarian*

The research librarian learns how to conduct thorough patent searches and trains the other team members how to do so. He or she also maintains a list of project reference sources on the wiki (list is also used for report bibliographies), and develops and maintains a glossary of project-specific terminology.

### 1.5.9 *Template Manager*

The template manager is responsible for developing and maintaining templates for the major deliverables, memos, and presentations. All the group members will contribute to the templates, but the template manager will have management responsibility to develop a naming convention for all documents, assure compliance with the convention, and maintain templates on SVN with links on the team wiki.

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*“A pilot survey that focused on the content of capstone design courses revealed that there exists “consistent difference between faculty, student, and industry responses about importance, proficiency, and expectations, especially across technical and professional topics*

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## 2 Faculty Coach Expectations

### 2.1 Preamble

A pilot survey that focused on the content of capstone design courses revealed that there exists “consistent difference between faculty, student, and industry responses about importance, proficiency, and expectations.”<sup>i</sup> The **faculty** heavily emphasized technical aptitude with the understanding that professional skills “are buried in the process of achieving the outcome.” However, the **industry** perspective showed that professional skills by themselves are fundamental to the success of employees. The **student** responses revealed that students feel proficient in both technical and professional topics. The industry respondents felt such a perspective may be inflated, given the students’ limited experience. It is crucial that a mentor of the design projects understands and takes to heart the purpose of the courses. The program has the opportunity to impart a unique blend of technical and professional skill sets to the students involved, and the mentors are a crucial link in this process of learning.

### 2.2 Evaluator and Coach

It is important to know the various roles expected while coaching the student team. There is often a tension between the interrelated roles of the evaluator/coach:

*As evaluator, one reviews the performance of his/her direct reports. As coach, one looks for ways to help them grow and improve. This dual role might make it hard for direct reports to be coached. A coach should be trusted to share ones weaknesses and shortcomings, but a direct report might be hesitant to confide such information for fear of admitting errors that will affect their performance evaluation. If this trend exists amongst most of the members of a group, this might have a direct impact on the ability to manage and meet the group's goals. The best way to cope with the dual roles of an evaluator and a coach is to create an atmosphere of trust. Direct reports feel comfortable sharing and opening up to those who show interest in their long-term development and provide both support and autonomy.*<sup>ii</sup>

Consider the following expectations to help span the roles of coach and evaluator<sup>iii</sup>:

- 1. Have a positive tone.** Be sincere and clear in your intentions to help the students.

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*“The best way to cope with the dual roles of an evaluator and a coach is to create an atmosphere of trust”*

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2. **Be an active listener.** Instead of listening partially while thinking of a reply, one should listen both to what the student *is* saying and what the student *is not* saying. The coach should not stay focused merely on the words, emotions, and body language, but he or she should also discern the ideas between the sentences.
3. **Ask open-ended questions.** Often times it is the *question* that determines the quality of the answer given. Open-ended questions are very helpful in inviting people to share ideas and participate. Consider the following examples of when to use open-ended questions:
  - To explore alternatives: “What would happen if...”
  - To uncover attitudes or needs: “How do you feel about our progress to date?”
  - To establish priorities and allow elaboration: “What do you think the major issues are with this project?”

Closed-ended questions are more direct and lead to “yes or no” answers. They can be used in the following situations:

- To focus the response: “Is the project on schedule?”
- To confirm what the other person has said: “*So, the critical issue is cost?*”

### 2.3 Schedule

*Staying on schedule is crucial.* Because each student has different commitments and schedules, the team’s time together is extremely valuable. Thus, maintaining a good schedule during team meetings increases the utility of that scarce resource—time. The following tips can be used to help meetings run more efficiently:

