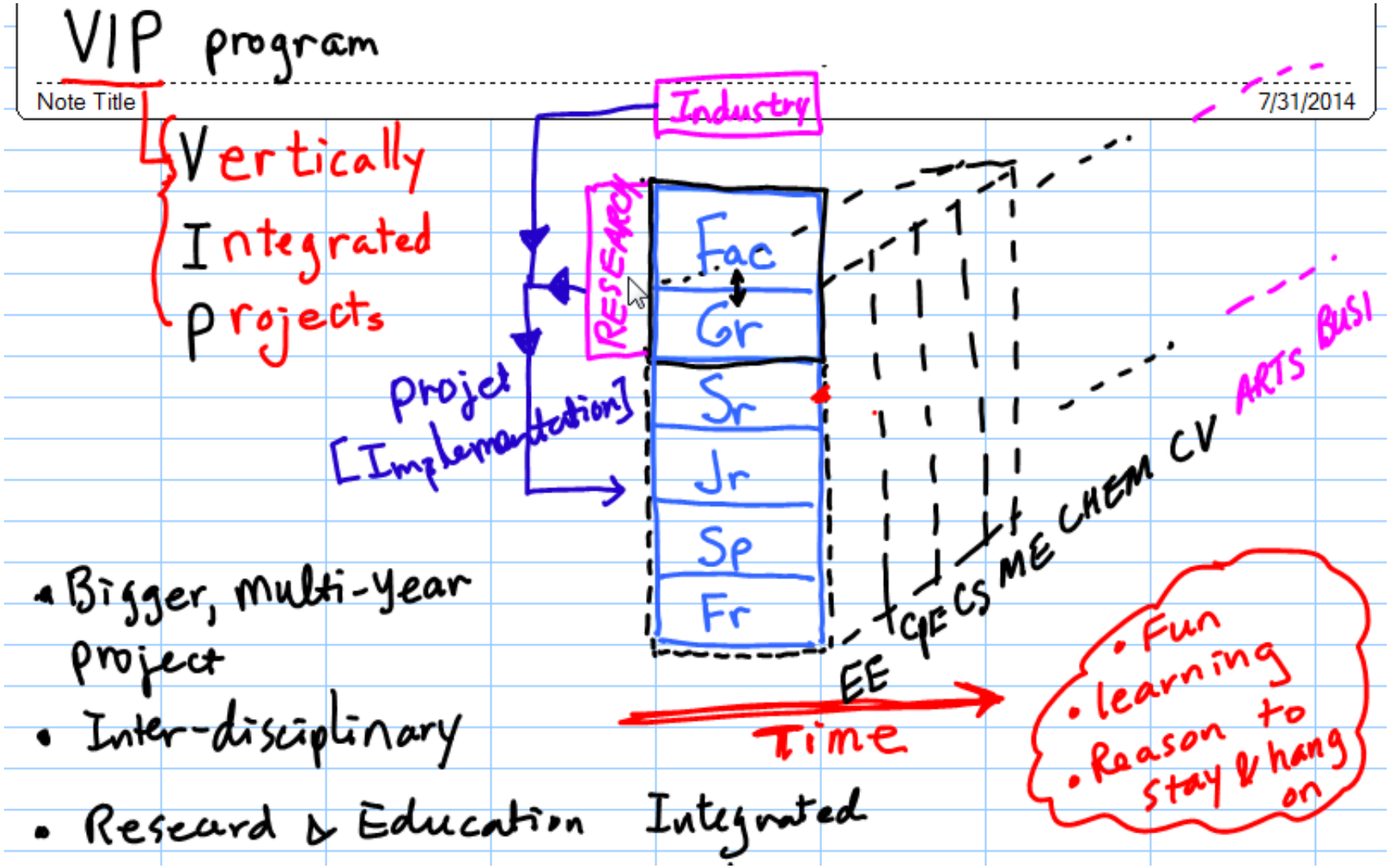
Project Team and Teamwork

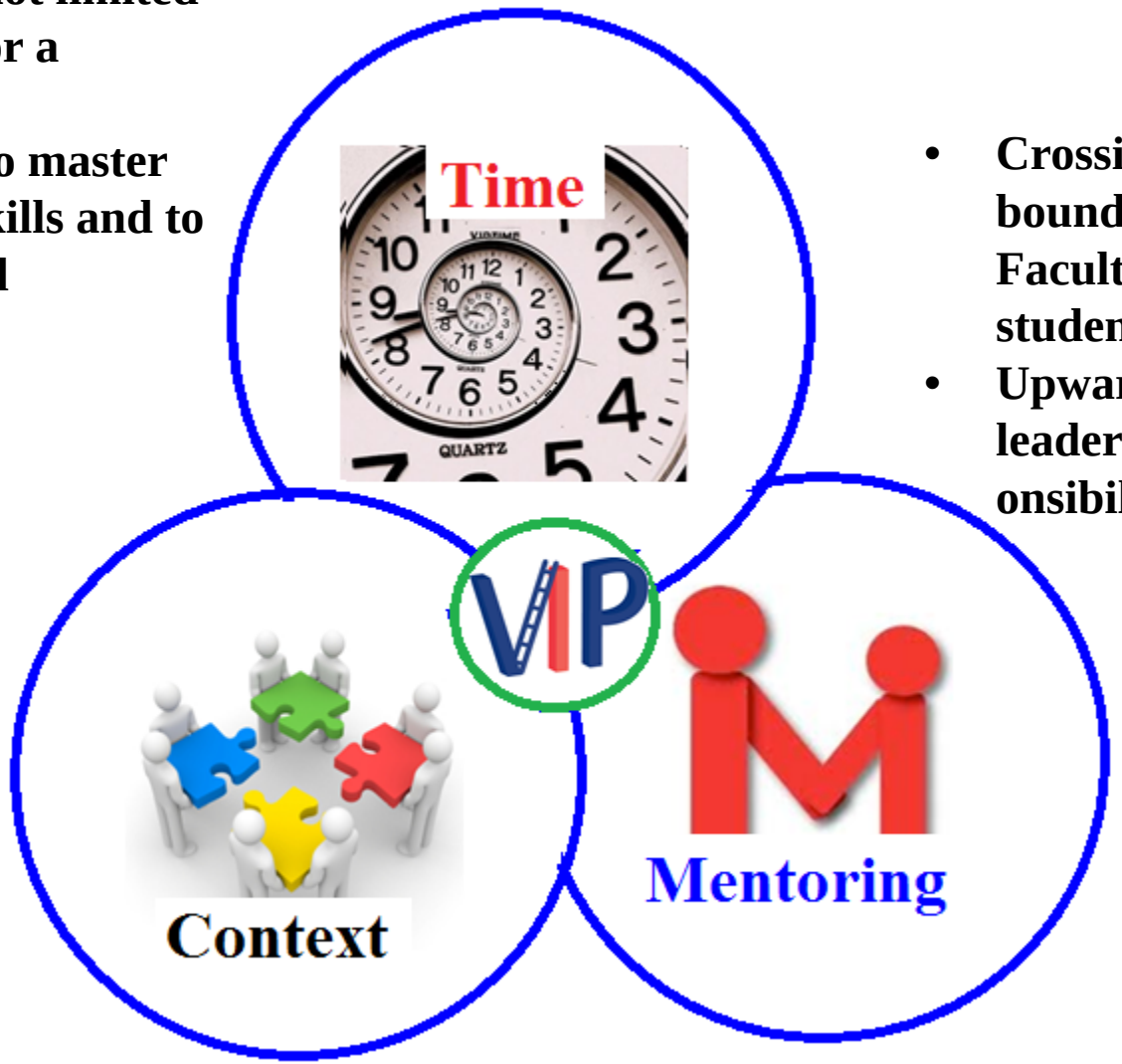
Department of Electrical and Computer Engineering
Howard University

VIP team Project - Essence



Key Elements of VIP Team Project

- **Long Term – not limited by a summer or a semester**
- **Enough time to master professional skills and to make technical contributions**



- **Crossing boundaries: Faculty>Grad student>Sr>Jr**
- **Upward leadership/responsibility role**

- **Large scale**
- **Multidisciplinary**
- **Real Problem solving**

3 Important Things to do for team Project

- **1) Weekly Meetings (outside class)**
- **2) Project Binder** (each team)
  - Grading point!!!
- **3) Project Note** (Each Team member & Participant, **you**):
  - Grading point --- Composition note
- **4) Team webpage** -- Optional

