

## Project Plan and Schedule for Professional Development

Objective	Activities	Schedule*
1. Assessment of the level of knowledge of 100% of the participants with regards to the use of equipment and integration of technology to the curriculum	<ul style="list-style-type: none"> <li>• Administration of an online need assessment. The information gathered will be used to make an analysis of needs with regards to equipment use and integration of technology to the curriculum <b>(Figure 1- Estudio de Necesidades: Uso e Integración de la tecnología para el proceso de la enseñanza).</b></li> <li>• Analysis of the information and classification of the participants in accordance to the level of knowledge/skills in computer, mobile device, and software use. The participants will be classified as beginner, intermediate, or advanced user.</li> <li>• A random group of 105 teachers will be selected to validate the accuracy of the online assessment (15 teaches per region).</li> <li>• Issue a report to the DEPR on the results of the analysis of training needs.</li> </ul>	<p>August 2019, 2020, 2021</p> <p>September 2019,2020,2021</p> <p>September 2019</p> <p>October 2019</p>
2. Develop a plan to address the training needs identified for 100% of the teachers on the subjects of laptop, tablet, and integration of technology to the curriculum.	<ul style="list-style-type: none"> <li>• Implementation of a Customer Resource Management (CRM) to keep track of every individual teacher training needs and progress in accordance to the plan <b>(Figure 2).</b></li> <li>• Inform and validate the analysis of training needs for teacher with the schools Directors.</li> <li>• Coordinate with school Directors the training and services the teachers will be receiving according to their individual training plan. Inform the school coordinator for coordination of services</li> <li>• Identify instructional learning teacher by school.</li> <li>• Share and discuss with the teachers the results of their assessments and their individualized training plan. The teacher will receive information of the services to be received and the person who will be coordinating the delivery of those services.</li> <li>• Systematic, continuous, and sustained treatment for teachers through the CRM by the school coordinator of the region.</li> <li>• Ensure constant communication through the platform between the coordinator and each teacher or group of teachers.</li> </ul>	<p>First trimester of each year. September 2019</p> <p>October 2019, 2020, 2021</p> <p>During the training periods (November to January)</p> <p>During the training periods (November to January)</p>
3. Offer technical assistance (coaching) to 30% of the teachers that demonstrate beginner knowledge on the use of technology.	<ul style="list-style-type: none"> <li>• Identification per school region classified as beginner on technology use.</li> <li>• Offer coaching according to the intervention plan and the knowledge of the teacher.</li> </ul>	<p>September 2019</p> <p>Year 1 - November 2019, Year 2 –October 2020 January 2020, 2021, 2022</p>
4. Train 75% of the teachers on the use of technology according to their level of knowledge	<ul style="list-style-type: none"> <li>• Identify the school’s technological equipment available.</li> <li>• Identify software available at schools.</li> <li>• Coordinate and schedule service to be delivered in the school according to the level of knowledge of the participants and the equipment and software available.</li> </ul>	<p>October 2019</p> <p>October 2019</p>



Objective	Activities	Schedule*
7. Design an online workshop for 100% of the teachers and representative personnel of the seven (7) school regions on how to use the technology and how to integrate technology to the curriculum.	<ul style="list-style-type: none"> <li>• Identify subjects according to the analysis of training needs.</li> <li>• Make observations to the teachers that have advanced technology knowledge, plan collaborative classes to promote technology integration, and record the sessions.</li> <li>• Design and record 6 workshops. Upload the recordings to the platform. (2 per year)</li> </ul>	<p>October 2019 December 2020 and December 2021 January 2020, 2021, 2022</p>
8. Development of instructional material to encourage the integration of technology into the teaching/learning process.	<ul style="list-style-type: none"> <li>• Administer 2 trainings for the development of instructional material.</li> <li>• Provide an outline of the information required on the instructional material.</li> <li>• Enable a platform (Google Drive / Dropbox) to suggest instructional material by level and subject. As well as activities to address the different subgroups.</li> </ul>	<p>January 2020, 2021</p> <p>Second Trimester years 1 and 2</p>
9. Coordinate certifications for 7% of the participants as Google Certified Educators Level 1 y Level 2.	<ul style="list-style-type: none"> <li>• Identify mentor teachers with advanced technology knowledge.</li> <li>• Offer 6 trainings to prepare them for the certification tests. <ul style="list-style-type: none"> <li>○ Level 1</li> <li>○ Level 2</li> </ul> </li> <li>• Coordinate and schedule the certification tests. <ul style="list-style-type: none"> <li>○ Level 1</li> <li>○ Level 2</li> </ul> </li> </ul>	<p>September 2019</p> <p>2 in February 2021, 1 in March 2021 2 in February 2022 and 1 in March 2021</p> <p>April 2021 April 2022</p>
10. Provide to 100% of schools the Classroom Content Cloud (C3) for the storage and administration of curriculum content.	<ul style="list-style-type: none"> <li>• Install the C3 in each one of the schools.</li> <li>• Training on use and integration of the C3 to the curriculum.</li> </ul>	<p>Second Trimester– November 2019 a February 2020</p>
11. Keep records of the effectiveness of the implementation of the project, evidenced by change of	<ul style="list-style-type: none"> <li>• Issue of quarterly reports on the effectiveness of the Project.</li> </ul>	<p>During three years of the project October, January, and Abril</p>
	<ul style="list-style-type: none"> <li>• Issue observations on classrooms to keep record of the use and integration of the technology by the teachers and students.</li> </ul>	<p>December 2020 and December 2021</p>

<b>Objective</b>	<b>Activities</b>	<b>Schedule*</b>
pedagogical practices of the teachers and improvement in student performance.	<ul style="list-style-type: none"><li data-bbox="423 247 1240 310">• Issue articles that document the change in pedagogical practices as a result of the integration of technology in the teaching process.</li></ul>	Third trimester March 2020, 2021, 2022