- Include times for each agenda item. One of the best paths to a productive meeting is a meeting agenda that allows the team members to know what to expect and how to best prepare for the discussions.
- Designate a person to act as a timekeeper. A team should be flexible and account for any unexpected run-off agenda items. The group should decide which discussions are acceptable to run longer than originally planned, and not cut important discussions short just to enforce the agenda. The team leader should plan the agenda to include enough time to comfortably cover each important agenda item.
- Set a good example by being on time for workshops and meetings.
- Get silent students involved in meetings by asking each team member to provide a brief weekly update, and asking for input during decision-making activities.<sup>iv</sup>

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*“One of the best paths to a productive meeting is a meeting agenda that allows the team members to know what to expect and how to best prepare for the discussions”*

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## 2.4 Motivation

- Focus on positive reinforcement: “You showed excellent initiative in testing the evaluation board. Next time, please double check that you've connected the power to the appropriate terminals.”
- Provide honest feedback.
- Consider the following quote when dealing with difficult students: “It’s a shame that your peers view you as arrogant. It will limit what you can accomplish in life.”<sup>v</sup>

## 2.5 Style

- Be flexible and adaptable. Some teams respond to a more formal setting while others are comfortable with a more casual atmosphere.
- Retain individuality of style.

## 2.6 Special Topics & Project Details

- Be prepared to give special lectures on project-specific subjects.
- Be comfortable and informed about the engineering aspects of project.
- Review weekly progress reports before submitting to the liaison.
- Deliver anything promised to students.

## 2.7 Communication

- Emphasize communication with the company liaison.
- Discuss effective writing and presentations.
- Remember that this is an educational experience for the students.
- The following useful language-skill tips can greatly assist the coach in communicating with the student team<sup>vi</sup>:
  - Use **not-knowing skills** by maintaining a posture of curiosity and an ability to set aside one’s expertise and listen.
  - Use **client’s key words** to formulate students’ next questions.
  - Circumvent problems and get to details of the solutions and desired changes by asking **suppose questions**: “Suppose your frustration is resolved, what...”
  - Ask **difference questions** to help explore alternate solutions: “What difference would it make? Is it different for you? Who would notice the difference?”
  - Use **good reason questions** to discover students’ motivations: “You must have a good reason to be...”

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*“Remember that this is an educational experience for the students”*

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- Ask **relationship questions** to help bring perspective to a discussion: “What would your best friend say...”
- Allow for disagreement without alienating others by using the **tentative language** of negotiation and collaboration: “Could it be that you are thinking...”
- Take responsibility for change instead of blame for mistakes.

## *2.8 Benefits of Failure*

The coach should allow students to “burn and learn.” IPPD is an experiential learning course. As such, coaches should adopt an attitude of “fail often to succeed sooner.” Students should be allowed to make mistakes and learn from them. Coaches should encourage student leadership and student initiative and emphasize that risk taking is expected; if students aren't making mistakes, then they probably aren't taking enough risks.

## *2.9 Anecdotes from Personal Coaching Experiences*

**Situation:** The team leader is not performing, is late, and missing meetings; team morale is low.

**Coach Action:** During a team meeting, the coach announces, “time to vote in a new leader,” without first confronting the underperforming student.

**Result:** The student did not have an opportunity to correct his performance deficiencies and was caught off guard during the team meeting. The student was embarrassed in front of his peers; his behavior did not improve, and he dropped further out of the team. A better solution would have been to confront the student privately, provide an action plan for improvement, monitor the results, and then act.

## 3 Management Concepts for Coaches

### 3.1 Initial Team Meeting

The first meeting is crucial in setting the team's tone and work ethos. The outcome of the project is often determined by what is achieved during the initial team meetings. The coach should set clear rules during the first meeting by discussing meeting minutes, weekly memos, team member roles, and responsibilities. During this time, it is beneficial to determine the team members' roles and agree upon a team purpose.

