POLITEKNIK BRUNEI	SCHOOL OF POLITEKNIK BRUNEI WEEKLY MODULE PLAN	**REFERENCE NUMBER:** PB/AS/LP/002 **VERSION:** 1.2 **REVISION DATE:** 06/10/2018 **EFFECTIVE DATE:** 1/1/2019

MODULE CODE/NAME	**NS4307, Network Programming**	**TOPIC**	**Module Induction** **Git**
SEMESTER	**Semester 2, 2021 / 2022**	**GROUP CODE/INTAKE**	**DITN12 (Intake 11), DITN10R (Intake 9)**
SCHOOL/DEPT	**School of ICT**	**WEEK**	**Week 1 - 23/01 – 29/01**

PEDAGOGICAL APPROACH

☐ Knowledge Building ☑ Presentation ☐ Co-operative/Collaborative Learn ☐ Experimental Learnin ☑ Case Studies
☐ Discussion ☑ Blended Learning ☐ Debate ☐ Others, please specify _____

RESOURCES

Learning management sytem

LESSON LEARNING OBJECTIVES	METHOD OF INSTRUCTION/LEARNING ACTIVITIES	REFLECTIVE EVALUATION
At the end of this lesson, the student should be able to:	**Session 1:** **Public Holiday**	
At the end of this lesson, the student should be able to: **1) Aware of the topics that will be covered in this module, aims, learning objectives and it's assessment components.** **2) Describe the benefits of an automated version control system.** **3) Describe the basics of how version control system works.** **4) Familiar with navigating file systems through Bash command.**	**Session 2:** **Lecture (Module Induction): 30 mins** **- Introduce myself, email, office and office phone.** **- Emphasis that communication will only be done through email.** **- Explain to the student what is this module about.** **- Emphasis that they need to understand the topics in Introduction to Programming to be able to do this module.** **- Explain the aims and learning objectives for this module.** **- Explain the module timeline from beginning to end of semester.** **- Explain assessment details.** **- Explain assessment timeline.** **- Explain the typical weekly class activities.** **Lecture (Git): 1 hour** **- Explain the motivation of using version control systems.** **- Relate a version control system like Microsoft Word's Track Changes, Google Docs' version history, or LibreOffice's Recording and Displaying Changes.** **- Explain the main purpose of version control systems.** **- Explain how version control systems work.** **- Explain each type of version control systems (VCS): Local VCS, Centralised VCS and Distributed VCS.** **- Explain what is Git.** **- Explain how Git works.** **- Explain the Three States of Git** **- Explain the basic Git workflow** **Practical (Git): 30 mins** **- Share required Git installations to students.** **- Facilitate Git installations with the students.** **- Make sure everyone have managed to installed Git successfully.** **Practical (Bash): 1 hour** **- Students need to open Git Bash (Windows) or Terminal (Linux or Mac).** **- Explain that the purpose of the software.** **- Facilitate students to perform the following:** **- Navigating folders** **- Listing the content of the folders** **- Creating folders** **- Copying folders and file** **- Moving folders and file** **- Asking which folder the software is currently in** **- Deleting folders and file (Warn students the danger since it will delete immediately before prompting)**	
At the end of this lesson, the student should be able to:	**Session 3:**	

NAME & SIGNATURE

MODULE LECTURER	PROGRAMME LEADER / ASSISTANT HOS (aHOS)/ HEAD OF SCHOOL (HOS)*
DATE:	DATE: .....

COMMENTS BY PROGRAMME LEADER/ ASSISTANT HOS (aHOS)/ HEAD OF SCHOOL (HOS) (If any)

POLITEKNIK BRUNEI	SCHOOL OF POLITEKNIK BRUNEI WEEKLY MODULE PLAN	**REFERENCE NUMBER:** PB/AS/LP/002 **VERSION:** 1.2 **REVISION DATE:** 06/10/2018 **EFFECTIVE DATE:** 1/1/2019

MODULE CODE/NAME	**NS4307, Network Programming**	**TOPIC**	**Git**
SEMESTER	**Semester 2, 2021 / 2022**	**GROUP CODE/INTAKE**	**DITN12 (Intake 11), DITN10R (Intake 9)**
SCHOOL/DEPT	**School of ICT**	**WEEK**	**Week 2 - 30/01 – 05/02**

PEDAGOGICAL APPROACH

☐ Knowledge Building ☑ Presentation ☐ Co-operative/Collaborative Learn ☐ Experimental Learnin ☑ Case Studies
☐ Discussion ☑ Blended Learning ☐ Debate ☐ Others, please specify _____