Figure 1



## Estudio de Necesidades: Uso e integración de la tecnología para el proceso de enseñanza

Categorías	Núm. de criterios	Puntuación total	Puntuación obtenida
I. Información de la escuela	7	n/a	n/a
II. Datos demográficos	11	3	
III. Disponibilidad de equipo	3		
IV. Uso de equipo	8		
V. Uso de programado	11		
VI. Conocimiento de los sistemas operativos	17		
VII. Integración de la tecnología al proceso de enseñanza	16		
<b>TOTALES</b>			

### Nivel de proficiencia\*

\_\_\_\_\_ Básico      \_\_\_\_\_ Intermedio      \_\_\_\_\_ Avanzado

#### Informe narrativo:

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Firma del Maestro(a)

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Firma del evaluador(a)

I. Información de la escuela			
Nombre:		Código:	
Email:		Teléfono:	
Región Escolar: <input type="checkbox"/> Humacao <input type="checkbox"/> Caguas <input type="checkbox"/> San Juan <input type="checkbox"/> Bayamón <input type="checkbox"/> Arecibo <input type="checkbox"/> Ponce <input type="checkbox"/> Mayagüez Pueblo:			
Indique su rol: <input type="checkbox"/> Facilitador(a) <input type="checkbox"/> Superintendente <input type="checkbox"/> Supervisor(a) <input type="checkbox"/> Maestro(a) <input type="checkbox"/> Director(a) de programa <input type="checkbox"/> Otro:			
II. Datos demográficos			
Nombre:			
Teléfono:		Email:	
Género: <input type="checkbox"/> Femenino <input type="checkbox"/> Masculino <input type="checkbox"/> Otro: _____		Edad: <input type="checkbox"/> 22-31 <input type="checkbox"/> 31-41 <input type="checkbox"/> 42-51 <input type="checkbox"/> 52-61 <input type="checkbox"/> 62-71 <input type="checkbox"/> 72-o más	
Escolaridad: <input type="checkbox"/> Grado asociado <input type="checkbox"/> Bachillerato <input type="checkbox"/> Maestría <input type="checkbox"/> Doctorado <input type="checkbox"/> Certificación (Indique cual):			
Materia que enseña:		Grado que enseña:	
Años de experiencia:		Idioma(s) que domina: <input type="checkbox"/> Español <input type="checkbox"/> English <input type="checkbox"/> French <input type="checkbox"/> Otro:	
Certificaciones:			
III. Disponibilidad de equipos			
Indique escribiendo una equis (X), en cuál de los siguientes lugares <b>tiene disponible</b> una computadora / tablet. <input type="checkbox"/> En casa <input type="checkbox"/> En la oficina <input type="checkbox"/> En el salón <input type="checkbox"/> Biblioteca Escolar <input type="checkbox"/> En casa de un amigo(a) <input type="checkbox"/> Celular <input type="checkbox"/> Centro Cibernético <input type="checkbox"/> Otro:			
Indique escribiendo una equis (X), en cuál de los siguientes lugares <b>tiene disponible</b> acceso a internet. <input type="checkbox"/> En casa <input type="checkbox"/> En la oficina <input type="checkbox"/> En el salón <input type="checkbox"/> Biblioteca Escolar <input type="checkbox"/> En casa de un amigo(a) <input type="checkbox"/> Celular <input type="checkbox"/> Centro Cibernético <input type="checkbox"/> Otro:			
¿Cuenta con un celular con acceso a internet? <input type="checkbox"/> Sí <input type="checkbox"/> No			
IV. Uso de equipo			
Instrucciones: Evaluar en qué medida las características de las TIC mencionadas a continuación pueden favorecer el proceso de enseñanza y aprendizaje: (Marque con una X sabiendo que 1: nada, 2: poco, 3: bastante y 4: mucho)			
1 2 3 4			
1. Interactividad			
2. Individualización de la enseñanza			
3. Variedad de códigos de información (texto, sonido, imágenes, etc.)			
4. Aprendizaje cooperativo			
5. Aprendizaje autónomo			
6. Alta motivación			
7. Facilidad de uso			
8. Flexibilidad para actualizar información			
V. Uso de programados			
1. Valore la frecuencia con la que usa los siguientes programas:		Nada	Poco
		Mucho	

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	(0)	(1)	(2)
(a) Procesador de texto (Word, Amipro, AbiWord, etc.)			
(b) Programa de presentaciones (PowerPoint, Corel, Presentación, etc.)			
(c) Bases de datos (Access, MySQL, FileMaker, etc.)			
(d) Hojas de cálculo (Excel, Calc, SPSS, etc.)			
(e) Navegadores			
(f) Correo electrónico			
(g) Editores HTML (FrontPage, Dreamweaver, etc.)			
(h) Diseño gráfico			
(i) Chat			
(j) Herramientas para el trabajo colaborativo (BSCW, etc.)			
(k) Motores de búsqueda			

### VI. Conocimiento de los sistemas operativos

Indique escribiendo una equis (X) en la columna correspondiente, cuál de las siguientes herramientas **conoce**:

Herramientas		Si (1)	NO (0)
Nombre	Descripción		
1. Voki	Permite crear un video utilizando una representación gráfica de tu persona con el propósito de que informe de un tema en particular.		
2. VoiceThread	Se utiliza para crear conversaciones, que incorpora voz, imagen, documentos y videos.		
3. Evernote	Permite anotar y almacenar cualquier tipo de archivos, notas, captura de imágenes, websites, PDF.		
4. Comic Brush	Permite crear y compartir un cómic utilizando cualquier combinación de dibujos, fotos y obras de artes.		
5. Socrative	Permite administrar y diseñar pruebas cortas con ejercicios de correspondencia, alternativas múltiples y preguntas abiertas.		
6. Timeline	Permite crear y compartir líneas de tiempo (Ej. Representar la evolución del concepto numeración).		
7. Animoto	Permite crear videos que integran imágenes y música		
8. Delicious y Diigo	Permiten crear diferentes categorías para almacenar información y/o documentos.		
9. Dropbox	Permite crear una carpeta para compartir documentos. Te permite acceder desde cualquier equipo (computadora, celular o Tablet).		
10. Jing Project	Ayuda a capturar lo que se presenta en la pantalla (Ej. Imágenes, gráficas)		
11. Prezi	Permite crear presentaciones en línea		
12. Storyteller	Permite crear una historia integrando multimedia (videos y fotos).		
13. Sway	Permite hacer presentaciones y es parte de Microsoft Office.		
14. Teams	Aplicación que permite la colaboración en equipo a través de chats, reuniones, notas y adjuntos. Es parte de Office 365.		
15. Forms	Es una plataforma online para la creación de encuestas. Es parte de Office 365.		
16. Class Notebook	Permite al aula crear un cuaderno digital del aula. Este cuaderno incluye 3 tipos de sub-cuadernos: cuaderno de estudiante, repositorio de contenido, espacio de colaboración.		
17. SharePoint	Es una plataforma web de colaboración que trabaja en integración con Microsoft Office. Permite la gestión de documentos y provee un sistema de almacenamiento. Es altamente configurable y su uso varía dependiendo de la organización.		