- Divide students into pairs and have them learn about their partners and then introduce each other by presenting the following information about their partners:
  - Home town
  - Major
  - Why they enrolled in IPPD
  - What intrigues them about this project
- Review with the students the project summary sheet and discuss the project's context (why it is important for the sponsor, what are the envisioned deliverables, how will the deliverables be used for the sponsor, etc.).
- Brainstorm ideas for a team name and logo.
- Learn details about the students by collecting the following materials from each team member:
  - Resume
  - Brief written biography
  - Written skills-inventory (e.g., welding, fabrication, soldering, building computers, auto/bike repair, carpentry, computer programming, writing, etc.)
- Establish expectations
  - Clearly define a team purpose statement that helps establish and identify the expectations for each team member and for the team as a whole. The expectations for the team should be visible from the beginning. After expectations are decided, they should be written down and revisited during subsequent meetings.

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*" The expectations  
for the team  
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beginning "*

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- Distribute the written purpose statement and discuss each of the following 14 expectations:

*As a coach, I expect*

1. Every team member to take initiative
2. Everyone to devote 10 to 15 hours a week, on average, and to provide evidence of this effort in an up-to-date design
3. Everyone to come to class or to alert me in advance if you cannot attend (attendance to class is a requirement to obtain a grade of A)
4. Everyone to develop a professional attitude and demeanor
5. Everyone to be prepared—read the book and the Engineer Training Manual, consult the weekly schedule, and learn and practice the IPPD process
6. Everyone to bring design notebooks to every project activity and keep good records
7. Everyone to participate in project presentations
8. Everyone to attend all meetings and workshops and to arrive on time
9. Each team member to work at developing competencies in areas where they are weak (e.g., leadership, public speaking, planning, writing, analysis)
10. Individual and team accountability
11. Aggressive follow up on important tasks before they become urgent
12. Team members to ask for help when they need it—nothing good ever comes from avoiding a problem
13. Everyone to check email at least twice daily and to respond to all inquiries and requests in less than 24 hours
14. Everyone to treat IPPD like a job

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*" The meeting facilitator must be prepared to redirect discussions as needed to stay focused on the goals "*

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### *3.2 Organizing & Planning*

A productive meeting can be the reason for energizing a team and giving it the momentum required to achieve success. The table below is a general sequence of events for a successful meeting that can be used to help a new team plan its meetings.<sup>vii</sup>

- It is important that the meeting starts and ends on time as this shows respect to those who made an effort to be available. The meeting facilitator must be prepared to redirect discussions as needed to stay focused on the goals.

- Require meeting minutes and meeting agenda and insure delivery to the liaison within 24 hours.
- Establish weekly liaison-teleconference with the coach present.
- Conduct weekly individual team member updates.

Before	During			After
<p><i>1. Plan</i></p> <ul style="list-style-type: none"> <li>• Clarify meeting purpose and outcomes</li> <li>• Select methods to meet purpose</li> <li>• Develop and distribute agendas</li> </ul>	<p><i>2. Start</i></p> <ul style="list-style-type: none"> <li>• Check-in</li> <li>• Review agenda</li> <li>• Set or review ground rules</li> <li>• Clarify Roles</li> </ul>	<p><i>3. Conduct</i></p> <ul style="list-style-type: none"> <li>• Cover one item at a time</li> <li>• Manage/moderate discussions</li> <li>• Maintain focus and pace</li> </ul>	<p><i>4. Close</i></p> <ul style="list-style-type: none"> <li>• Summarize discussions</li> <li>• Review action items</li> <li>• Plan for next meeting</li> <li>• Evaluate the meeting</li> <li>• Thank participants</li> </ul>	<p><i>5. Follow Up</i></p> <ul style="list-style-type: none"> <li>• Distribute meeting notes promptly</li> <li>• File agendas, notes, and other documents</li> <li>• Do assignments</li> </ul>

### 3.3 Student Resources Available

It is the responsibility of the coach to educate the students and encourage them to use the following resources:

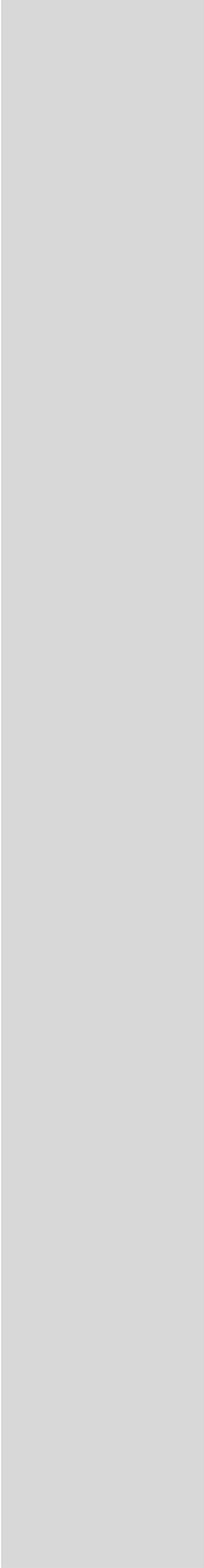
- The IPPD Design Stations
- Other professors if coach/liasion does not know an answer
- The IPPD New Engineers Training Manual
- Guidelines and standards for holding meetings and preparing presentations
- Previous team PowerPoint presentations

### 3.4 Selecting and Managing the Team Leader

The team leader provides the leadership needed in a project team to accomplish the objectives and goals of the team. Thus the person chosen to fill this position should possess qualities that are conducive to achieving goals, from both a personal level and an organizational level. The team leader is also a team member and should share in the team member responsibilities. When selecting a team leader, the coach should look for the following skills:

1. Leadership skills
2. Ability to develop people
3. Communication skills
4. Interpersonal skills
5. Ability to handle stress
6. Problem-solving skills<sup>viii</sup>
7. Facilitation skills

"... the person chosen to [be the team leader] should possess qualities that are conducive to achieving goals, from both a personal level and an organizational level "



8. Task-coordinating skills

9. Project-management knowledge

The coach may opt to select the team leader a few weeks after the initial meeting, after the personalities and people skills of the team members are more evident. Team leadership may also be rotated to allow all team members to learn from the experience.

## 4 Conflict Management

### 4.1 Preamble

Everyone on a team brings his or her own cultural/social backgrounds and experiences to the table, and it is only natural to have differences in opinion between team members. These differences can often lead to conflicts that can be destructive and hinder the realization of the full potential of the team; conversely, the conflicts can help in the development of new ideas and give opportunities to gain new information, bring alternatives to the table, and encourage team building. The team leaders, members, and coaches should acknowledge from the beginning that conflicts are inevitable and should reach a consensus at the initial meetings on ways to deal with conflicts when they arise.

*" It is important for the coach to understand the difference between members who are feuding and members who are merely in disagreement.*

### 4.2 Intervention

The coach should consider intervening if the team is not progressing satisfactorily due to problems associated with the current team leader. Offering compliments as a form of intervention can help encourage the team members to adjust behavior to align with the best interests of the team. Coaches should intervene immediately if a personal attack occurs by encouraging students to keep their comments focused on the topic at hand instead of directed towards the person with whom the disagreement occurred.<sup>ix</sup> Also, a coach should be sure that no one is using judgmental language. If the problem persists, it should be brought to the attention of the IPPD director for further action. Do not let things slide—nothing good comes from avoiding a problem.

### 4.3 Identifying Problems within a Team

The coach should be aware of the following seven sources of conflict:

1. **Work Scope:** differences in opinion regarding how the work should be done and how much work should be done.
2. **Resource Assignment:** a lack of resources or too few team members assigned to a certain task.
3. **Schedule:** the estimated time required for the project or the sequence of tasks related to the assignment.
4. **Cost:** decisions and purchases made that may compromise budgetary guidelines.
5. **Priorities:** prioritizing multiple tasks related to the project or other courses.