3 Important Things to do for team Project

- **1) Weekly Meetings (outside class)**
  - Tasks are defined
  - Each task assigned
  - Each task performed individually or in sub-groups
- **2) Project Binder** (each team)
- **3) Project Note** (Each Team member & Participant, **you**):
  - Write every activities: search. Research, designs done by **you**
  - Weekly meeting minutes
  - Grading point --- Composition note

3 Important Things to do for team Project

- **1) Weekly Meetings (outside class)**
- **2) Project Binder** (each team)

  - Record/Keep all your works
    - Individual works, drafts, emails,
    - Datasheets, ordering receipts, etc
    - Proposals (v1, v2, …vn)
    - Meeting Minutes
    - Presentation
    - Design Requirements
    - Anything and everything the team did and produced
    - Put them in to a Binder – chronological order
  - Submit the binder at the end of the semester
  - All team activities
  - Grading point!!!
- **3) Project Note**

Schedule and Tasks

- **Team Formation**
  - Number of ECE Senior students in a team:
    - **Max 5 Min 2**
  - Each Team will have *x* number of underclass students
  - Each team recruits other students (especially underclass students)
  - Contact the faculty advisor (and a graduate student)
- W September 20
  - Final Team Selection
- Week of Sept 21 – 26: First Team Meeting
  - Find and decide "**Project Scope of 2017-2018 academic year**"

Pause !

- HW#1 Compliance to Regulation
- What's asked?

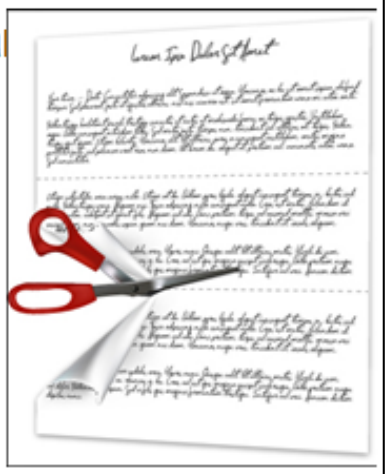
Regulatory Compliance – Homework 1 (Individual)

- Write a technical brief on the following subject
  - Explain (1) the following codes and (2) what decision FCC made, on the specific Cellphone Booster, and why that kind of decision was made.
    - **CISPR22**, **FCC Part 15**, **IEC 61000-4-2**, and **CISPR 24**.
- Submission Details on HW #1:
  - A docx/txt file which (1) summarizes above 4 standards or specifications and (2) explains the FCC decision(s) made on the cellphone booster.
  - Use complete sentences; **no** bullet itemization; **no** page limit; **no** images nor pictures – text only.
  - File naming norm: "**HW1_lastname.docx**" - no cover page (your name and ID in the first line)
  - Due: W September 6 – by 1:00pm (Email submission to ckim@howard.edu)

Pause !

- HW#1 Compliance to Regulation
- What's asked?
- How has it to be written?

- So, write as if you are a staff writer (targeting for busy people) for a newspaper, and remember that you have a editor whose job is to cut your article to fit into a limited space, maybe just 1 inch in a column.
  - Important things [Conclusions and summary] in the first paragraph
    - Summary of the event/thing first so that it delivers message even though only that summary survives the "cutting"
  - Then expand your story after the First Paragraph
  - Use your own words → "Similarity check"



4

Good

10/10/7% 20/20

good! main body is excellent!

Senior Design I

September 6, 2017

Homework 1

There are several key standards that a designer much consider when creating a device that intentionally or unintentionally may generate radio disturbances. Namely, the CISPR 22, FCC Part 15, CISPR 24 and the IEC 61000-4-2 are standards that define how electrical and electronic devices must behave. CISPR 22 and FCC Part 15 both define regulations for the adequate levels of radio disturbances a device can generate. CISPR 22 specifies the acceptable levels of radio emissions over the 0.15 MHz to 30 MHz frequency range. The IEC 61000-4-2 is a standard defining the testing procedures for ensuring that electrical devices operate as intended when hit by an electrostatic discharge from an electrified human body or nearby object. These rules and regulations stand to ensure that all operators of devices that fall under the above sanctions behave as intended even in certain environments. One major recent standard set by the FCC is the rules and regulations for operating cellphone boosters. There was a definite need for some regulation as several of these cellphone boosters were causing the cell towers to overload with traffic which caused network failures and degraded performance.