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## VII. Integración de la tecnología al proceso de enseñanza

- \_\_\_ 1. ¿Utilizas las TIC en la materia que enseña?
- Sí
  - No
- Si su respuesta es Sí, indique la frecuencia con la que utiliza las TIC en el aula: Diario  
Semanalmente Trimestral
- \_\_\_ 2. ¿Considera que las TIC pueden ser un recurso importante para mejorar la enseñanza?
- Sí
  - No
- \_\_\_ 3. ¿De qué manera te gustaría que la tecnología te ayude en el salón? (Señala las dos opciones principales)
- Obtención de materiales didácticos Atención a la diversidad.  
Comunicación con los padres Refuerzo de contenidos básicos.  
El mantenimiento de la disciplina en el aula el tratamiento individualizado de estudiante.  
La mejora de la atención en clase.  
La motivación de los estudiantes por la interdisciplinariedad de la asignatura.
- \_\_\_ 4. ¿Estaría dispuesto a recibir capacitación en aquellas áreas que aún requieren más práctica?
- Sí
  - No

Escriba una equis (X) en el espacio correspondiente según lo establecido en la premisa.

Estaría interesado(a) en realizar las siguientes actividades:	Si 2	Tal vez 1	No 0
5. Diseñar pruebas cortas o exámenes para ser administrados en línea.			
6. Desarrollar personajes (Avatar) que les informen a las demás personas acerca de un tema en particular (Ej. fracciones).			
7. Crear diferentes escenas y aplicarle texto para crear una tirilla cómica en línea.			
8. Conocer acerca de herramientas gratuitas que permiten almacenar cualquier tipo de archivo para futuras referencias (ej. Fuentes de referencia para la redacción de un ensayo).			
9. Diseñar videos con imágenes de su preferencia			
10. Compartir los videos creados en diversos lugares (Ej. Facebook, Twitter, correo electrónico).			
11. Poder acceder a archivos de referencia desde el teléfono celular o Tablet.			
12. Acceder en línea a las contestaciones de las pruebas cortas sin tener que corregirlas.			
13. Recibir retro comunicación acerca de un video creado sin tener acceso a las personas que lo comentan (Ej. personas que están en otro pueblo o país).			
14. Poder crear una historia con videos y fotos (Ej. Crear la historia del número cero).			
15. Desarrollar presentaciones en línea y accederlas desde cualquier equipo.			
16. Recopilar imágenes para construir <i>flash cards</i> sobre las figuras geométricas.			

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Figure 2



## Plan de Desarrollo Individualizado

Perfil del Maestro(a):

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Fortalezas identificadas:

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Áreas a desarrollar:

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Formato de Plan de acción:

Área a desarrollar (o indicador)	Actividades / Servicio	Evaluación	Fecha	Producto (qué se quiere lograr)