6. **Organizational Issues:** the team leader and the coach are not able to set clear ground rules regarding expectations and requirements. This may be due to poor communication, lack of information sharing and untimely decision-making. Poor attendance at team meetings or advisor meetings and a lack of responsibility of specific tasks are just some of the signs of an organizational issue of a team member.
7. **Personal Differences:** natural and inevitable consequence of team settings where different people with different individual values and attitudes join together to accomplish a goal.<sup>x</sup> It is important for the coach to understand the difference between members who are feuding and members who are merely in disagreement. The feud may have existed long before the team existed. The coach should not make it a goal to end the feud, but to find a way to allow the team to move forward.<sup>xi</sup>

*"Members who fail to contribute a reasonable share can be terminated from the team "*

#### 4.4 Terminating Team Members

There are times that certain conflicts are irresolvable in the short term even after honest efforts are made. Also, the efforts invested in conflict resolution can take away valuable time from the team objectives and will likely drag down the whole team. The coach, in consultation with the team leader, is able to discharge a team member to protect the efforts and hard work of the rest of the team.

All members of the team are expected to engage fully in the project activities. Members who fail to contribute a reasonable share can be terminated from the team, in which case the terminated member will receive a failing grade in the course for the semester.

The coach may decide to begin the process of terminating a team member who does not participate in team activities; refuses to produce deliverables on time; does not maintain expectations stated by the coach; demonstrates poor attendance; conducts him or herself unprofessionally during travel; receives extremely poor team-member evaluations; or commits an act of insubordination towards the coach, director, staff, or team leader in a fashion that compromises the timely progress, quality, or the success of the project.

The coach should provide to the team member in question a written description of the unacceptable actions/behaviors and an action plan for correcting the behavior. Progress on the action plan will be monitored and if satisfactory progress is made, then the student may continue with IPPD.

Otherwise, the coach will consult with the director on a course of action and call for a termination meeting at which the team members will provide feedback regarding the potential termination. Finally, the offending student will meet with the coach and the director to determine if he or she can continue with IPPD. If the student is terminated, he or she will receive an appropriate grade and will not be allowed to register for the following IPPD semester.

#### 4.4.1 *Team-Killing Behaviors*

Studies have shown that the overwhelming factor influencing the ability of a team to succeed is not the collected capability of the team, nor the competence of the top performer. Instead, team outcomes are most influenced by the capabilities and behaviors of the weakest members of the team.<sup>xii</sup> There are three key team-killing behaviors to be aware of: **the jerk**, **the slacker**, and **the depressive pessimist**.<sup>xiii</sup>

**The jerk** is a know-it-all who only values one opinion—his own. The jerk undermines the confidence and cohesiveness of the team by constantly shooting down others’ ideas yet rarely offering any of his own. The constant idea rejections create an uncomfortable environment and kill creativity and productive discourse.

**The slacker** is never prepared and does not deliver. The slacker is a no-show at meetings, or is perpetually late. The slacker may be busy texting or e-mailing during team meetings. Eventually, the slacker is not assigned any work, and the team must scramble to cover for him, taking away valuable time from other sub-projects and leaving some unfinished.

**The depressive pessimist** kills any team momentum by complaining, stalling, and whining. “Why do I have to be here?,” “Why do I have to do this?,” “I don’t care about this project,” “Someone ran over my cat.” Eeyore, the donkey from the A. A. Milne *Winnie the Pooh* books fits this profile. The negative energy radiated by the depressive pessimist eventually wears down the team and crushes the spirit of the group.

#### 4.5 *Dealing with an Inactive Sponsor*

According to the Liaison Guide, the liaison engineer needs to be available—at the least—for the weekly teleconferences and for occasional consultations with individuals on the team. If the liaison engineer is doing less than that, the coach should contact the IPPD director to intervene.

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*" Because this program is an educational program, evaluation is done differently than would be typical of industry"*

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## 5 Student Performance & Grading

### 5.1 Guidelines

Because this program is an educational program, evaluation is done differently than would be typical of industry. To keep an appropriate focus on the educational aspects of the experience, student engineers will be evaluated on both their performance in the lectures/workshops and their performance on the project.