CISPR22 is a standard maintained by the International Special Committee on Radio Interference that is used for electromagnetic compatibility. It is a very commonly used standard for Information Technology equipment (ITE) in Europe. The standard gives methods of measurement for the levels of radio disturbance caused by signals produced by the ITE. The

Good

10/10/2% → 20/20 good!

There are many standards used for the regulation and certification of electrical and electronic devices which are crucial to harmonious performance between electronic devices. Electromagnetic phenomena are the main reason that standards such as CISPR 22, CISPR 24, FCC Part 15 and IEC 61000-4-2 exist. They allow manufacturers to stay within certain bounds eliminating chances of interference and system failure as well as reducing prices of manufacturing these systems. CISPR 22 and FCC Part 15 deal with electromagnetic compatibility in Europe and America respectively but FCC also regulates higher frequencies whereas CISPR 22 does not. CISPR 24 is an extension of CISPR 22 that deals in other standards such as communications ports and surges and IEC 61000-4-2 is the testing requirement for Electrostatic discharge on a system to ensure proper operation. The Cell phone booster is one such example where regulation is necessary to prevent damage to other systems in the environment. The booster was unregulated and outlawed before 2013 due to the interference and damage caused to existing network infrastructure like overloading cell towers with traffic and disrupting emergency services. The FCC stepped in and implemented new regulations to remove the likelihood of interference from consumer signal boosters thus allowing them to be used by consumers.

CISPR which is the International Special Committee on Radio Interference has a standard that deals with electromagnetic compatibility called CISPR 22. CISPR 22 is more specifically the standard for Information Technology Equipment-Radio Disturbance Characteristics-Limits and Methods of measurement. CISPR 22 is also part of another European standard called EN 55022 which cover both analog and digital devices. The standard was developed in order to regularize the electromagnetic specifications that would be used by equipment in all areas of the society. Its main purpose was to have uniform requirements with respect to the EM disturbance level and to help develop methods of measurement and normalize operating conditions for both analog and digital devices divided into two classes A and B.

There is an American standard parallel to the CISPR 22 called Part 15 FCC Title 47 or

? Good ?

9/10/13%

19/20

18/20

Standards and Regulations

Just discuss here summarily

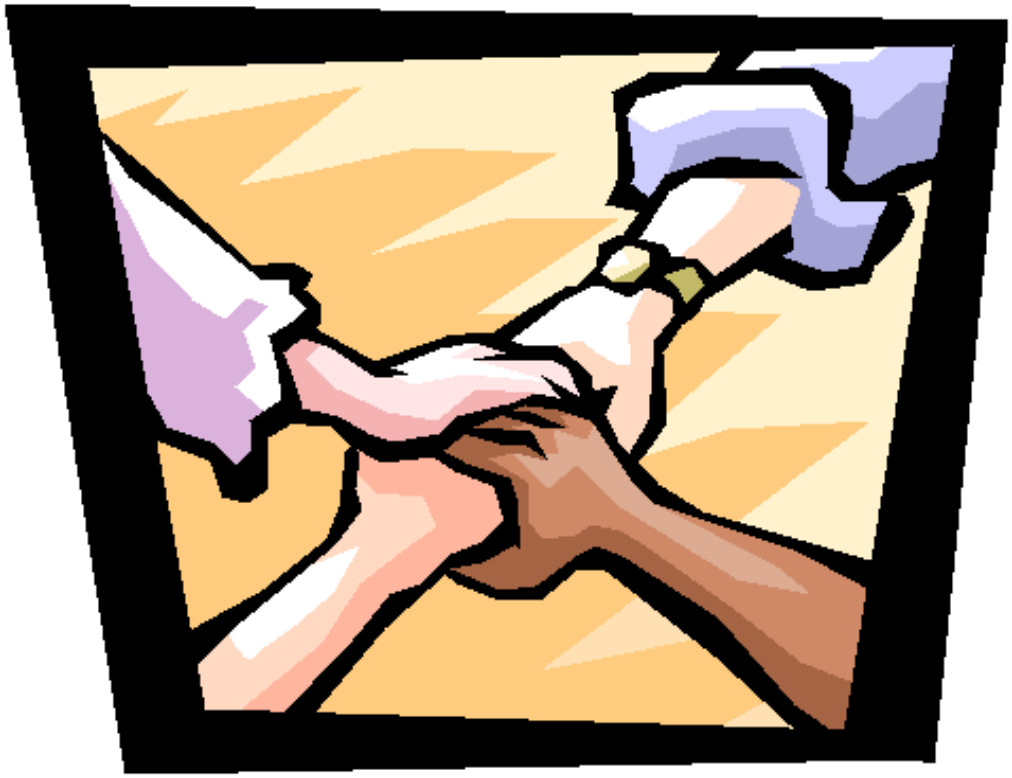
In this assignment we'll be discussing basic international electronics regulations in place today, as any device wishing to get patented must adhere to regulations. First we discuss CISPR 22 and FCC part 15 which deal with Radio frequency interference prevention. Following that we talk about IEC 61000-4-2 and CISPR 24 which discuss the requirements for an electronic device to resist discharge. Finally we give an example of a case of an electrical appliance that infringed on these device requirements and was later rectified. This case of the Cell phone signal booster shows us the importance of complying to international regulations.