Firma del maestro(a): \_\_\_\_\_ Fecha: \_\_\_\_\_

Firma del Coach: \_\_\_\_\_

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Figure 3

## MUESTRA DE HERAMIENTAS PARA LA INTEGRACIÓN TECNOLÓGICA

#	Nombre de la página	Descripción	Enlace
1.	Empatico.	Empatico ayuda a que los profesores y estudiantes exploren el mundo por medio de experiencias que despiertan la curiosidad, la amabilidad y la empatía. Combinamos transmisiones de video en vivo con actividades diseñadas para fomentar conexiones significativas entre los estudiantes de 7 a 11 años.	<a href="https://empatico.org/">https://empatico.org/</a>
2.	Voki	Herramienta que te permite crear un avatar personalizado.	<a href="http://www.voki.com/">http://www.voki.com/</a>
3.	Design Make Teach	Design Make Teach is a blog about MAKING in the classroom. MAKING is a process that engages students in thinking, making and sharing.	<a href="https://designmaketeach.com/category/3d-models/">https://designmaketeach.com/category/3d-models/</a>
4.	Design Squad Global	Design Squad Global permite a los niños de la escuela intermedia resolver problemas del mundo real y comprender el impacto de la ingeniería en un contexto global. Renovado semanalmente con desafíos, videos y actividades, el sitio web es uno de los únicos lugares en la web donde los niños pueden compartir sus ideas de ingeniería con otros niños.	<a href="http://pbskids.org/designsquad/">http://pbskids.org/designsquad/</a>
5.	Engineering 4 kids	Los niños tienen una curiosidad natural que se presta a la ciencia, la tecnología, las matemáticas y la ingeniería. En Engineering For Kids, inspiran a los niños de 4 a 14 años para que desarrollen su deseo innato de respuestas al explorar los conceptos de ingeniería de una manera divertida y práctica.	<a href="https://www.engineeringforkids.com/">https://www.engineeringforkids.com/</a>
6.	Storyboard That	Recursos para maestros y ejemplos de storyboards para clases de ciencia, tecnología, ingeniería y matemáticas. Encontrará ideas creativas de narración digital y planes de lección para sus clases STEM. A los estudiantes les encantará crear sus propios diagramas, explicando los problemas de las palabras y haciendo comics de ciencia.	<a href="http://www.storyboardthat.com/es/planes-de-lecciones-de-educaci%C3%B3n-para">http://www.storyboardthat.com/es/planes-de-lecciones-de-educaci%C3%B3n-para</a>
7.	Teach Engineering	TeachEngineering es una colección de bibliotecas digitales en la que se pueden realizar búsquedas y que se compone de currículos de ingeniería basados en estándares para que los educadores de K-12 los utilicen para hacer que la ciencia y las matemáticas aplicadas cobren vida a través del diseño de ingeniería en los entornos de K-12. La colección TeachEngineering proporciona a los educadores acceso * gratuito * a un creciente recurso curricular de actividades, lecciones, unidades, desafíos de creadores y rociados para usar en entornos de educación informal.	<a href="https://www.teachengineering.org/">https://www.teachengineering.org/</a>
8.	Try Engineering	TryEngineering.org es un recurso de educación en ingeniería preuniversitaria dirigido a docentes y estudiantes. Nuestro objetivo es aumentar el interés en las carreras de ingeniería, mejorar el acceso a recursos educativos de alta calidad y mostrar a los estudiantes cómo la ingeniería puede ser parte de su futuro.	<a href="http://tryengineering.org/?language=es">http://tryengineering.org/?language=es</a>
9.	Scratch	Con Scratch, puedes programar tus propias historias, juegos y animaciones interactivas, y compartir tus creaciones con otros en la comunidad en línea. Scratch ayuda a los jóvenes a aprender a pensar creativamente, razonar sistemáticamente y trabajar en colaboración, habilidades esenciales para la vida en el siglo XXI.	<a href="https://scratch.mit.edu/">https://scratch.mit.edu/</a>
10.	Designing for Creative Play	Designing for Creative Play se basa en darle vida a tu imaginación ayudándote a hacer cosas que te interesan.	<a href="https://www.ericosenbaum.com/">https://www.ericosenbaum.com/</a>
11.	Chrome Music Lab	Chrome Music Lab es un sitio web que hace que el aprendizaje de música sea más accesible a través de experimentos divertidos y prácticos.	<a href="https://musiclab.chromeexperiments.com/Experiments">https://musiclab.chromeexperiments.com/Experiments</a>
12.	Constructing Modern Knowledge	Constructing Modern Knowledge es un instituto para educadores dedicados a la creatividad, la colaboración y la informática. Los participantes tendrán la oportunidad de participar en el desarrollo intensivo de proyectos informáticos con compañeros y un profesorado de clase mundial. Oradores invitados y eventos sociales inspiradores completan el fantástico evento.	<a href="http://constructingmodernknowledge.com/">http://constructingmodernknowledge.com/</a>
13.	Comic Life	Crear tirillas cómicas o historietas con fotografías y dibujos.	<a href="http://comiclif.com/">http://comiclif.com/</a>
14.	LanSchool	Programa para monitorear, crear encuestas, pruebas y mostrar una presentación	<a href="https://www.lenovosoftware.com/lanschool">https://www.lenovosoftware.com/lanschool</a>
15.	News Maker	Programa para crear un noticiero en donde se puede reforzar la escritura y la lectura.	<a href="https://www.newsmaker.tv/accounts/login">https://www.newsmaker.tv/accounts/login</a>
16.	Voicethread	Herramienta que se utiliza para crear conversaciones, que incorpora voz, imagen, documentos y videos.	<a href="http://voicethread.com/">http://voicethread.com/</a>

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#	Nombre de la página	Descripción	Enlace
17.	Evernote	Aplicación que permite anotar y almacenar cualquier tipo de archivos, notas, captura de imágenes, websites, PDF.	<a href="http://www.evernote.com/">http://www.evernote.com/</a>
18.	Timetoast	Mediante ésta se puede crear y compartir líneas de tiempo.	<a href="http://www.timetoast.com/">http://www.timetoast.com/</a>
19.	Tagxedo	Herramienta para crear nubes de palabras o Tags (word cloud). Permite cambiar el contenido y forma de nuestra nube de palabras, la dirección de las mismas, el tipo de letra, color y aplicar patrones.	<a href="http://www.tagxedo.com/">http://www.tagxedo.com/</a>
20.	Wordle	Trabaja con la representación visual de texto.	<a href="http://www.wordle.net/">http://www.wordle.net/</a>
21.	Toondo	Sirve para crear cómics.	<a href="http://www.toondoo.com/">http://www.toondoo.com/</a>
22.	Issuu	Portal gratuito que permite crear una biblioteca en línea donde los usuarios pueden publicar y compartir sus archivos convirtiéndolos en atractivas publicaciones como libros o revistas interactivas.	<a href="http://issuu.com/">http://issuu.com/</a>
23.	Jingproject.com	Screencasting – Ayuda a capturar lo que se presenta en la pantalla.	<a href="http://www.techsmith.com/jing/">http://www.techsmith.com/jing/</a>
24.	Audacity	Aplicación para grabar y editar audio.	<a href="http://audacity.sourceforge.net/">http://audacity.sourceforge.net/</a>
25.	Animoto	Ideal para producir videos que incorporan imágenes y música.	<a href="http://animoto.com/">http://animoto.com/</a>
26.	MS Photostory	Nos ayuda a crear video con imágenes digitales. Se puede añadir narración.	<a href="https://www.microsoft.com/en-us/download/details.aspx?id=11132">https://www.microsoft.com/en-us/download/details.aspx?id=11132</a>
27.	Storybird	Permite crear cuentos de forma colaborativa.	<a href="http://www.storybird.com">http://www.storybird.com</a>
28.	EduGlogster	Permite crear afiches interactivos donde puede expresarse de una manera creativa utilizando imágenes, videos, audio, texto y gráficas. Es también una red social donde puede interactuar con la comunidad escolar.	<a href="http://www.edu.glogster.com">http://www.edu.glogster.com</a>
29.	Flickr	Permite almacenar, ordenar, buscar y compartir fotografías y videos en línea.	<a href="http://www.flickr.com">http://www.flickr.com</a>
30.	Twiducate	Ayuda a crear y configurar una red social privada con la comunidad escolar.	<a href="http://www.twiducate.com">http://www.twiducate.com</a>
31.	SpicyNodes	Permite organizar la información en forma de nodos conectados para hacer mapas de ideas, organizar conceptos, presentar jerarquías de datos, demostrar relaciones entre entidades.	<a href="http://www.spicynodes.org/">http://www.spicynodes.org/</a>
32.	Padlet	Permite crear un mural en el que se pueden colgar notas, imágenes, videos o direcciones web.	<a href="http://www.wallwisher.com">http://www.wallwisher.com</a>
33.	Symbaloo	Permite almacenar y compartir direcciones de la Web.	<a href="http://www.symbaloo.com">http://www.symbaloo.com</a>
34.	Bubbl.us	Herramienta para crear mapas conceptuales en línea.	<a href="http://www.bubbl.us">http://www.bubbl.us</a>
35.	Xtranormal	Permite crear y publicar videos o historias cortas en 3D.	<a href="http://www.xtranormal.com">http://www.xtranormal.com</a>
36.	Classtools	Ayuda a crear juegos interactivos educativos, actividades y diagramas.	<a href="http://www.classtools.net">http://www.classtools.net</a>
37.	Penzu	Herramienta para crear un diario o bitácora de forma privada.	<a href="https://penzu.com/">https://penzu.com/</a>
38.	Flashcard Machine	Tanto los profesores como los estudiantes pueden crear tarjetas didácticas en pantalla para evaluar vocabulario, ecuaciones matemáticas, idiomas extranjeros y más. Está disponible para iPad, iPhone y iPod touch.	<a href="https://www.flashcardmachine.com/">https://www.flashcardmachine.com/</a>
39.	Teacher Tube	TeacherTube comparte videos educativos. Es un sitio para proporcionar desarrollo profesional en cualquier momento y en cualquier lugar con maestros que enseñan maestros. Además, es un sitio donde los maestros pueden publicar videos diseñados para que los estudiantes los vean con el fin de aprender un concepto o habilidad.	<a href="https://www.teachertube.com/">https://www.teachertube.com/</a>
40.	School Tube	Es un entorno seguro y moderado donde los estudiantes pueden publicar videos de producción propia para uso en el aula: desde el educativo (una presentación cívica o una clase de álgebra) y práctico (anuncios de la mañana) hasta la diversión (juego de fútbol de chicas de la noche anterior).	<a href="https://www.schooltube.com/">https://www.schooltube.com/</a>