Lecture/workshop performance constitutes approximately 20% of the grade. The items evaluated are attendance, preparation by outside reading, participation, and class assignments.

The remaining 80% is based on the project grade. Project grading is more difficult because there are no formal tests or quizzes by which to quantify a grade, as is the case in more traditional courses. The final grade is therefore based on a qualitative assessment of the student-engineer's work. The following sections describe how team project grades, individual project grades, and individual final grades are assigned.

### 5.2 Team Project Grade

Experience indicates that most people working in teams produce better results than those working alone. Therefore, a typical project team can be expected to produce results that merit an above-average grade. For this grade to be improved, it will be necessary for the faculty coach to demonstrate any exceptional results that the team accomplishes. However, if the team fails to produce results that merit an above-average grade, the team grade can be reduced. Team grading will not be done on a curve. Each team is considered individually. Grades are not assigned by comparing teams to each other. Team comparison is only considered for purposes of consistency.

Team grades are based on the timeliness and content of project deliverables, periodical design reviews, reports, presentations, industry input, customers' needs being met, and the management of the project within budget.

The faculty coach's input is the most important factor in assigning the team project grade. At periodical design reviews and presentations (peer reviews), assigned grades of all teams will be reviewed for consistency.

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*"It is the student engineer's responsibility to provide evidence of his or her contribution..."*

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### 5.3 Individual Project Grades

Once the team project grade has been assigned, individual project grades for the team members can be assigned. This is primarily the responsibility of the faculty coach. The average of the individual project grades must not be higher than the team project grade. To assign an individual grade, the faculty coach will consider the following two sources of input: evidence of contributions and peer evaluation results.

#### 5.3.1 Evidence of contributions

It is the student engineer's responsibility to provide evidence of his or her contribution so that the faculty coach can make a clear assessment. Thus, the student engineer must respond to all assigned tasks, keep legible and organized records of all the work, and become a constructive participant in all team activities. The above description applies to all team and individual assignments and responsibilities.

#### 5.3.2 Peer evaluations

Each team member is asked to give a monthly, anonymous evaluation of each of the team members (including himself or herself). The faculty coach considers the evaluation in the qualitative assessment of each team member's work. The peer evaluation also helps the faculty to detect major problems within the team. The individual project grade is combined with the individual lecture/workshop grade for the individual final grade. Several times during each semester, the faculty coach advises the project team and each individual about their current performance evaluation.

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*" The peer evaluation helps the faculty detect major problems within the team*

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<b>Grade</b>	<b>Performance Characteristic</b>
A	outstanding grade--must demonstrate initiative, be self-motivated, and go beyond what is asked for in the program
B	above-average grade--requires that all assignments are completed on time, done with care, and done correctly
C	average grade--awarded for work that is on time, but demonstrates a lack of initiative
D	below-average grade--awarded for work that is late, only partly fulfills the requirements, and demonstrates no initiative
F	failing grade--given for work that is missed and does not fulfill the requirements of the assignment

## 6 UF Administrative Support

### 6.1 Preamble

The IPPD program assistant and IPPD systems administrator are key resources available to assist the project teams in accomplishing their goals. These staff members are trained in the details of proper purchasing and travel procedures and have developed forms and processes to ensure productive interactions with students, faculty, and sponsors and to comply with University of Florida rules. Please reinforce with the students that the IPPD staff are partners eager to help and not barriers.

### 6.2 Travel

- Travel expenses are deducted from the IPPD Admin Fund.
- All receipts on allowable expenses should be turned in with name and UFID# to the program assistant at 303 Weil Hall.
- All travel must be requested one week prior to departure. The IPPD program assistant makes all reservations for hotel, vehicle, and airfare. Specific guidelines can be found on the forms, which can be accessed via the links below:
  - Coach travel:  
(<https://my.ippd.ufl.edu/trac/public/wiki/Travel - Travel>)
  - Student travel: (<https://my.ippd.ufl.edu/trac/public/wiki/Travel - Travel>)
- All receipts must be given to IPPD Program Assistant.