give now & here in summary

The first standard/regulation we'll be looking at is CISPR 22, the standard for Information Technology Equipment -Radio disturbance characteristics - Limits and methods of measurement. Simply put this standard sets the bounds, internationally, for any device that would produce radio disturbance. This is done by having those devices conform and operate in certain frequency bands. They can be found here. http://www.radio-electronics.com/info/circuits/emc-emi/cispr22-en55022-standard.php . EN 55022 and FCC part 15 are the European and USA derivatives of this standard, respectively.

In particular, FCC Part 15, also named Title 47 CFR Part 15, is a set of regulations, subparted A through H, that the USA has any electronic device distributed in the United States review for. This part of Title 47 deals primarily with Radio frequency electronics and their frequency bands much like CISPR 22. A detailed description of each subpart of Title 47 CFR

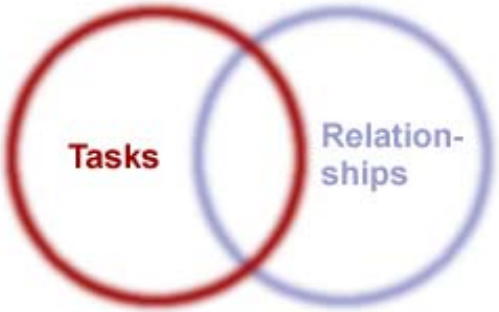
Teamwork and Leadership



Team

- Team
  - A special kind of group
  - Deliberately formed to commit to a purpose
  - "A team is a small number of people with complementary skills who are committed to a common purpose, set of performance goals, and approach for which they hold themselves mutually accountable" --- Katzenbach & Smith
    - Small group
    - Complementary skills
    - Common Purpose
    - Mutual Accountability

More than just tasks



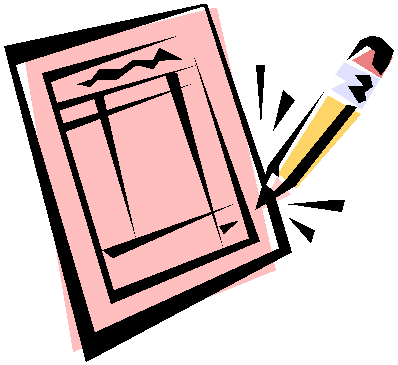
- Effective Team Output:
  - "task productivity" & "relationship morale"
- Tasks:
  - Directed toward reaching goals
  - Focus on problem solving and decision-making
  - Elements of effective task accomplishment
    - Seeking Information
    - Sharing Information
    - Walking the talks
    - Bringing results to meetings
- Relationship:
  - Building Morale through investment in interpersonal attributes of motivation, confidence, group dynamics
  - Elements of effective relationship and high team morale
    - Listening
    - Seeking agreement
    - Encouraging
    - Compromising
- Key to Success
  - Balance between Task and Relationship