**Training Plan**  
**Technical Training for OSIATD Field Technicians**

**Global Exchange Education Opportunities**

**P.O. Box 937**

**Manatí, Puerto Rico 00674**

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## **INTRODUCTION**

This training plan, developed by Global Exchange Education Services, is designed to outline the objectives, requirements, strategy, and methodology to be used when providing Technical Training for the OSIATD Field Technicians. The purpose of this training is to train OSIATD Technical Staff on core knowledge to successfully perform on their functions as IT Support. This training will also prepare OSIATD Technical Staff for certifications on CompTIA A+, Network+, and Security+.

## **NEEDS AND SKILLS ANALYSIS**

Global Exchange Education Opportunities, Inc. (GEEO) is proposing a training curriculum for the OSIATD Field Technicians to reinforce understanding and familiarity with subjects and tools related to IT Support. To develop this training Global Exchange Education Opportunities has consulted with experts in the IT Support field to develop a robust program to train OSIATD Field Technicians. The target audience for this training is OSIADT's Field and Data technicians. The learning objectives for this training are:

- Understanding of binary systems.
- Ability to assemble a computer from scratch.
- Choose and install operating systems.
- Understanding of the Internet, how it works, and its impact.
- Understanding of app development and backend operations.
- Utilization of common troubleshooting methodologies.
- Understand the computer network five-layer model.
- Understand all standard protocol involved with TCP/IP communications.
- Knowledge of powerful network troubleshooting tools and techniques.
- Understand network services like DNS and DHCP.
- Knowledge on how to navigate the Windows and Linux filesystems using a graphical user interface and command line interpreter.
- Knowledge on how to set up users, groups, and permissions for account access.
- Ability to install, configure, and remove software on Windows and Linus operating systems.
- Ability to configure disk partitions and filesystems.

- Understanding how system processes work and how to manage them.
- Work with system logs and remote connection tools.
- Ability to use system knowledge to troubleshoot common issues in an IT Support Specialist role.
- Ability to use best practices for choosing hardware, vendors, and services.
- Understanding how the most common infrastructure services work and how to manage infrastructure servers.
- Ability to manage an organization's computers and users using the directory services, Active Directory, and OpenLDAP.
- Procedures for backing up an organization's data and ability to recover an IT infrastructure in the case of a disaster.
- Ability to use systems administration knowledge to plan and improve processes for IT environments.
- Understanding how various encryption algorithms and techniques work and their benefits and limitations.
- Knowledge of various authentication systems and types.
- Understanding of the difference between authentication and authorization.
- Ability to evaluate potential risks and recommend ways to reduce risk.
- Ability to make recommendations on how to best secure a network.
- Ability to help others understand security concepts and protect themselves.

#### **REQUIREMENTS TRACEABILITY**

GEEO Field Technician Training Program will provide OSIATD's Field Technicians with the tools needed to perform their role as IT Support Specialist on a world class level and help them prepare for the CompTIA A+, Network+, and Security+ Certifications. The Field Technician Training Program will train OSIATD's Field Technicians in commonly used concepts, tools, and methodologies of IT Technical Support and IT Operations roles. It will also provide laboratories with practical exercises to teach technicians techniques where applicable. Global Education Exchange Opportunities believes that these learning objectives directly support the Department of Education's goals presented in **the RFP NO: PRDE-OSIATD-FY2018-002.**

## **TRAINING METHODOLOGY**

In order to accomplish the learning objectives of the Field Technician Training Program, a thorough training methodology was developed for the appropriate target audience and skill sets. Training will consist of a five (5) day block of instruction and will include various training materials and scenarios. At the conclusion of the training a test will be administered to ensure mastery of the IT Support and Operations concepts and learning objectives. Training materials will include a 65 slide PowerPoint presentation, handouts on the various IT tools, 1 laboratory session designed to allow the technicians to apply various IT Support and Operations concepts, and a final test to be taken by all technicians. The instructor will teach the IT Support and Operations concepts from the slide presentation. At various intervals during training, the instructor will present scenarios to the technicians who will break into groups to complete and brief their scenario solutions. There will be ample opportunity built into the class for questions and answers as well. Supplemental handouts will be provided to all students which cover the tools used in IT Support and Operations role. These handouts will be discussed in training and technicians will be expected to study and master the concepts included in the handouts prior to the course end exam. The exam will be administered at the end of the final day of training. The exam will consist of ninety (90) questions. To pass a student must answer at seventy (70) questions correctly. A passing grade will earn certification of training completion for the student.

