SS9004 Track and Field

Learning Objective
This course aims to provide NTU students with the basic sports science knowledge and skills of running, jumping and throwing so as to execute and appreciate Track & Field events. Based on a systematic and hands-on approach to this course, the students will have an enjoyable time learning how to execute events such as long jump, hurdles, sprints, high jump, javelin and discus throw. This course includes the principles of training and five core bio-motor abilities so as to equip the students with the fundamental skills and knowledge to design his/her own training program.

Content

<table>
<thead>
<tr>
<th>Week</th>
<th>Contents</th>
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</table>
| 1    | Introduction to Track and Field  
|      | Brief introduction to Track and field Events  
|      | Basic Principles of training  
|      | Structure and design of training session that involves the concepts of warm up and cool-down (include flexibility)  
|      | Basic skill and running movements  
|      | Basic skill of sprint movements, focus on: posture, arms swing, contact on the ground |
| 2    | Sprint and Relays  
|      | Introduction to bio-motor abilities  
|      | Health benefit of muscular fitness/strength  
|      | Definition of speed, agility and coordination  
|      | Performance Limiting factors of speed  
|      | Methods to develop speed  
|      | Health benefit through improvement in speed, agility & coordination  
|      | Speed, Acceleration maximal speed concepts  
|      | Baton passing techniques in relays : 4x100m & 4x400m relays  
|      | In-coming & out-going runners  
|      | Relays zones : acceleration and exchange zone |
| 3    | Hurdles  
|      | Technical analysis (video)  
|      | Phases: take off, fly and landing phase.  
|      | Legs movements during the different phases  
|      | Arms action during the different phases.  
|      | Concepts of rhythm in hurdles: 5/4/3 steps  
|      | Lead and Trail leg movements.  
|      | Arms swing action  
|      | Selection of lead hurdling leg |
| 4    | Long Jump (Horizontal Jump/Hang Technique)  
|      | Technical analysis (video)  
|      | Run –up, Take-off, Fly and Landing phase  
|      | Legs movements during the different phases  
|      | Arm action during the different phases  
|      | Run-up : Rhythm in the approach  
|      | Take off phase: Body position leg action during take off (Contact on the ground)  
|      | Arms and Swing leg action  
|      | Fly phase (Hang Technique)  
|      | Landing |
| 5    | High Jump (Vertical Jump): Fosbory flop Technique  
<p>|      | Technical analysis (video) |</p>
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<th>Section</th>
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<tbody>
<tr>
<td>Run–up, Take off, Fly and Landing phase</td>
<td>Leg movements during the different phases. Arm action during the different phases. Run-up: Rhythm in the approach. Take off phase: Body position at take off. Arm and swing leg action. Take off leg action and contact on the ground.</td>
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<tr>
<td>Vertical phase</td>
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<tr>
<td>6</td>
<td>Importance of strength development. Develop different types of strength. Health Benefit through development of strength. Exercises/training methods to develop strength. Safety precautions when doing strength training.</td>
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<td>7</td>
<td>Competition Rules. Introduction of international rules and regulation of track and field events. Rules &amp; regulations in Sprint races, Long Jump, High Jump, Hurdles, Javelin throws and discus throw. Friendly competition and officiating in Track and Field events. During the practical session, the students will have a friendly internal competition where some will be officiating and some will be competing in different track and field events.</td>
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<tr>
<td>10</td>
<td>Combined events in Track and Field. Main bio-motor abilities required in each event in heptathlon and decathlon.</td>
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<tr>
<td>11</td>
<td>Practical assessment.</td>
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<tr>
<td>12</td>
<td>Written Test.</td>
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**Learning Outcomes**

Students will be able to:

- display competencies in executing basic techniques and skills associated with some track and field events.
- develop basic skills and techniques to improve one’s running posture and take-off position for different jumps.
- appreciate track and field events by applying sports science knowledge to explain the execution of the events.
• apply basic principles of training and five bio-motor abilities to design his/her training program.

Student Assessment
Students will be assessed by:

a. Continuous Assessment (100%)
   i. **Professional Qualities.** Students are assessed for their participation in class and general behavior. (10%)
   ii. **Practical Assessment #1.** Students will be assigned one of the following: 1) Sprint relay. Students work in pairs to execute relay change over. The other pair evaluates the execution. 2) Starting block with 30m run. 3) Sprints hurdles with three-step rhythm. For 2) & 3), it is an individual execution with the other student evaluating the execution. (30%)
   iii. **Practical Assessment #2.** Students will be assigned one of the following: 1) Javelin, 2) Discus, 3) Long Jump, 4) High Jump It is an individual execution with the other student evaluating the execution. (30%)
   iv. **Written Test.** The written test will cover material discussed throughout the duration of the course, including any recommended reading. (30%)

Textbooks/ References
Vern Gambetta (2007) *Athletic development, the art & science of functional sports conditioning*, human kinetics


Hans-Peter Thumm (2009), *Athletics I, Primary and Lower Secondary Schools*


Jack H.Wilmore & David L. Costill *Physiology of sport and exercise,* Human Kinetics