Recap: Team is

- Team is
  - **Formed** by Relationship among team members
  - **Guided** by a vision and set of common goals
  - **Functioned** by roles of members to accomplish tasks
  - **Run** by following agreed-upon rules and procedures

Team Contract – Joining a team

- Goal
- Expectations
- Rules and Policies
- Commitment



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Requirements for VIP Participants

Requirements	Resources
1. Approval from Team Advisor (use Team Contract From -- See the right column) 2. Weekly Team Meeting Participation & Meeting Records 3. Participation in Semester-End Team Presentation (last week of the semester) 4. Submission of Survey (last week of each semester) 5. Submission of 1-minute video (or audio) clip of Elevator Pitch (Last week of the semester)	* VIP Team Contract Form (in pdf), Team Contract Form (pdf fillable), and a Sample Contract * VIP Weekly Meeting Recording Form * VIP Survey (See below) at the end of the semester * Elevator Pitch & How to Prepare for it? * VIP Presentation Tips

Team Contract: Goals and Expectations

- Goal Statement
  - **Long-term Goal**
  - ***Academic Year Objectives !!!!***
  - Clear, measurable targets that indicates progress toward the purpose
- Expectation
  - Team's expectation on team members in
    - Meeting attendance and on-time arrival
    - Activity participation
    - Communication
    - Productivity
    - Assigned task completion
    - Keep the deadline
    - Etc

Team Contract: Rules and Policies

- Rules and Policies
  - Running of Meetings
    - Who runs the meeting?
    - Cell-phone policy
    - How team decisions and consensus will be reached
  - How meeting absenteeism and tardiness will be handled
    - Policies for missing one meeting or being late
    - Policies for contacting someone to contact
  - Expectations of quality works
    - How to handle late and incomplete work of a member?
    - How to reward team members who exceed expected performance
  - Relationship
    - What each member to bring to each meeting
    - Developing “can do” attitude
    - etc

Team Contract
Fillable Form

Submit the completed form to your team advisor and keep a copy for you.

Project Team Contract

VIP @Howard

For Academic Year: _____

Project Team Name			
Project Team Advisor	Name:	Discipline(Major):	Email:
Project Team Graduate Assistant	Name:	Discipline (Major):	Email:
Long Term Goal of the Project			
The Scope and Deliverable of the Academic Year	Academic Year Scope/Goal: Academic Year Deliverables:		
General Rules and Policies	**Each team member is required to** • Work proactively and keep the advisor and team members informed of things related to the project. • Be honest and open during all project activities. • Encourage diversity in team work. • Provide the opportunity for equal participation. • Be open to new approaches and new ideas. • Encourage everyone to participate in solving problems. • Focus on solving problems, not blaming people. • Only use constructive criticism. • Be present on time for weekly meetings. • Bring assigned works completed to the meetings. • Honor meeting timeframes. • Present ideas clearly and concisely. • Read communications (emails, meeting minutes, action items, etc.) from the team. • Respond in a timely manner. • Honor the team leader and follow the leader's instruction and assignment		
Team Specific Rules and Policies	**Stated by the advisor or graduate assistant:**		
Commitment by Participant	*I voluntarily participate in the project team with expected activities to collectively achieve the long-term goals and the academic year objectives under the guiding goals, roles, and policies as stated in this contract. I understand that I am obligated to abide by these rules and policies. I understand that if I do not abide by them, I may be requested to leave the project team.* Name (print) / Signature / Date Email / Major (EE, CpE, CS, ME, CV, CHEM, etc) / Level (Gr,Sr, Jr, Sp, Fr)		
Approved by the Advisor or Graduate Assistant	Approver's Name (Advisor or Graduate Assistant) / Signature / Date		

Team Contract Form - Sample

Submit the completed form to your team advisor and keep a copy for you.