RESOURCES

Learning management sytem

LESSON LEARNING OBJECTIVES	METHOD OF INSTRUCTION/LEARNING ACTIVITIES	REFLECTIVE EVALUATION
At the end of this lesson, the student should be able to: **1) Apply the basic of git.**	**<u>Session 1:</u>** **Practical (Git):** **- Make sure everyone have managed to installed Git successfully.** **- Facilitate Git configurations in students computer globally (i.e. for every project): name, email, colorise output, preferred text editor.** **- Facilitate students how to create a repository.** **- Facilitate students how to try to create a nested repository and make sure they understand that this is a bad idea.** **- Facilitate students how to rectify a nested repository problem.** **- Facilitate students how to record changes in Git.** **- Facilitate students how to check the status of a Git repository.** **- Facilitate students how to record notes about the changes made to a Git repository.** **- Facilitate students how to check Git repository history.** **- Facilitate students how to check differences between the current state of the file and the most recently saved version.** **- Facilitate students on how Git staging area works.** **- Facilitate students how to identify old versions of files in repository.** **- Facilitate students how to review changes in repository.** **- Facilitate students how to recover old versions of files in repository.** **- Facilitate students how to tell Git to ignore files that the students do not want the repository to track.**	
At the end of this lesson, the student should be able to: **1) Students should personally own GitHub account.** **2) Able to host and manage Git repository on GitHub.** **3) Able to collaborate using GitHub.**	**<u>Session 2:</u>** **Lecture:** **- Explain the strength of version control when collaborating with other people.** **- Explain how Git repository can be store on the web.** **- Explain the popular Git hosting services: GitHub, BitBucket or GitLab.** **- Emphasis that we will be using GitHub for this module.** **Practical:** **- Facilitate students to register an account with GitHub (preferably using student license).** **- Facilitate students to familiarise with GitHub dashboard.** **- Facilitate students to create new repository in GitHub.** **- Facilitate students to connect their local repository to the remote repository in GitHub.** **- Facilitate students to sync any changes in their local repository to their remote repository.** **- Facilitate students to sync any changes in their remote repository to their local repository.** **- Facilitate students how to add collaborator to their remote repository.** **- Facilitate students how to download a copy of their friends repository to their local machine.** **- Facilitate students to make changes to their friend repository in their local machine.** **- Facilitate students to sync the changes to their friend remote repository.** **- Facilitate students to sync the changes their friend made to their remote repository to their local repository.** **- Facilitate students on how to handle conflict on the changes to a file.** **- Facilitate students on how to use Git branching.** **- Facilitate students on how to explore features available in GitHub.**	
At the end of this lesson, the student should be able to:	**<u>Session 3:</u>**	

NAME & SIGNATURE

MODULE LECTURER	PROGRAMME LEADER / ASSISTANT HOS (aHOS)/ HEAD OF SCHOOL (HOS)*
DATE:	DATE: .....

COMMENTS BY PROGRAMME LEADER/ ASSISTANT HOS (aHOS)/ HEAD OF SCHOOL (HOS) (If any)

POLITEKNIK BRUNEI	SCHOOL OF POLITEKNIK BRUNEI WEEKLY MODULE PLAN	**REFERENCE NUMBER:** PB/AS/LP/002 **VERSION:** 1.2 **REVISION DATE:** 06/10/2018 **EFFECTIVE DATE:** 1/1/2019

MODULE CODE/NAME	**NS4307, Network Programming**	**TOPIC**	**Introduction to Network Programming** **Java Binary Input & Output**
SEMESTER	**Semester 2, 2021 / 2022**	**GROUP CODE/INTAKE**	**DITN12 (Intake 11), DITN10R (Intake 9)**
SCHOOL/DEPT	**School of ICT**	**WEEK**	**Week 3 - 06/02 – 12/02**

PEDAGOGICAL APPROACH

☐ Knowledge Building ☑ Presentation ☐ Co-operative/Collaborative Learn ☐ Experimental Learnin ☑ Case Studies
☐ Discussion ☑ Blended Learning ☐ Debate ☐ Others, please specify _____

RESOURCES

Learning management sytem

LESSON LEARNING OBJECTIVES	METHOD OF INSTRUCTION/LEARNING ACTIVITIES	REFLECTIVE EVALUATION
At the end of this lesson, the student should be able to: **1) Review on TCP IP Network Layer** **2) Understand and able to apply Java Binary Input & Output**	**<u>Session 1:</u>** **Lecture (Introduction to Network Programming):** **- Review on what is networks** **- Review on each component in Layers of Network (TCP IP)** **- Review on Internet Protocol (IP)** **- Review on Transmission Control Protocol (TCP)** **- Review on User Datagram Protocol (UDP)** **- Review on IP Addresses** **- Review on Domain Name System** **- Review on Ports** **- Review on the Internet** **- Review on Internet Address Blocks** **- Review on Network Address Translation** **- Review on Firewalls** **- Review on Proxy Servers** **Lecture (Java Binary Input & Output):** **- Review on Java Input Output** **- Introduction on Java Input Output in Network Programming context** **- Explain the difference between Java Text and Binary Input Output** **- Explain the Inheritance tree of Java Binary Input Output library** **- Explain the methods available in InputStream and OutputStream** **- Explain in details on how to use FileInputStream and FileOutputStream** **- Explain the closing the stream using traditional try and catch statement and using try with resources** **- Explain in details on how to use DataInputStream and DataOutputStream** **- Explain in details on how to use BufferedInputStream and BufferedOutputStream** **- Explain in details on how to use ObjectInputStream and ObjectOutputStream** **- Emphasis on object cannot be stored if the object class does not implements Serializable Interface** **- Explain in details the purpose of Serializable Interface**	
At the end of this lesson, the student should be able to: **1) Understand and able to apply Java Binary Input & Output**	**<u>Session 2:</u>** **Practical:** **- Facilitate to implement a Java application to make a copy of a file**	
At the end of this lesson, the student should be able to:	**<u>Session 3:</u>**	

NAME & SIGNATURE

MODULE LECTURER	PROGRAMME LEADER / ASSISTANT HOS (aHOS)/ HEAD OF SCHOOL (HOS)*
DATE:	DATE: .....