*"All travel must be requested one week prior to departure"*

### 6.3 Purchasing

Due to strict grant cost-sharing rules, coaches should review the following procedures:

- All purchases must go through the IPPD office.
- All project expenses should come from the IPPD Prototype Admin Fund.
- All purchases should be initiated by team members at myUFLMARKET.
- Purchases made on the principle investigator (PI) fund of \$15,000 are at the sole discretion of the coaches and will not be reimbursed by IPPD.

- Coaches need approval from the IPPD director and program assistant before making purchases using personal P-cards for IPPD project purchases.

#### *6.4 Target-copy Card/Lowe's Account*

- To make Target Copy purchases, please email the program assistant at [ippd@ise.ufl.edu](mailto:ippd@ise.ufl.edu)
- For purchases using the Lowe's account, please complete the Materials & Supplies Request Form. Completed forms can be turned in to the systems administrator or the IPPD program assistant.

#### *6.5 Information Technology*

Any technical questions should be forwarded to Norman Miller, the systems administrator, at [nemiller@ufl.edu](mailto:nemiller@ufl.edu).

#### *6.6 Equipment checkout*

- A catalog of available test equipment and tools is available online.
- Students must plan ahead as equipment pickup is only available during normal business hours. Equipment reservations will be available on the web 24 hours a day, 7 days a week.
- Equipment policy details are located online.
- Please schedule a pick-up time with the systems administrator ahead of time to ensure availability of equipment.

#### *6.7 Other Resources at IPPD*

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*"Students must plan ahead as equipment pickup is only available during normal business hours"*

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##### *6.7.1 Websites*

- The IPPD public site (<http://ippd.ufl.edu>) can be sent to any parties interested in IPPD.
- The myIPPD secure site (<http://my.ippd.ufl.edu>) is for students, coaches, liaisons, and administration only. This site is a portal to all IPPD web resources.

##### *6.7.2 Wiki*

- A wiki (<http://en.wikipedia.org/wiki/Wiki>) is a collaborative website using a wiki software to create and edit web pages using a common browser.
- The wiki is used to upload and access meeting minutes, project goals, project status, and contact information, and is available to students, coaches, liaisons, and administration.
- A wiki tutorial is available online at the myIPPD secure site.

### 6.7.3 SVN

- The SVN used at IPPD is tortoiseSVN (<http://tortoisesvn.tigris.org/>). It is a subversion ([http://en.wikipedia.org/wiki/Subversion\\_\(software\)](http://en.wikipedia.org/wiki/Subversion_(software))) client implemented as a Microsoft Windows shell extension.
- The SVN is used to manage and archive project documents, source code, and CAD data.
- The SVN is available to students, coaches, liaisons, and administration.
- An SVN tutorial is available online at the myIPPD secure site.

### 6.7.4 Labs

- Labs are available to students, coaches, liaisons, and administration.
- Lab areas are a secure area for IPPD project building, meeting location, and design stations.
- The ECE Senior Design Lab is also available to IPPD students

## 7 Frequently Asked Questions

### *7.1 Who do I contact if I am not satisfied with the performance of the project team?*

In the early phases of the project, it may be advisable to contact your team leader and the IPPD director prior to addressing the team regarding its performance. Once you have developed a rapport with the team, you should feel free to address an issue directly with team members. Please, do not let an issue fester or grow into a bigger problem.

### *7.2 Who do I contact if I am not satisfied with the performance of the liaison engineer?*

Contact the IPPD program director, Keith Stanfill at 352-846-3354 or by e-mail: Stanfill @ ufl.edu. Please, do not let an issue fester or grow into a bigger problem.

### *7.3 How involved should I be?*

This is a judgment call. You need to be available for the weekly teleconferences, to review deliverable content, to attend IPPD faculty meetings, and to consult with individuals on the team as required. You may also have to teach team members specific technical skills.

