WHAT IS CLAIMED is:

1. A system for providing mission-based cyber-threat training to a student against an opponent comprising:

a student station comprising a processor, a video display and a student input device;

a system server comprising a system server processor and a system server memory, said system server in communication with said student station over an interface;

a database of training missions stored in association with said at least one system server;

a mission resource database of mission resources including virtual tools, virtual network components and network components;

a trainer station comprising a processor, a video display and a trainer input device, the trainer station connected to the system server and communicating with the student station;

a trainer interface presented at the trainer station, the trainer interface presenting a duplicate of at least a portion of information presented at the student station to provide to a trainer a real-time view of activity of a student on the student station;

a game server which is configured to receive input from the student station or from the trainer station of a selected one of the training missions stored in the database of training missions;

non-transitory machine-readable code stored in said system memory and executable by said system processor of said system server to implement, in the following order:

A) a mission preparation phase comprising the presentation of information to said student via said player station to prepare the student for the selected training mission;

B) a mission execution phase in which the training mission is implemented, said training mission comprising a virtual mission environment created by the selected training mission and mission resources, the training mission including parameters that are randomized each time the training mission is created, and further configured to provide an in-mission interface to monitor student progress and changes in the mission, including based upon inputs received from said student during said training mission, the virtual mission environment comprising one or more virtual elements comprising one or more of a virtual network and a virtual system, a virtual device and a virtual tool for use by the game server in implementing said selected training mission as a game, said game server configured to cause said at least one student station to display information regarding said virtual mission environment to said student; and

C) an assessment phase configured to provide an assessment to the student via the student station of an outcome of the mission.

2. The system of claim 1, wherein in the mission preparation phase, the student is presented with a video associated with the selected mission.

3. The system of claim 2, wherein the video present information regarding one or more of: 1) a mission backstory; 2) a mission order including one or more objectives, tools, rules of engagement,

and mission intelligence; 3) rules of engagement; 4) intelligence about threat actors that might be encountered during the mission; 5) team set-up for the mission; 6) skills required for the mission; 7) cyber games to play prior to the mission; 8) tools requested for the mission; and 9) quizzes to take to verify mission understanding and/or tool qualifications for the mission.

4. The system of claim 3, wherein the mission order comprising at least one of: a) a situation including mission events, general network information for the mission, adversaries of interest for the mission, and cyber threats to expect during the mission, b) mission detail, c) mission execution, e) mission service and support including what the student is provided with and where the student enters the mission, and e) mission command and control including chain of command and means of communication for the mission.

5. The system of claim 1, wherein in the mission preparation phase comprises presentation of a battleroom to the student via the student station, the battleroom configured as training environment for the selected mission.

6. The system of claim 1, wherein the mission execution phase is configured to present at least one of: 1) objectives to be performed on the mission; and 2) an in-game artificial intelligence advisor to support the student or inject information to the student during the mission.

7. The system of claim 1, wherein the mission execution phase comprises storing a student profile comprising: a) a student background, wherein said student background is correlated to one or more of expertise, student age, student gender, student education, student cyber skills or certifications, student current job, and information associated with the student's specific knowledge, skills and abilities gained in training, and b) mission play information that can be utilized in future mission assessments.

8. The system of claim 1, wherein the mission execution phase introduces variability into the selected mission each time the selected mission is implemented.

9. The system of claim 8, wherein variability is introduced into the selected mission by changing elements used in the selected mission.

10. The system of claim 1, wherein the mission execution phase further comprises defining a mission scope of play, a mission environment, a threat actor, and selecting mission elements.

11. The system of claim 10, wherein the scope of mission play is defined based on one or more of: student knowledge, student skills and abilities, mission tasks, mission conditions, mission standards, mission offense/defense tactics, and/or single or team mission training.

12. The system of claim 10, wherein the mission environment is defined based on one or more of: a mission domain including infrastructure; mission terrain including one or more of business processes, systems emulated, user behavior and data; and/or enterprise IT comprising one or more of types of computers, operating systems, services allowed, defense posture, cybersecurity tools and processes used in the mission.

13. The system of claim 10, wherein the threat actor is selected based on evaluating or selecting one or more of: emulated threat actor tactics, techniques, procedures (TTPs); adversary goals including confidentiality, integrity, and availability; and scenario context and threat intelligence information.

14. The system of claim 10, wherein the mission elements are selected based on evaluating or selecting one or more of: a network diagram and key terrain of the mission; student tasks, conditions, and standards of the mission; variability of the mission; artificial intelligence requirements of the mission; and student artifacts including the mission order and mission rules of engagement.

15. The system of claim 1, wherein the assessment phase presents the user with an assessment scene via a user interface.

16. The system of claim 15, wherein the assessment scene includes a depiction of the network used in the selected mission.

17. The system of claim 16, wherein the assessment scene further includes a list of mission objectives, a set of control buttons and a time slider allowing the student to replay mission events.

18. The system of claim 16, wherein in the assessment scene the student and/or trainer can view a timeline of the student inputs and mission events by highlighting a relevant network element in an assessment network map.

19. The system of claim 17, wherein in the assessment scene mission objectives in the list of mission objectives are initially all a same color, and individual mission objectives change color when the corresponding mission objective is achieved or denied.

20. The system of claim 14, wherein the assessment phase comprises presentation to the student of at least one of: skill points, badges and a mission score to the student.