COMMENTS BY PROGRAMME LEADER/ ASSISTANT HOS (aHOS)/ HEAD OF SCHOOL (HOS) (If any)

ڤوليتيكنيك بروني POLITEKNIK BRUNEI	SCHOOL OF POLITEKNIK BRUNEI WEEKLY MODULE PLAN	**REFERENCE NUMBER:** PB/AS/LP/002 **VERSION:** 1.2 **REVISION DATE:** 06/10/2018 **EFFECTIVE DATE:** 1/1/2019

MODULE CODE/NAME	**NS4307, Network Programming**	**TOPIC**	**Java Sockets**
SEMESTER	**Semester 2, 2021 / 2022**	**GROUP CODE/INTAKE**	**DITN12 (Intake 11), DITN10R (Intake 9)**
SCHOOL/DEPT	**School of ICT**	**WEEK**	**Week 4 - 13/02 – 19/02**

PEDAGOGICAL APPROACH

☐ Knowledge Building ☑ Presentation ☐ Co-operative/Collaborative Learn ☐ Experimental Learnin ☑ Case Studies
☐ Discussion ☑ Blended Learning ☐ Debate ☐ Others, please specify _____

RESOURCES

Learning management sytem

LESSON LEARNING OBJECTIVES	METHOD OF INSTRUCTION/LEARNING ACTIVITIES	REFLECTIVE EVALUATION
At the end of this lesson, the student should be able to: **1) Understand the concept of Client Server Application** **2) Understand and able to implement basic Client Server Application**	**Session 1:** **Lecture:** **- Review on Internet Protocol** **- Introduction to concept of Client Server** **- Explain the typical process in network programming** **- Explain Java ServerSocket object** **- Explain Java Socket object** **- Explain the process connection between server and client sockets.** **- Explain data transmission through Sockets** **- Explain how to get InputStream and OutputStream objects from Socket** **- Explain retrieved InputStream and OutputStream objects can be wrapped using DataInputStream and DataOutputStream objects.** **- Show example client server application for calculating area of circle.** **- Explain ConnectException and BindException** **- Explain how ServerSocket and Socket handle the port number.** **- Explain InetAddress object.** **- Show example to identify host name IP** **- Explain how a server can handle multiple clients** **- Explain Threads** **- Explain how threads handled on multiple CPU and single CPU.** **- Explain multithreading.** **- Explain Java Task.** **- Explain Java Thread.** **- Show example for server that can handle multiple clients.** **- Explain sending and receiving Object.** **- Show example client server that transmit Object.** **Practical:** **- Facilitate students to implement client server application for calculating area of circle.** **- Facilitate students to implement client server application for calculating area of rectangle.**	
At the end of this lesson, the student should be able to: **1) Understand and able to implement basic Client Server Application**	**Session 2:** **Practical:** **- Facilitate students to implement client server application for calculating area of circle.** **- Facilitate students to implement client server application for calculating area of rectangle.** **- Facilitate implementation of Hit Counter** **- Facilitate implementation of Chat**	
At the end of this lesson, the student should be able to:	**Session 3:**	

NAME & SIGNATURE

MODULE LECTURER	**PROGRAMME LEADER / ASSISTANT HOS (aHOS)/ HEAD OF SCHOOL (HOS)***
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DATE:	DATE: .....

COMMENTS BY PROGRAMME LEADER/ ASSISTANT HOS (aHOS)/ HEAD OF SCHOOL (HOS) (If any)

POLITEKNIK BRUNEI	SCHOOL OF POLITEKNIK BRUNEI WEEKLY MODULE PLAN	**REFERENCE NUMBER:** PB/AS/LP/002 **VERSION:** 1.2 **REVISION DATE:** 06/10/2018 **EFFECTIVE DATE:** 1/1/2019

MODULE CODE/NAME	**NS4307, Network Programming**	**TOPIC**	**Java Sockets**
SEMESTER	**Semester 2, 2021 / 2022**	**GROUP CODE/INTAKE**	**DITN12 (Intake 11), DITN10R (Intake 9)**
SCHOOL/DEPT	**School of ICT**	**WEEK**	**Week 5 - 20/02 – 26/02**

PEDAGOGICAL APPROACH

☐ Knowledge Building ☑ Presentation ☐ Co-operative/Collaborative Learn ☐ Experimental Learnin ☑ Case Studies
☐ Discussion ☑ Blended Learning ☐ Debate ☐ Others, please specify _____

RESOURCES

Learning management sytem

LESSON LEARNING OBJECTIVES	METHOD OF INSTRUCTION/LEARNING ACTIVITIES	REFLECTIVE EVALUATION
At the end of this lesson, the student should be able to: **1) Understand and able to implement basic Client Server Application**	**Session 1:** **Practical:** **- Facilitate students to implement client server application for calculating area of circle.** **- Facilitate students to implement client server application for calculating area of rectangle.** **- Facilitate implementation of Hit Counter** **- Facilitate implementation of Chat** **- Facilitate implementation of Dots and Boxes** **- Facilitate students to implement Word Hunt**	
At the end of this lesson, the student should be able to: **1) Understand and able to implement basic Client Server Application**	**Session 2:** **Practical:** **- Facilitate students to implement Snakes** **- Facilitate implementation of Double Solitaire** **- Facilitate impleentation of A Simple Voice Chat**	
At the end of this lesson, the student should be able to:	**Session 3:**	

NAME & SIGNATURE

MODULE LECTURER	PROGRAMME LEADER / ASSISTANT HOS (aHOS)/ HEAD OF SCHOOL (HOS)*
DATE:	DATE: .....

COMMENTS BY PROGRAMME LEADER/ ASSISTANT HOS (aHOS)/ HEAD OF SCHOOL (HOS) (If any)

POLITEKNIK BRUNEI	SCHOOL OF POLITEKNIK BRUNEI WEEKLY MODULE PLAN	**REFERENCE NUMBER:** PB/AS/LP/002 **VERSION:** 1.2 **REVISION DATE:** 06/10/2018 **EFFECTIVE DATE:** 1/1/2019

MODULE CODE/NAME	**NS4307, Network Programming**	**TOPIC**	**Java Web Application**
SEMESTER	**Semester 2, 2021 / 2022**	**GROUP CODE/INTAKE**	**DITN12 (Intake 11), DITN10R (Intake 9)**
SCHOOL/DEPT	**School of ICT**	**WEEK**	**Week 6 - 27/02 – 05/03**

PEDAGOGICAL APPROACH

☐ Knowledge Building ☑ Presentation ☐ Co-operative/Collaborative Learn ☐ Experimental Learnin ☑ Case Studies
☐ Discussion ☑ Blended Learning ☐ Debate ☐ Others, please specify _____