### *7.4 How much time commitment is involved?*

The time commitment will depend upon the complexity of the project and your management style. Expect three to seven hours a week.

### *7.5 I am not available to meet during the team's weekly meeting. What can I do?*

Sometimes student class schedules make it nearly impossible for the entire project team to meet during normal business hours. Coordinate this issue with the team leader. The coach and the team leader should communicate regularly with each other about the project. The team should prepare and e-mail everyone (team members, coach, and liaison engineer) the detailed minutes of each coach-team meeting so that everyone will be on the same page regarding the progress of the project.

### *7.6 The project scope seems to be too aggressive for the team to complete. What can be done?*

Frequently the project scope needs to be renegotiated during the execution of the project. This may be the result of new technical or resource challenges discovered by the project team, a mismatch between the team's skill set and the refined project goals, an underestimated original project scope, or other reasons. The Preliminary Design Review, held in mid October, is an excellent opportunity to change the project scope--after this review it is generally only possible to narrow the scope.

### *7.7 How do I learn more about the individuals on my project team?*

Prior to the first team meeting, it is recommended that you and the student team exchange brief biographical sketches. You may wish to share your motivations for becoming an engineer in your biographical sketch. You may also request resumes.

### *7.8 The project appears to be headed for disaster. How should I step in?*

If you feel the project is headed for disaster, then immediately contact the IPPD director. It may be possible to engage additional resources to help the team overcome its challenges. The project team should be made aware of your concerns and should be involved in the re-planning process. This activity should be treated as an important learning opportunity.

### *7.9 What is the best way to deal with an inactive sponsor?*

According to the Liaison Guide, the liaison engineer needs to be available—at the least—for the weekly teleconferences and for occasional consultations with individuals on the team. If the liaison engineer is doing less than that, contact the IPPD director to intervene.

### *7.10 The liaison engineer is leaving. How will this affect the team, and what can be done?*

Losing a liaison engineer in the middle of a project can lead to disaster. Identifying, educating, and integrating a new liaison engineer can take months. To minimize the effects of a liaison change, it is recommended that a back-up liaison be involved with the team throughout the project. Inform the team members and the IPPD director as soon as the liaison engineer discloses his or her status. Any extra help from the coach would be invaluable to the team to make sure the project does not fall behind.

### *7.11 How should I offer criticism?*

Constructive criticism is preferable, but do not sugarcoat your statements. As you develop a rapport with the team members, you should be able to treat them as you would coworkers or subordinates. Provided you treat the team as professionals and can share with them the technical or business justification for your criticisms, you should not hesitate. Allow the team freedom to develop ideas to accomplish project goals that may be contrary to how you would normally proceed. A failure can be turned into a learning experience.

### *7.12 How do I learn more about the IPPD process the students are following?*

New Engineer's training manual defines the deliverables. Also, the following text is recommended: Product Design & Development by Ulrich and Eppinger.

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## 9 End Notes

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- <sup>i</sup> Howe, *Content in Capstone Courses*, 27.
- <sup>ii</sup> McManus, *Coaching People*, 43-44.
- <sup>iii</sup> McManus, *Coaching People* 21-24.
- <sup>iv</sup> GOAL QPC, *Team Memory Jogger*, 157.
- <sup>v</sup> Pausch, *The Last Lecture*, 68.
- <sup>vi</sup> Berg, *Brief Coaching for Lasting Solutions*, 75-84.
- <sup>vii</sup> GOAL QPC, *Team Memory Jogger*, 74-75.
- <sup>viii</sup> Gido, *Successful Project Management*, 304.
- <sup>ix</sup> Berg, *Brief Coaching for Lasting Solutions*, 227-229.
- <sup>x</sup> Gido, *Successful Project Management*, 465.
- <sup>xi</sup> GOAL QPC, *Team Memory Jogger*, 140.
- <sup>xii</sup> Felps et al, *Research in Organizational Behavior*, 202-213.
- <sup>xiii</sup> Felps 2008