## **TRAINING ENVIRONMENT**

Training will be conducted in the Global Exchange Education Opportunities Training facilities (GEEOTF). The GEEOTF has a seating capacity to accommodate the 40 field technicians. The GEEOTF is fully equipped with a desktop workstation with connectivity to an overhead projector. The GEEOTF also has several white boards and flip charts which are necessary for the various visual aids required for this training event. The GEEOTF is also equipped with teleconference and video teleconference capabilities should the need arise. No food or drinks are allowed in the GEEOTF so ample breaks will be provided to the students throughout the training as well as adequate lunch breaks on each training day. Local area network (LAN) connections are available in the GEEOTF, technicians will be allowed to bring their laptop computers to training. Students are discouraged from answering emails and phone calls on their phones or other mobile devices while training is being conducted.

## TRAINING REFERENCES

There are several references which will be used throughout the five days of Field Technician training. All of these materials will be provided to the students on the first day of training; however, these materials will also be available should students lose or misplace any of the items. The table below provides a list of reference materials, the document and version numbers, formats, and location where the materials will be available.

Reference	Document/Version #	Format	Storage Location
Slide Presentation	OSIATD Field Technician Training/v1.0	PowerPoint Slides	Shared Drive “OSIATD Field Technician Training” Folder
Logic Gates	Logic Gates/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
CPU Cache	CPU Cache/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
<b>Differences between 32-bit and 64-bit CPU architecture</b>	32-bit vs. 64-bit/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
Data Storage	Data Storage/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
Resilient File System (ReFS)	ReFS/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
Chrome RDP, Linux, Mac OS, Windows (Virtual Machines)	VM/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
The Internet of Things article by WIRED	IoT/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
Software Versioning	Software Versioning/v1.0	Printed handout	Shared Drive “OSIATD Field Technician Training” Folder
OSI Network Model	OSI Network Model/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
Ethernet over Twisted Pair technologies	Ethernet-Twisted Pair/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder

Routing Protocol Examples (RIP, EIGRP, OSPF, BGP)	Routing Protocol Examples/v1.0	Printed Handout	Shared Drive "OSIATD Field Technician Training" Folder
Request for Comments (RFC)	RFC/v1.0	Printed Handout	Shared Drive "OSIATD Field Technician Training" Folder
System Ports versus Ephemeral Ports	System Ports vs. Ephemeral Ports/v1.0	Printed Handout	Shared Drive "OSIATD Field Technician Training" Folder
IPv4 Address exhaustion	IPv4 Address Exhaustion/v1.0	Printed Handout	Shared Drive "OSIATD Field Technician Training" Folder
Broadband Protocols (PPP, PPPoE)	Broadband Protocols/v1.0	Printed Handout	Shared Drive "OSIATD Field Technician Training" Folder
WAN Protocols (Frame Relay, HDLC, ATM)	WAN Protocols/v1.0	Printed Handout	Shared Drive "OSIATD Field Technician Training" Folder
IEEE 802.11	IEEE 802.11/v1.0	Printed handout	Shared Drive "OSIATD Field Technician Training" Folder
Netcat	Netcat/v1.0	Printed handout	Shared Drive "OSIATD Field Technician Training" Folder
Test-NetConnection	Test-NetConnection/v1.0	Printed Handout	Shared Drive "OSIATD Field Technician Training" Folder
IPv4 and IPv6 harmony (6in4, Tunnel Setup Protocol, AYIYA)	IPv4+IPv6	Printed Handout	Shared Drive "OSIATD Field Technician Training" Folder
Windows CLI & Unix Bash	Windows CLI & Unix Bash/v1.0	Printed Handout	Shared Drive "OSIATD Field Technician Training" Folder
Size on Disk vs. Folder Size	Size on Disk vs. Folder Size/v1.0	Printed Handout	Shared Drive "OSIATD Field Technician Training" Folder
Notepad++ Supplemental Reading	Notepad++/v1.0	Printed Handout	Shared Drive "OSIATD Field Technician Training" Folder
Windows Powershell	Windows Powershell/v1.0	Printed handout	Shared Drive "OSIATD Field Technician Training" Folder
Windows passwords supplemental reading	Windows Passwords/v1.0	Printed handout	Shared Drive "OSIATD Field Technician Training" Folder

Windows ACL	Windows ACL/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
Windows Special Permissions supplemental reading	Windows Special Permission/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
Windows Software Packages supplemental reading	Windows Software Packages/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
7-Zip and Powershell Zips	7-Zip and Powershell Zips/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
Linux Tar Command	Linux Tar Command/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
Windows Package Dependencies (Dynamic-link library, DLL Hell, Side-by-side Assemblies)	Windows Package Dependencies/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
Linux Package Dependencies (dpkg)	Linux Package Dependencies/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
Windows Package Managers (NuGet, Chocolatey)	Windows Package Manger/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
Linux PPAs	Linux PPAs/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
Windows Installers and Process Monitors	Windows Installers and Process Monitors/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
Windows Devices and Drivers (Plug and Play, Hardware ID, Driver Lookup, Windows Update, local-list of drivers)	Windows Devices and Drivers/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
Linux Devices and Drivers (Device Files, Udev)	Linux Devices and Drivers/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
Windows Update, Linux Update supplemental reading	Windows and Linux Update/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
FAT32 File System supplemental reading	FAT32 File System/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder

Disk Partitioning and Formatting in Windows	Disk Partitioning and Formatting in Windows/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
Mounting and Unmounting a Filesystem in Linux	Mounting and Unmounting a Filesystem in Linux/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
Windows Paging	Windows Paging/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
Linux Swap	Linux Swap/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
NTFS File System (Master File Table, Creating Symbolic Links, Hard Links and Junctions)	NTFS File System/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
Windows Disk Usage and Linux Disk Usage	Windows Disk Usage and Linux Disk/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
Linux Filesystem Repair	Linux Filesystem repair/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
Process Creation and Termination in Windows (taskkill)	Process Creation and Termination in Windows/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
Reading Process Information in Windows and Linux	Reading Process Information in Windows and Linux/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
Windows Signal	Windows Signal/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
Managing Processes in Windows and Linux	Managing Processes in Windows and Linux/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
Resource Monitoring in Windows and Linux	Resource Monitoring in Windows and Linux/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
Remote Connection and Remote File Transfer in Windows	Remote Connection and Remote File Transfer in Windows/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
Virtual Machines	Virtual Machines/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder

Linux Logs	Linux Logs/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
OS Deployment Methods	OS Deployment Methods/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
KVME Switch	KVME Switch/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
IT Infrastructure Services (IaaS, NaaS, SaaS, PaaS, DaaS – Amazon/Jumpcloud/Azure Active Directory)	IT Infrastructure Services/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
Server Operating Systems	Server Operating Systems/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
Remote Access and SSH (Open SSH, Windows Remote Desktop Client, Windows Remote Management, and PuTTY)	Remote Access and SSH	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
FTP Clients (PXE Boot)	FTP Clients/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
BIND/PowerDNS	BIND/PowerDNS/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
DNS and DHCP	DNS and DHCP/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
Chat Communication Services (Paid for chat, Open IM)	Chat Communication Services	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
Email Services (Setup Email Server, Email Protocols)	Email Services/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
File Services	File Services/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
Network File Storage (SMB, NFS server software)	Network File Storage/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder

Print Services (Windows and CUPS printing)	Print Services/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
Web Servers (nginx, Apache HTTP, Microsoft IIS)	Web Servers/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
Database Admin Jobs	Database Admin Jobs/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
Troubleshooting with Developer Tools (Chrome Developer Tools, list of HTTP status codes)	Troubleshooting with Developer Tools/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
Centralized Management (Role-based access control, Chef, Puppet, System Center Configuration Manger)	Centralized Management/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
LDAP format	LDAP format/v1.0	Printed Format	Shared Drive “OSIATD Field Technician Training” Folder
Kerberos	Kerberos/v1.0	Printed Format	Shared Drive “OSIATD Field Technician Training” Folder
Active Directory	Active Directory/v1.0	Printed Format	Shared Drive “OSIATD Field Technician Training” Folder
Group Security Principles	Group Security Principles/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
Features of EFS	Features of EFS/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
DFL and FFL	DFL and FFL/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
Group Policy Troubleshooting	Group Policy Troubleshooting/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
OpenLDAP	OpenLDAP/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
GitLabs Data Recovery	GitLabs Data Recovery/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder

Backup Solutions (Microsoft Backup and Restore, Apple Time Machine, Rsync as a backup utility)	Backup Solutions/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
RAID levels	RAID levels/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
Malicious Software, Network Attacks, DDoS Attacks	Malicious Software, Network Attacks, DDoS Attacks/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
Cryptanalysis	Cryptanalysis/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
Symmetric encryptions	Symmetric encryptions/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
Asymmetric Encryption Attack	Asymmetric Encryption Attack/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
SHA1 Attacks	SHA1 Attacks/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
X.509 Standard	X.509 Standard/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
PGP	PGP/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
Securing Network Traffic (L2TP/IPsec – IETF RFC 3193 ie. OpenVPN)	Securing Network Traffic/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
TPM Attacks	TPM Attacks/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
Authentication and Authorization	Authentication and Authorization/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
Network Hardening Best Practices	Network Hardening Best Practices/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
Promiscuous Mode	Promiscuous Mode/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder

Logging and Auditing	Logging and Auditing/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
Antimalware Protection	Antimalware Protection/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
Disk Encryption	Disk Encryption/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder
Risk in the Workplace	Risk in the Workplace/v1.0	Printed Handout	Shared Drive “OSIATD Field Technician Training” Folder

### **TESTING AND EVALUATION**

At the conclusion of the five-day Field Technician Training Program, all technicians will be given a thirty (90) question test to demonstrate their ability to master various IT Support and Operations concepts. All students must achieve a raw score of at least seventy (70) correct answers. The test will consist of questions pertaining to the following:

- PC hardware and peripherals.
- Mobile device hardware.
- Troubleshooting hardware and network connectivity issues.
- Installing and configuring Operating Systems including Windows, iOS, Android, Apple OS X and Linux.
- Knowledge and skills required to install and configure systems to secure application, networks, and devices.
- Perform threat analysis.
- Mitigation techniques.
- IT Security applicable policies, laws, and regulations.
- Fundamentals of Cloud Computing and Operational Procedures.
- Critical networking security concepts.
- Cloud computing best practices and typical service models.
- Hardware virtualization techniques.
- Skills for Network Hardening.

Upon achieving a passing test result, technicians will receive certification of completion of the Program. If a technician fails to achieve a passing result, no certification will be awarded

and the student will have the opportunity to take the training again with a subsequent re-test at their manager's discretion.