RESOURCES

Learning management sytem

LESSON LEARNING OBJECTIVES	METHOD OF INSTRUCTION/LEARNING ACTIVITIES	REFLECTIVE EVALUATION
At the end of this lesson, the student should be able to: **1) Understand the tools needed for building Web Application using Spring Framework.** **2) Understand and able to implement basic response for a Uniform Resource Identifier.**	**<u>Session 1:</u>** **Lecture:** **- Explain the required tools for this topic.** **- Explain the tern Web Application.** **- Explain the purpose of Web Framework and list different Web Framework for different programming language.** **- Explain what is Spring Framework.** **- Explain what is Maven.** **- Explain the purpose of Maven's dependency management.** **- Emphasis that the Maven Repository being shared contains all the required third partly library needed for developing Spring Application.** **- After everyone copied Spring Tool Suite and Maven Repository, ask the student to follow the following instructions.** **- Show example how to create Maven Project.** **- Explain the folder structure in the Maven Project.** **- Explain how to open pom.xml** **- Explain Spring Boot** **- Explain how to configure Spring Boot to Maven Project.** **- Explain other dependencies required and how to add to Maven Project: Spring Boot Starter Web, Spring Boot Starter Thymeleaf, Spring Boot Starter Test and NekoHTML.** **- Emphasis there are more dependencies that will be added in furture topics.** **- Explain the concept of Model View Controller (MVC)** **- Explain how to set up the Build.** **- Explain how to run Spring Web Application.** **- Explain another way to create Maven Project for Spring Framework (Spring Initializr).** **- Show how to use Spring Initializr** **- Show how to import existing Maven Project.** **- Explain how to run main class.** **Practical:** **- Share Spring Tool Suite and Maven Repository to students.** **- Facilitate Spring Tool Suite installation to students.** **- Facilitate Maven Repository installation to students.** **- Facilitate Maven Project creation with students.**	
At the end of this lesson, the student should be able to: **1) Understand and able to implement the controller component of Spring Framework.** **2) Understand and able to implement the view component of Spring Framework.** **3) Understand and able to implement basic Thymeleaf syntax.**	**<u>Session 2:</u>** **Lecture:** **- Explain why the current application only show error page.** **- Explain Spring Controller** **- Explain Uniform Resource Locator (URL)** **- Explain Uniform Resource Identifier (URI)** **- Show example how to implement Spring Controller** **- Explain that a method that return String data type need to be created to response to each URI request** **- Explain Request Mapping** **- Explain RequestMapping annotation** **- Explain ResponseBody annotation** **- Show example of handling URI with RequestMapping and ResponseBody annotation.** **- Explain that html tags can be used in the Controller Class.** **- Explain that typically a web application uses HTML file to provide the content.** **- Explain Spring View** **- Explain Thymeleaf** **- Explain how Thymeleaf works** **- Show example on how to create HTML file.** **- Emphasis that this is what was learned during Basic Web Programming module.** **- Explain how to response with HTML file.** **- Explain what is static files.** **- Explain how to integrate static files into the Spring Web Application.** **- Show example of implementation of static files.** **- Explain Thymeleaf URL Expression** **- Explain how to implement Thymeleaf URL Expression** **- Explain Thymeleaf XML Namespace** **- Explain Absolute URLs, Context-relative URLs, Server-relative URLs and Protocol-relative URLs.** **Practical:** **- Facilitate students to configure Maven Project.** **- Facilitate students to implement a student management system.**	

At the end of this lesson, the student should be able to:	Session 3:	
NAME & SIGNATURE		
MODULE LECTURER DATE:	PROGRAMME LEADER / ASSISTANT HOS (aHOS)/ HEAD OF SCHOOL (HOS)* DATE:	
COMMENTS BY PROGRAMME LEADER/ ASSISTANT HOS (aHOS)/ HEAD OF SCHOOL (HOS) (If any)		

POLITEKNIK BRUNEI	SCHOOL OF POLITEKNIK BRUNEI WEEKLY MODULE PLAN	**REFERENCE NUMBER:** PB/AS/LP/002 **VERSION:** 1.2 **REVISION DATE:** 06/10/2018 **EFFECTIVE DATE:** 1/1/2019

MODULE CODE/NAME	**NS4307, Network Programming**	**TOPIC**	**Java Web Application Assignment Clinic**
SEMESTER	**Semester 2, 2021 / 2022**	**GROUP CODE/INTAKE**	**DITN12 (Intake 11), DITN10R (Intake 9)**
SCHOOL/DEPT	**School of ICT**	**WEEK**	**Week 7 - 06/03 – 12/03**

PEDAGOGICAL APPROACH

☐ Knowledge Building ☑ Presentation ☐ Co-operative/Collaborative Learn ☐ Experimental Learnin ☑ Case Studies
☐ Discussion ☑ Blended Learning ☐ Debate ☐ Others, please specify _____

RESOURCES

Learning management sytem

LESSON LEARNING OBJECTIVES	METHOD OF INSTRUCTION/LEARNING ACTIVITIES	REFLECTIVE EVALUATION
At the end of this lesson, the student should be able to: **1) Understand and able to implement the model component of Spring Framework.**	**Session 1:** **Lecture:** **- Explain Spring Model** **- Explain Plain Old Java Object (POJO)** **- Show example of POJO** **- Explain how to use POJO in controller** **- Explain how to allow Thymeleaf to access the object in the controller.** **- Show example of POJO in controller** **- Explain how to make static page to dynamic page using Thymeleaf.** **- Explain how to access object pass from controller using Thymeleaf.** **- Explain how to concatenate in Thymeleaf syntax.** **- Show example of Thymeleaf accessing data passed from controller.** **Practical:** **- Further facilitate students to implement a student management system.**	
At the end of this lesson, the student should be able to: **1) Making sure the students are in the right track for Assignment 1**	**Session 2:** **Consultation by groups:** **- Allow student to consult and polish up their solution for Assignment 1.** **Practical:** **- Ask student to complete Copy Paste App** **- Ask student to complete improved server client chat app.**	
At the end of this lesson, the student should be able to:	**Session 3:**	

NAME & SIGNATURE

MODULE LECTURER	PROGRAMME LEADER / ASSISTANT HOS (aHOS)/ HEAD OF SCHOOL (HOS)*
DATE:	DATE: .....

