



མངའ་བདག་ཀླུ་པོའི་ཡིག་ཚང་།
HIS MAJESTY'S SECRETARIAT
TASHICHHO DZONG

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DHQ/DSP/ICT-01/22/

30th December 2022

Terms of Reference for Providing Data Science Training

A. Background

The De-suung Skilling Program (DSP) is a very important Royal Project initiated by His Majesty The King of Bhutan in 2021. As envisioned by His Majesty, DSP imparts a series of short-term high quality trainings to unemployed Bhutanese youths who have mostly completed high schools and are in their early or mid-20s. These youths have all undergone the De-suung training, which is a valued-based personal development program intended to encourage active citizenry in the process of nation-building. De-suung, which translates as “Guardians of Peace” is one of the most important Royal initiatives launched in 2011. Built upon the spirit of volunteerism, ethics, community service, integrity and civic responsibility, they volunteer to serve the nation during times of natural disasters, participate in charitable activities and other social services. Their most notable contribution was during the Covid-19 pandemic which helped the Royal Government to successfully address its numerous challenges.

The DSP trainings are mostly provided by international experts and trainers. In a few cases, public agencies and private institutes in Bhutan as well as local experts also impart the trainings either on their own or as assistants to international experts. Depending on the courses, some skilling programs are conducted in existing training institutes while others are conducted in available infrastructure or establishments, which are equipped with necessary facilities needed for the courses.

The focus of DSP is to ensure high quality and impactful short-terms trainings that are aligned to leading regional and international standards. Its strength lies in bringing in foreign talent, skills and technology. Every training aspires for regional and global certification, wherever possible.

The trainings are followed by field experiences associated with business and entrepreneurial entities. It is expected that the trainings will eventually lead to engagement of youths in meaningful economic activities such as self-employment and entrepreneurship.



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In line with this, DSP seeking applicants to fill a position as the Master Trainer for the following:

- i. **Duration:** 4.5 months
- ii. **Location:** Onsite in Bhutan
- iii. **No. of trainees:** 32

Training Delivery mode: The training shall be conducted face-to-face (on-site at the designated training center in Bhutan).

B. Objectives

The main objective of the program are:

- a. Develop and implement a state of the art training program on data science with focus on experiential learning
- b. Impart employable technical skills to the participants
- c. Enhance analytical and creative thinking skills of the participants
- d. Achieve regional or global certification for the participants where possible
- e. Assess the course conducted and submit detailed reports with suggestions for further improvement.

C. Scope of work

- a. Develop a comprehensive and state of the art course on Data science with focus on hands-on practical learning based on the indicative course outline given in annexure-I.
- b. Develop instructional training materials and aids such as handbooks, visual aids, online tutorials, demonstration models, and supporting training reference documentation etc. for the course.
- c. Develop assessment methods and criteria for the training
- d. Monitor and evaluate training quality and effectiveness, and thereby review and modify training methodology as necessary. Keep proper documentation of all such evaluations and their outcome, and changes made as a result.
- e. Assist in the final selection of trainees from the shortlisted candidates
- f. Liaise with the assistant trainers fielded by DSP.



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- g. Encourage the trainees to explore and learn on their own to complement their classroom learning, and thereby instill in them the love for life-long learning using various online tools and platforms
- h. Instill in the trainees the DSP ideals of attention to detail, punctuality and time management, and integrity (doing the right thing even when nobody is watching).
- i. Make recommendations for tools to use for recording and hosting the course as delivered by the trainer (e.g. thinkific.com)
- j. Record the course delivered for future use using the technology/tool chosen by DSP in consultation with the trainer.

D. Target Participants

The target participants for the training will be youth who have undergone Desuung Training aged roughly between 20 - 27 years of age with the following qualifications:

- High Schools Youth (Maximum of 32 participants):
 - Class 12 graduates
 - Completed 1.5 months' training on 'Introduction to Digital Transformation and Fundamentals of Computing'

E. Deliverables

The selected training provider's deliverables shall include but not be limited to the following:

- a. Develop course materials along with daily lesson plans and assessment criteria
- b. Conduct monitoring and evaluation of the training program, and carry out assessments, and submit reports in a timely manner
- c. Facilitate video recording of the course for future reference
- d. Commit to ensure placement guarantee for certain percentage of the trainees (say 15-30%) within 3 months of completing the training course. The final 15 % of the contract amount shall be released only upon fulfilling this requirement.

F. Criteria for the proposal

The training institutes or individual interested trainer(s) can submit proposals that include but not limited to the following:

- i. **Trainer details** - Please submit the following for the trainers:



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- Extensive experience in the proposed training areas including years of experience in training delivery
 - Industry experience on the subject
 - Certification on the fields required to train
 - Curriculum Vitae
- ii. **Proposal on how you can meet all the requirements under 'Scope of Work' and 'Deliverables' given in this terms of reference.**
 - iii. **Draft course outline and course materials:** submit draft course outline and course materials
 - iv. **Workplan:** Include a work plan indicating the key milestones such as the submission of course materials, etc.
 - v. **Include any additional requirement for the successful delivery of training**
 - vi. **Financial proposal:** Financial proposal for the training delivery shall be in Bhutanese Ngultrum (BTN) inclusive of applicable taxes.