### **TRAINING SCHEDULE**

OSIATD's Field Technician Training Program will span five (5) days in accordance with the following training schedule:

Day 1:

<b>Time</b>	<b>Subject</b>	<b>Location</b>	<b>Materials Required</b>
8:00 – 9:00	IT Support Fundamentals	GEEOTF	Pen/Pencil, notebook
9:00 – 10:30	Modern Computer Overview	GEEOTF	Pen/Pencil, notebook
10:30 – 10:45	Break	GEEOTF/Lounge	Pen/Pencil, notebook
10:45 – 11:45	Operating Systems	GEEOTF	Pen/Pencil, notebook
11:45 – 1:00	Lunch	Various	Pen/Pencil, notebook
1:00 – 1:40	Basics of Networking	GEEOTF	Pen/Pencil, notebook
1:40 – 2:00	Software Introduction	GEEOTF	Pen/Pencil, notebook
2:00 – 2:15	Break	GEEOTF/Lounge	Pen/Pencil, notebook
2:15 – 3:15	Troubleshooting	GEEOTF	Pen/Pencil, notebook

Day 2:

<b>Time</b>	<b>Subject</b>	<b>Location</b>	<b>Materials Required</b>
8:00 – 9:00	Introduction to Computer Networking	GEEOTF	Pen/Pencil, notebook
9:00 – 10:20	The Network Layer	GEEOTF	Pen/Pencil, notebook
10:20 – 10:35	Break	GEEOTF/Lounge	Pen/Pencil, notebook
10:35 – 11:45	The Transport Layer and Application Layer	GEEOTF	Pen/Pencil, notebook
11:45 – 1:00	Lunch	Various	Pen/Pencil, notebook
1:00 – 2:40	Networking Services	GEEOTF	Pen/Pencil, notebook
2:40 – 3:00	Break	GEEOTF/Lounge	Pen/Pencil, notebook
3:00 – 4:00	The Internet	GEEOTF	Pen/Pencil, notebook
4:00 – 5:00	Networks Troubleshooting	GEEOTF	Pen/Pencil, notebook

Day 3:

<b>Time</b>	<b>Subject</b>	<b>Location</b>	<b>Materials Required</b>
8:00 – 9:30	Operating Systems and Becoming a Power User – Basic Commands	GEEOTF	Pen/Pencil, notebook

9:30 – 10:45	Operating Systems and Becoming a Power User – File and Text Manipulation	GEEOTF	Pen/Pencil, notebook
10:45 – 11:00	Break	GEEOTF/Lounge	Pen/Pencil, notebook
11:00 – 12:00	Users and Permissions	GEEOTF	Pen/Pencil, notebook
12:00 – 1:00	Lunch	Various	Pen/Pencil, notebook
1:00 – 2:10	Package and Software Management	GEEOTF	Pen/Pencil, notebook
2:10 – 2:25	Break	GEEOTF/Lounge	Pen/Pencil, notebook
2:25 – 3:10	Filesystems	GEEOTF	Pen/Pencil, notebook
3:10 – 3:55	Process Management	GEEOTF	Pen/Pencil, notebook
3:55 – 5:00	Operating Systems in Practice	GEEOTF	Pen/Pencil, notebook

Day 4:

<b>Time</b>	<b>Subject</b>	<b>Location</b>	<b>Materials Required</b>
8:00 – 8:30	System Administration	GEEOTF	Pen/Pencil, notebook
8:30 – 9:10	Network and Infrastructure Services	GEEOTF	Pen/Pencil, notebook
9:10 – 10:10	Software and Platform Services	GEEOTF	Pen/Pencil, notebook
10:10 – 10:25	Break	GEEOTF/Lounge	Pen/Pencil, notebook
10:25 – 12:00	Directory Services	GEEOTF	Pen/Pencil, notebook
12:00 – 1:00	Lunch	Various	Pen/Pencil, notebook
1:00 – 2:00	Data Recovery and Backups	GEEOTF	Pen/Pencil, notebook

Day 5:

<b>Time</b>	<b>Subject</b>	<b>Location</b>	<b>Materials Required</b>
8:00 – 8:30	Understanding Security Threats	GEEOTF	Pen/Pencil, notebook
8:30 – 10:00	Cryptology	GEEOTF	Pen/Pencil, notebook
10:00 – 11:00	Security	GEEOTF	Pen/Pencil, notebook
11:00 – 11:15	Break	GEEOTF/Lounge	Pen/Pencil, notebook
11:15 – 12:25	Network Security	GEEOTF	Pen/Pencil, notebook
12:25 – 1:25	Lunch	Various	Pen/Pencil, notebook
1:25 – 2:05	Defense	GEEOTF	Pen/Pencil, notebook
2:05 – 2:20	Break	GEEOTF/Lounge	Pen/Pencil, notebook
2:20 – 3:20	Company Culture for Security	GEEOTF	Pen/Pencil, notebook

Day 6:

<b>Time</b>	<b>Subject</b>	<b>Location</b>	<b>Materials Required</b>
8:00 – 10:00	Laboratory: <ul style="list-style-type: none"> <li>• Assemble a computer.</li> <li>• Install, Update and Remove Software from Windows/Linux</li> <li>• Create, modify, and remove files and folders in Windows/Linux</li> <li>• Create, modify, and remove files and folders permissions in Windows/Linux</li> <li>• Partition and format a disk drive in Windows/Linux</li> <li>• Maintaining efficient process utilization on Windows/Linux</li> <li>• Collect process information using the Task Viewer.</li> </ul>	GEEOTF	Pen/Pencil, notebook
8:30 – 10:00	Break	GEEOTF/Lounge	Pen/Pencil, notebook
10:15 – 12:00	Laboratory: <ul style="list-style-type: none"> <li>• Terminate specific or multiple processes using Powershell</li> <li>• Terminate specific or multiple processes in Linux.</li> <li>• Use logs to track down issues in Windows and Linux</li> <li>• Create/inspect key repair, encrypt/decrypt and sign/verify using openssl.</li> <li>• Hashing and hash verification using md5sum and shasum tools.</li> <li>• Use of tcpdump and its features.</li> </ul>	GEEOTF	Pen/Pencil, notebook
12:00 – 1:00	Lunch	Various	Pen/Pencil, notebook
1:00 – 2:00	Review of the course	GEEOTF	Pen/Pencil, notebook
2:00 – 2:15	Break	GEEOTF/Lounge	Pen/Pencil, notebook
2:15 – 4:15	Written Test	GEEOTF	Pen/Pencil, notebook