COMMENTS BY PROGRAMME LEADER/ ASSISTANT HOS (aHOS)/ HEAD OF SCHOOL (HOS) (If any)

ڤوليتيكنيك بروني POLITEKNIK BRUNEI	SCHOOL OF POLITEKNIK BRUNEI WEEKLY MODULE PLAN	**REFERENCE NUMBER:** PB/AS/LP/002 **VERSION:** 1.2 **REVISION DATE:** 06/10/2018 **EFFECTIVE DATE:** 1/1/2019

MODULE CODE/NAME	**NS4307, Network Programming**	**TOPIC**	**Mid Semester Break**
SEMESTER	**Semester 2, 2021 / 2022**	**GROUP CODE/INTAKE**	**DITN12 (Intake 11), DITN10R (Intake 9)**
SCHOOL/DEPT	**School of ICT**	**WEEK**	**Week 8 - 13/03 – 19/03**

PEDAGOGICAL APPROACH

☐ Knowledge Building	☑ Presentation	☐ Co-operative/Collaborative Learn	☐ Experimental Learnin	☑ Case Studies
☐ Discussion	☑ Blended Learning	☐ Debate	☐ Others, please specify _____	

RESOURCES

Learning management sytem

LESSON LEARNING OBJECTIVES	METHOD OF INSTRUCTION/LEARNING ACTIVITIES	REFLECTIVE EVALUATION
At the end of this lesson, the student should be able to:	**Session 1:**	
At the end of this lesson, the student should be able to:	**Session 2:**	
At the end of this lesson, the student should be able to:	**Session 3:**	

NAME & SIGNATURE

MODULE LECTURER	PROGRAMME LEADER / ASSISTANT HOS (aHOS)/ HEAD OF SCHOOL (HOS)*
DATE:	DATE: .....

COMMENTS BY PROGRAMME LEADER/ ASSISTANT HOS (aHOS)/ HEAD OF SCHOOL (HOS) (If any)

POLITEKNIK BRUNEI	SCHOOL OF POLITEKNIK BRUNEI WEEKLY MODULE PLAN	**REFERENCE NUMBER:** PB/AS/LP/002 **VERSION:** 1.2 **REVISION DATE:** 06/10/2018 **EFFECTIVE DATE:** 1/1/2019

MODULE CODE/NAME	**NS4307, Network Programming**	**TOPIC**	**Java Web Programming**
SEMESTER	**Semester 2, 2021 / 2022**	**GROUP CODE/INTAKE**	**DITN12 (Intake 11), DITN10R (Intake 9)**
SCHOOL/DEPT	**School of ICT**	**WEEK**	**Week 9 - 20/03 – 26/03**

PEDAGOGICAL APPROACH

☐ Knowledge Building ☑ Presentation ☐ Co-operative/Collaborative Learn ☐ Experimental Learnin ☑ Case Studies
☐ Discussion ☑ Blended Learning ☐ Debate ☐ Others, please specify _____

RESOURCES

Learning management sytem

LESSON LEARNING OBJECTIVES	METHOD OF INSTRUCTION/LEARNING ACTIVITIES	REFLECTIVE EVALUATION
At the end of this lesson, the student should be able to: **1) Understand Data Repository**	**Session 1:** **Lecture:** **- Explain data repository** **- Explain the purpose of Component annotation** **- Show example of data repository** **- Explain data repository in controller** **- Explain the purpose of Autowired annotation** **- Explain how to pass list of data to Thymeleaf Templates** **- Show example of data repository in controller.** **- Explain how to loop through the list of data in Thymeleaf Templates** **- Show example of loop through the list of data in Thymeleaf Templates** **- Explain dynamic page** **- Explain how to generate dynamic URI** **- Explain how controller handle dynamic URI** **- Show example of dynamic page.** **- Explain how to send data with HTTP Request** **- Explain GET Method and POST Method.** **- Explain how controller handle HTTP Request** **- Show example of controller handling HTTP Request** **Practical:** **- Further facilitate students to implement a student management system.**	
At the end of this lesson, the student should be able to: **1) Apply knowledge in Spring Framework**	**Session 2:** **Lecture:** **- Explain data repository** **- Explain the purpose of Component annotation** **- Show example of data repository** **- Explain data repository in controller** **- Explain the purpose of Autowired annotation** **- Explain how to pass list of data to Thymeleaf Templates** **- Show example of data repository in controller.** **- Explain how to loop through the list of data in Thymeleaf Templates** **- Show example of loop through the list of data in Thymeleaf Templates** **- Explain dynamic page** **- Explain how to generate dynamic URI** **- Explain how controller handle dynamic URI** **- Show example of dynamic page.** **- Explain how to send data with HTTP Request** **- Explain GET Method and POST Method.** **- Explain how controller handle HTTP Request** **- Show example of controller handling HTTP Request** **Practical:** **- Further facilitate students to implement a student management system.**	
At the end of this lesson, the student should be able to:	**Session 3:**	

NAME & SIGNATURE

MODULE LECTURER	PROGRAMME LEADER / ASSISTANT HOS (aHOS)/ HEAD OF SCHOOL (HOS)*
DATE:	DATE: .....