"Sample"

Project Team Contract

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For Academic Year: 2017-2018

Project Team Name	Time to Space: Converting time-domain signal to 2D image		
Project Team Advisor	Name: Dr. Charles Kim	Discipline(Major): EE	Email: ckim@howard.edu
Project Team Graduate Assistant	Name: Derrick Anang	Discipline (Major): EE	Email: derrick.anang@bison.howard.edu
Long Term Goal of the Project	Development an electronic device which measures time domain signals and converts to a 2D image for a scientific purpose		
The Scope and Deliverable of the Academic Year	Academic Year Scope/Goal: single signal conversion to 2D image Academic Year Deliverables: A prototype which demonstrates the said conversion		
General Rules and Policies	**Each team member is required to** • Work proactively and keep the advisor and team members informed of things related to the project. • Be honest and open during all project activities. • Encourage diversity in team work. • Provide the opportunity for equal participation. • Be open to new approaches and new ideas. • Encourage everyone to participate in solving problems. • Focus on solving problems, not blaming people. • Only use constructive criticism. • Be present on time for weekly meetings. • Bring assigned works completed to the meetings. • Honor meeting timeframes. • Present ideas clearly and concisely. • Read communications (emails, meeting minutes, action items, etc.) from the team. • Respond in a timely manner. • Honor the team leader and follow the leader's instruction and assignment		
Team Specific Rules and Policies	**Stated by the advisor or graduate assistant:** * willingness to master Android application development tools and skills		
Commitment by Participant	*I voluntarily participate in the project team with expected activities to collectively achieve the long-term goals and the academic year objectives under the guiding goals, roles, and policies as stated in this contract. I understand that I am obligated to abide by these rules and policies. I understand that if I do not abide by them, I may be requested to leave the project team.* Adam Trask (Name (print)) — Adam Trask (Signature) — 9/1/2017 (Date) adam.trask@eastofeden.com (Email) — CpE (Major (EE, CpE, CS, ME, CV, CHEM, etc)) — Sr (Level (Gr,Sr, Jr, Sp, Fr))		
Approved by the Advisor or Graduate Assistant	Charles Kim (Approver's Name (Advisor or Graduate Assistant)) — (Signature) — 9/4/2017 (Date)		

"Sample"

"Sample"

Running Effective Weekly Meetings

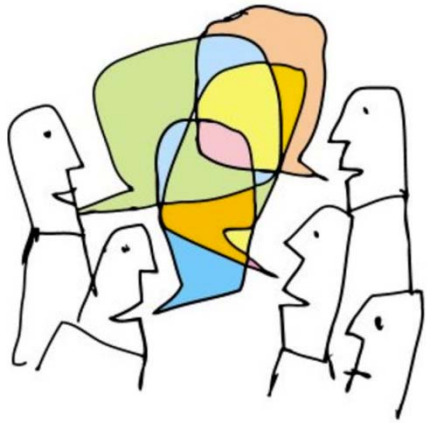
- Weekly Meeting
  - The main form of information exchange
  - Tasks to be identified and allocated
  - Status on assigned tasks reported
- Meeting **Agendas** and **Minutes**
  - Without agenda, meeting is not productive
  - Agenda contents:
    - Purpose
    - Topics
    - Desired outcomes
  - **Meeting Minutes**

Meeting Etiquette

- Begin the meeting on time
- Review the agenda as the first activity of the meeting
- Focus discussion on facts (not on personal issues)
- Stay on track
- Close the meeting effectively
  - Summarize the decisions made and action items for each member
  - Set the agenda for next meeting
  - Evaluate how the meeting went

Peer Evaluation – Rationale

- **Teamwork & Fairness**
- Evaluation of each team member's strength and weakness in terms of Tasks and Relationships
- Each member fill out the form individually
- Submit the form individually via email (when required) – at the end of the semester
- The submitted evaluation forms and results are kept confidentially by the advisor or the instructor.
- But will be used in grading



Peer Evaluation

- For each item (we have 10 items) a team is given a sum of money allocated to $500 per member.
- For each item, distribute the sum to each member according to his/her performance on the item
- The same scores for all members are not accepted nor counted.
- P = [Total Amount of Money]/5000

Peer Evaluation

		Write each member's LAST name below (including yours)				
1	Works cooperatively to complete team assignments					
2	Prepares for, arrives on time, and attends meetings					
3	Makes positive contributions to meetings					
4	Work is of high quality and completed on time					
5	Brings a creative spark to the team					
6	Supports and respects other members' efforts and opinions					
7	Is able to give and receive feedback effectively					
8	Is responsible and accessible					
9	Is enthusiastic about the project and energetic					
10	Demonstrates effective leadership, keeps team focused, and elevates the work of the entire team					
	TOTAL					30