G. Terms and Conditions

The training provider shall abide by the following terms and conditions:

- a. Ensure that the proposed trainer is available for the training dates finalized by the agency.
- b. Make available all the training materials to the participants.
- c. Ensure that all the items under 'Scope of Work' and 'Deliverables' are fulfilled.
- d. Sign and strictly comply with the Code of Conduct and Non-Disclosure Agreement (NDA).
- e. DSP shall reserve the rights to use all the learning resources including the course materials and video recordings developed as part of this engagement.
- f. The payment shall be made as per the payment schedule in Annexure II.
- g. If the trainer is found to be incapable of delivering the training as expected, the contract shall be terminated and all payments withheld.

H. Submission details

The last date for submission of the proposal meeting the TOR requirement is **30 January, 2023** after which the proposal shall not be accepted.

All communication via email shall be considered official.



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The proposal shall be addressed to the Chairman, Dessung Skilling Programme (DSP), Thimphu, Bhutan. The proposal shall be submitted via email to Mr Pema Wangdi at pemaw@moea.gov.bt with a copy to Mr. Sangay Yeshe at sangay.yeshi@ns.bt and Dr. Tshering Cigay: tcd@fdiqnh.bt

I. Evaluation of proposals and notification of results

The proposals will be evaluated by a committee based on the requirements given in this ToR under the guidance of the high level Steering Committee of the Desuung Skilling Program.

The training providers may be contacted for clarifications and presentations during the evaluation process to understand their capabilities better.

The decision of the evaluation committee will be communicated to the training providers once it is endorsed by the Steering Committee, and it shall be final.

The last date for the notification of evaluation results will be **20th March 2023**.

After that, the selected training provider will sign the contract agreements and start the development of the complete course material in close coordination with DSP and complete all necessary ground works to start the training as per schedule.

The tentative course start date is 1 August 2023.



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Annexure 1

Basic Database and Data Structure	
Unit 1 : Introduction	
#	Topic
1.1	Introduction to Database
1.2	Common Terminology
1.3	Data Storage and Data Types
1.4	Data Operation
1.5	Database Design
1.6	Data Access
1.7	Database User
PYTHON PROGRAMMING FUNDAMENTALS	
UNIT 2 INTRODUCTION TO PYTHON	
#	Topic
2.1	Programing Basics
2.2	Set up local programing environment



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2.3	Working on Python interactive console
2.4	DATA TYPES & VARIABLES
2.5	Understanding Data Types
2.6	Working with strings
2.7	Formatting Text & String functions
2.8	Indexing & Slicing Strings
2.9	Introduction to Variables
2.10	Data Type Conversions
2.11	OPERATORS, STATEMENTS & FUNCTIONS
2.12	Basic Python operators
2.13	Understanding Boolean Logic
2.14	Use List and List Methods
2.15	Understanding Tuples & Dictionaries
2.16	Importing modules



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2.17	Conditional statements & loops
2.18	Define functions
2.19	OOP IN PYTHON
2.20	Class, attributes, methods
2.21	Creating objects
2.22	Inheritance, Encapsulation & Polymorphism
2.23	EXTERNAL LIBRARIES & MODULES
2.24	Introduction to Libraires
2.25	Importing and using linraries
2.26	FILE I/O
2.27	Reading and Writing files
Statistics for Data Science	
#	Topic
Unit 3	Statistics-Exploring Data
3.1	Statistics-Basic Term in statistics



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3.2	Statistics-Level of Measurement
3.3	Statistics-Data Presentation
3.4	Statistics-Measure of Central Tendency
3.5	Statistics-Other Measures
3.6	Statistics-Measures of variation
3.7	Statistics-Describing Data (summary measures and graphs)
3.8	Statistics-Hypothesis Testing
Data Analytics using Python & JAVA	
#	Topic
Unit 4	Data Science Project Lifecycle
4.1	Data Exploration and data manipulation using Python and JAVA
4.2	Data Analysis-Visualization using Python/JAVA
4.3	Load Data from CSV, database and API
4.4	Supervised and Unsupervised Learning
4.5	Building data model and predicting & determining model accuracy



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4.6	Importing Deep learning into JAVA Environment
4.7	Choosing and Preparing Data for Deep Learning Model
4.8	Building and Training a Model with a Framework
4.9	Building and Training a Model Without a Framework
4.10	Machine Learning project with JAVA

Annexure 2:

Payment terms/schedule

Sl. No	Payment (%)	Time Frame
1	10%	Upon acceptance of final and complete course materials and course delivery or lesson plan etc.
2	10%	Within a week of commencement of training
2	15	The end of the second month of training
3	15	The end of the third month of training
4	20	The end of the fourth month of training



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5	15	After the training is completed and all the deliverables including the training report, final assessment report, final course content etc. are delivered to the full satisfaction of the client.
6	15	After the final commitment for placement of certain percentage of trainees within 3 months of completion of training is fulfilled