COMMENTS BY PROGRAMME LEADER/ ASSISTANT HOS (aHOS)/ HEAD OF SCHOOL (HOS) (If any)

POLITEKNIK BRUNEI	SCHOOL OF POLITEKNIK BRUNEI WEEKLY MODULE PLAN	**REFERENCE NUMBER:** PB/AS/LP/002 **VERSION:** 1.2 **REVISION DATE:** 06/10/2018 **EFFECTIVE DATE:** 1/1/2019

MODULE CODE/NAME	**NS4307, Network Programming**	**TOPIC**	**Database MySQL**
SEMESTER	**Semester 2, 2021 / 2022**	**GROUP CODE/INTAKE**	**DITN12 (Intake 11), DITN10R (Intake 9)**
SCHOOL/DEPT	**School of ICT**	**WEEK**	**Week 10 - 27/03 – 02/04**

PEDAGOGICAL APPROACH

☐ Knowledge Building ☑ Presentation ☐ Co-operative/Collaborative Learn ☐ Experimental Learnin ☑ Case Studies
☐ Discussion ☑ Blended Learning ☐ Debate ☐ Others, please specify _____

RESOURCES

Learning management sytem

LESSON LEARNING OBJECTIVES	METHOD OF INSTRUCTION/LEARNING ACTIVITIES	REFLECTIVE EVALUATION
At the end of this lesson, the student should be able to: **1) Understand database management systems.** **2) Understand how data is structured in Structured Query Language database.**	**Session 1:** **Lecture:** **- Explain what is a Database.** **- Explain that Databases are widely used in applications.** **- Explain the conceptual modelling of database.** **- Explain Entity Relationship Diagram (ERD) Model** **- Explain entity set** **- Explain attributes** **- Explain domain of an attirbute** **- Explain how entity and attribute is represented using ERD.** **- Explain Keys** **- Explain superkeys, candidate key and primary key.** **- Explain relationship** **- Explain how to represent relationship in ERD.** **- Explain ternary relationship** **- Explain recursive relationship** **- Explain mapping constraints: one-to-many, many-to-one, one-to-many, one-to-one and many-to-many.** **- Explain keys for a relationship set.** **Exercises:** **- Facilitate students to design a part of student management database.**	
At the end of this lesson, the student should be able to: **1) Understand and apply Structured Query Language (SQL)**	**Session 2:** **Lecture:** **- Explain MySQL.** **- Emphasis that the knowledge taught in Database Design and Implementation module can be used in this module.** **- Explain how to create, choose and deleting Database in MySQL.** **- Explain how to create, delete and alter Database Table in MySQL.** **- Explain how to list Database, Database Tables and Database Table Details.** **- Explain basic data type in MySQL.** **- Explain how to insert data to Database Table.** **- Explain how to retrieve data from Database Table.** **- Explain how to retrieve data with Condition From Database Table.** **- Explain how to use Logical Operator in MySQL.** **- Explain how to retrieve data from multiple Database Table in MySQL.** **- Explain how to edit data from Database Table.** **Practical:** **- Share required MySQL installations to students.** **- Facilitate students to install MySQL.**	
At the end of this lesson, the student should be able to:	**Session 3:**	

NAME & SIGNATURE

MODULE LECTURER	PROGRAMME LEADER / ASSISTANT HOS (aHOS)/ HEAD OF SCHOOL (HOS)*
.....	.....
DATE:	DATE: .....

COMMENTS BY PROGRAMME LEADER/ ASSISTANT HOS (aHOS)/ HEAD OF SCHOOL (HOS) (If any)

ڤوليتيكنيك بروني POLITEKNIK BRUNEI	SCHOOL OF POLITEKNIK BRUNEI WEEKLY MODULE PLAN	**REFERENCE NUMBER:** PB/AS/LP/002 **VERSION:** 1.2 **REVISION DATE:** 06/10/2018 **EFFECTIVE DATE:** 1/1/2019

MODULE CODE/NAME	**NS4307, Network Programming**	**TOPIC**	**MySQL** **Java Persistence API**
SEMESTER	**Semester 2, 2021 / 2022**	**GROUP CODE/INTAKE**	**DITN12 (Intake 11), DITN10R (Intake 9)**
SCHOOL/DEPT	**School of ICT**	**WEEK**	**Week 11 - 03/04 – 09/04**

PEDAGOGICAL APPROACH

☐ Knowledge Building ☑ Presentation ☐ Co-operative/Collaborative Learn ☐ Experimental Learnin ☑ Case Studies
☐ Discussion ☑ Blended Learning ☐ Debate ☐ Others, please specify _____

RESOURCES

Learning management sytem

LESSON LEARNING OBJECTIVES	METHOD OF INSTRUCTION/LEARNING ACTIVITIES	REFLECTIVE EVALUATION
At the end of this lesson, the student should be able to: **1) Understand and apply Structured Query Language (SQL)**	**Session 1:** **Lecture:** **- Explain how to implement Primary Key in Database Table.** **- Explain how to delete and changing Primary Key from Database Table.** **- Explain how to understand basic Entity Relationship Diagram and implement to MySQL.** **- Explain how to implement Foreign Key in Database Table.** **- Explain how to delete and changing Foreign Key from Database Table.** **- Explain the motivation of using Foreign Key.** **- Explain how to implement auto increment.** **- Explain how to implement time stamp.** **- Explain how to organise retrieved data.** **- Explain how to implement basic functions in MySQL.** **- Explain how to show duplicate value once.** **- Emphasis in the lecture notes there are more advance technique available in MySQL.** **Practical:** **- Facilitate students to familiarise with MySQL by attempting the examples in lecture notes.**	
At the end of this lesson, the student should be able to: **1) Understand and apply Structured Query Language (SQL) through Java Persistence API**	**Session 2:** **Lecture:** **- Explain the requirements for this topic.** **- Explain the configuration needed on the Spring Application.** **- Explain Spring Data JPA** **- Explain how to configure Spring Data JPA to Spring Application.** **- Explain MySQL connector** **- Explain how to configure MySQL connector to Spring Application.** **- Explain how to configure Spring Application to connect to MySQL database in properties file.** **- Explain each required properties.** **- Show example of properties file.** **- Explain how to make POJO to structure data in database.** **- Explain @Entity and @Table annotation.** **- Explain @Id, @GeneratedValue and @NotNull annotation** **- Show example of POJO that sturture data in database.** **- Explain it is required to implement a no-arg constructor in POJO.** **Practical:** **- Further facilitate students to implement a student management system.**	
At the end of this lesson, the student should be able to:	**Session 3:**	

