**TECHFIT Professional Development Program for Middle School Teachers**  
**Tentative Schedule: July 14-19, 2014 at Purdue University, West Lafayette, Indiana**

| Day 1 | Introduction: Meet TECHFIT and student support staff. Complete team-building activities to build rapport with participants and staff.  
Fitness activities: Participate in and observe various fitness activities.  
**Overview:** Review TECHFIT program, goals and objectives. Introduction to EDP, exposure to commercially available exergames. Discuss after-school program development.  
**Electronics and automation technology:** Instruction on basic electricity, safety, controller technologies, logic and event-driven programming.  
**Information technology:** Introduction to use of software tools, such as spreadsheets to track fitness activities and Scratch for exergame storyboarding examples. |
| Day 2 | **Fitness activities:** Participate in and observe various fitness activities.  
**Automation technology:** Demo systems developed by student staff to show teachers skill set and service mindset of the student support. Introduction to the TECHFIT technology toolkit including demos of devices and PLC programming.  
**Exergame development:** Compare commercially-available exergames with the game designed in the pilot study. Explore TECHFIT toolkit components and possible game scenarios, connect the toolkit pieces, and practice programming.  
**Information Technology:** Learn systems simulation, use math to predict game results (timing, distance, calories, etc.), use spreadsheets to estimate/track results, use Scratch to simulate exergame to visualize concepts and calculate results. |
| Day 3 | **Fitness activities:** Participate in and observe various fitness activities.  
**Automation technology:** Discuss game safety, number systems, math functions, logic programming using counters and timers. Use flowchart-based control programming methods, create a user interface.  
**Design and manufacturing technology:** Learn computer-aided design (CAD), use CAD to develop game layout and design game components, (brackets, sensor holders, etc.).  
**Math and science for exergame development:** Explore the relevance of math and science in designing and creating fitness games. Practice using this knowledge in game design & development as well as fitness tracking. |
| Day 4 | **Fitness activities:** Participate in and observe various fitness activities.  
**Prototype game design and development:** Teachers from different schools will work through the same processes in teams that will model the middle school students’ teams in the afterschool program. Under the guidance of the TECHFIT team and student support staff the teacher teams will:  
- review the game criteria,  
- brainstorm exergame ideas,  
- use spreadsheets to compare best ideas and calculate expected results,  
- identify game components needed (I/O devices, fixtures, brackets, tubing, cardboard, etc.),  
- create Scratch simulations,  
- use CAD tools to design actual layout as well as game components. |
| Day 5 | **Fitness activities:** Participate in and observe various fitness activities.  
**Prototype game implementation:** Under the guidance of the TECHFIT team and student support staff, the teacher teams (from day 4) will  
- assemble their unique exergame,  
- program their exergame,  
- test their game, and  
- analyze and compare actual game results with predicted results.  
Teachers will showcase their exergames by having other teams play their games.  
**Game and toolkit review:** Discuss enhancements for toolkit.  
**Afterschool program:** Share after school student team ideas. Define criteria, share challenges in implementing an afterschool program, and use team problem solving. |
| Day 6 | **Fitness activities:** Participate in and observe various fitness activities.  
**Expanding TECHFIT:** Learn how to contribute to the web community & promote cyber-learning in their students.  
**After-school program development:** Develop and present information to share how they envision implementing the after-school program at their schools, recruiting students, getting community involvement, publicizing program, getting recognition for students’ accomplishments. |