NAME & SIGNATURE

MODULE LECTURER	PROGRAMME LEADER / ASSISTANT HOS (aHOS)/ HEAD OF SCHOOL (HOS)*
.....	.....
DATE:	DATE: .....

COMMENTS BY PROGRAMME LEADER/ ASSISTANT HOS (aHOS)/ HEAD OF SCHOOL (HOS) (If any)

POLITEKNIK BRUNEI	SCHOOL OF POLITEKNIK BRUNEI WEEKLY MODULE PLAN	**REFERENCE NUMBER:** PB/AS/LP/002 **VERSION:** 1.2 **REVISION DATE:** 06/10/2018 **EFFECTIVE DATE:** 1/1/2019

MODULE CODE/NAME	**NS4307, Network Programming**	**TOPIC**	**Java Persistence API**
SEMESTER	**Semester 2, 2021 / 2022**	**GROUP CODE/INTAKE**	**DITN12 (Intake 11), DITN10R (Intake 9)**
SCHOOL/DEPT	**School of ICT**	**WEEK**	**Week 12 - 10/04 – 16/04**

PEDAGOGICAL APPROACH

☐ Knowledge Building ☑ Presentation ☐ Co-operative/Collaborative Learn ☐ Experimental Learnin ☑ Case Studies
☐ Discussion ☑ Blended Learning ☐ Debate ☐ Others, please specify _____

RESOURCES

Learning management sytem

LESSON LEARNING OBJECTIVES	METHOD OF INSTRUCTION/LEARNING ACTIVITIES	REFLECTIVE EVALUATION
At the end of this lesson, the student should be able to: **1) Understand and able to apply Java Persistence API**	**Session 1:** **Practical:** **- Challenge students to add additional entity and have it to have relationship to the existing entity in the student management system.**	
At the end of this lesson, the student should be able to: **1) Understand and able to apply Java Persistence API**	**Session 2:** **Lecture:** **- Explain Data Access Object (DAO)** **- Explain CrudRepository interface** **- Explain how to implement the interface in to handle POJO** **- Explain the methods available in DAO: delete, exists, findAll, findOne and save** **- Explain how to use DAO in controller** **- Explain how to retrieve all entities using DAO** **- Explain how to retrieve one entity using DAO** **- Explain how to implement our own method in DAO** **- Explain how to add data to database** **- Explain remove data from database** **- Explain how to update data from database** **Practical:** **- Further facilitate students to implement a student management system.**	
At the end of this lesson, the student should be able to:	**Session 3:**	

NAME & SIGNATURE

MODULE LECTURER	PROGRAMME LEADER / ASSISTANT HOS (aHOS)/ HEAD OF SCHOOL (HOS)*
DATE:	DATE: .....

COMMENTS BY PROGRAMME LEADER/ ASSISTANT HOS (aHOS)/ HEAD OF SCHOOL (HOS) (If any)

POLITEKNIK BRUNEI	SCHOOL OF POLITEKNIK BRUNEI WEEKLY MODULE PLAN	**REFERENCE NUMBER:** PB/AS/LP/002 **VERSION:** 1.2 **REVISION DATE:** 06/10/2018 **EFFECTIVE DATE:** 1/1/2019

MODULE CODE/NAME	**NS4307, Network Programming**	**TOPIC**	**Assignment Clinic**
SEMESTER	**Semester 2, 2021 / 2022**	**GROUP CODE/INTAKE**	**DITN12 (Intake 11), DITN10R (Intake 9)**
SCHOOL/DEPT	**School of ICT**	**WEEK**	**Week 13 - 17/04 – 23/04**

PEDAGOGICAL APPROACH

☐ Knowledge Building ☑ Presentation ☐ Co-operative/Collaborative Learn ☐ Experimental Learnin ☑ Case Studies
☐ Discussion ☑ Blended Learning ☐ Debate ☐ Others, please specify _____

RESOURCES

Learning management sytem

LESSON LEARNING OBJECTIVES	METHOD OF INSTRUCTION/LEARNING ACTIVITIES	REFLECTIVE EVALUATION
At the end of this lesson, the student should be able to: **1) Making sure the students are in the right track for Assignment 2**	**Session 1:** **Consultation by groups:** **- Allow student to consult and polish up their solution for Assignment 2.**	
At the end of this lesson, the student should be able to: **1) Making sure the students are in the right track for Assignment 2**	**Session 2:** **Consultation by groups:** **- Allow student to consult and polish up their solution for Assignment 2.**	
At the end of this lesson, the student should be able to:	**Session 3:**	

NAME & SIGNATURE

MODULE LECTURER	PROGRAMME LEADER / ASSISTANT HOS (aHOS)/ HEAD OF SCHOOL (HOS)*
.....	.....
DATE:	DATE: .....

COMMENTS BY PROGRAMME LEADER/ ASSISTANT HOS (aHOS)/ HEAD OF SCHOOL (HOS) (If any)

ڤوليتيكنيك بروني POLITEKNIK BRUNEI	SCHOOL OF POLITEKNIK BRUNEI WEEKLY MODULE PLAN	**REFERENCE NUMBER:** PB/AS/LP/002 **VERSION:** 1.2 **REVISION DATE:** 06/10/2018 **EFFECTIVE DATE:** 1/1/2019

MODULE CODE/NAME	**NS4307, Network Programming**	**TOPIC**	**No classes due to public holiday**
SEMESTER	**Semester 2, 2021 / 2022**	**GROUP CODE/INTAKE**	**DITN12 (Intake 11), DITN10R (Intake 9)**
SCHOOL/DEPT	**School of ICT**	**WEEK**	**Week 14 - 24/04 – 30/04**

PEDAGOGICAL APPROACH

☐ Knowledge Building ☑ Presentation ☐ Co-operative/Collaborative Learn ☐ Experimental Learnin ☑ Case Studies
☐ Discussion ☑ Blended Learning ☐ Debate ☐ Others, please specify _____

RESOURCES

Learning management sytem

LESSON LEARNING OBJECTIVES	METHOD OF INSTRUCTION/LEARNING ACTIVITIES	REFLECTIVE EVALUATION
At the end of this lesson, the student should be able to:	**Session 1:** **No class due to public holiday**	
At the end of this lesson, the student should be able to:	**Session 2:**	
At the end of this lesson, the student should be able to:	**Session 3:**	

NAME & SIGNATURE

MODULE LECTURER	PROGRAMME LEADER / ASSISTANT HOS (aHOS)/ HEAD OF SCHOOL (HOS)*
DATE:	DATE: .....

COMMENTS BY PROGRAMME LEADER/ ASSISTANT HOS (aHOS)/ HEAD OF SCHOOL (HOS) (If any)

ڤوليتيكنيك برونئ POLITEKNIK BRUNEI	SCHOOL OF POLITEKNIK BRUNEI WEEKLY MODULE PLAN	**REFERENCE NUMBER:** PB/AS/LP/002 **VERSION:** 1.2 **REVISION DATE:** 06/10/2018 **EFFECTIVE DATE:** 1/1/2019

MODULE CODE/NAME	**NS4307, Network Programming**	**TOPIC**	**Java Persistence API**
SEMESTER	**Semester 2, 2021 / 2022**	**GROUP CODE/INTAKE**	**DITN12 (Intake 11), DITN10R (Intake 9)**
SCHOOL/DEPT	**School of ICT**	**WEEK**	**Week 15 - 01/05 – 07/05**

PEDAGOGICAL APPROACH

- ☐ Knowledge Building
- ☐ Discussion
- ☑ Presentation
- ☑ Blended Learning
- ☐ Co-operative/Collaborative Learn
- ☐ Debate
- ☐ Experimental Learnin
- ☐ Others, please specify _____
- ☑ Case Studies

RESOURCES

Learning management sytem

LESSON LEARNING OBJECTIVES	METHOD OF INSTRUCTION/LEARNING ACTIVITIES	REFLECTIVE EVALUATION
At the end of this lesson, the student should be able to: **1) Apply authentication implementation**	**Session 1:** **Practical:** **- Implement Spring security with Java Persistence API for authentication.** **- Implement authentication to web application.**	
At the end of this lesson, the student should be able to: **1) Apply authentication implementation**	**Session 2:** **Practical:** **- Continue from previous practical.**	
At the end of this lesson, the student should be able to:	**Session 3:**	

NAME & SIGNATURE

MODULE LECTURER	PROGRAMME LEADER / ASSISTANT HOS (aHOS)/ HEAD OF SCHOOL (HOS)*
.....	.....
DATE:	DATE: .....

COMMENTS BY PROGRAMME LEADER/ ASSISTANT HOS (aHOS)/ HEAD OF SCHOOL (HOS) (If any)

POLITEKNIK BRUNEI	SCHOOL OF POLITEKNIK BRUNEI WEEKLY MODULE PLAN	**REFERENCE NUMBER:** PB/AS/LP/002 **VERSION:** 1.2 **REVISION DATE:** 06/10/2018 **EFFECTIVE DATE:** 1/1/2019

MODULE CODE/NAME	**NS4307, Network Programming**	**TOPIC**	**Revision**
SEMESTER	**Semester 2, 2021 / 2022**	**GROUP CODE/INTAKE**	**DITN12 (Intake 11), DITN10R (Intake 9)**
SCHOOL/DEPT	**School of ICT**	**WEEK**	**Week 16 - 08/05 – 14/05**

PEDAGOGICAL APPROACH

- ☐ Knowledge Building
- ☐ Discussion
- ☑ Presentation
- ☑ Blended Learning
- ☐ Co-operative/Collaborative Learn
- ☐ Debate
- ☐ Experimental Learnin
- ☐ Others, please specify _____
- ☑ Case Studies

RESOURCES

Learning management sytem

LESSON LEARNING OBJECTIVES	METHOD OF INSTRUCTION/LEARNING ACTIVITIES	REFLECTIVE EVALUATION
At the end of this lesson, the student should be able to: **1) Able to understand what are to be expected for the Examinations** **2) Recap topics covered**	**Session 1:** **Lecture:** **- Explain the Examination Format.** **- Explain the topics to revise for the Examination.** **- Show example theory questions.** **- Show example practical questions.** **Consultation:** **- Allow student to consult on the topics they lack understanding.**	
At the end of this lesson, the student should be able to: **1) Recap topics covered**	**Session 2:** **Consultation:** **- Allow student to consult on the topics they lack understanding.**	
At the end of this lesson, the student should be able to:	**Session 3:**	

NAME & SIGNATURE

MODULE LECTURER	PROGRAMME LEADER / ASSISTANT HOS (aHOS)/ HEAD OF SCHOOL (HOS)*
DATE:	DATE: .....

COMMENTS BY PROGRAMME LEADER/ ASSISTANT HOS (aHOS)/ HEAD OF SCHOOL (HOS) (If any)