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| **“DIASPORA ENGAGEMENT IN TVET SECTOR” PROJECT (IOM)****- Terms of Reference -** |
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| **I. Introduction** |
| The Rwanda Polytechnic (R.P) is a government institution established by an act of parliament, with a specific mission to promote, facilitate and guide the development and upgrading of skills and competencies for the national workforce in order to enhance competitiveness and employability.The Diaspora Engagement Project under (IOM) with objective to improve access to quality and demand response vocational training. The Project supports eight (8) IPRCS in practical skills training specifically in all the areas indicated above, The Project would like to hire Master Trainers in each of the areas as indicated in the terms of references. |
| **II. Objective of the assignment** |
| The objective of this assignment is to provide trainers in all the **eight (8)** afore-mentioned IPRCs with practical Training, guidance, mentorship, in their respective professional discipline in TVET. |
| **III. Scope of the Services** |
| The scope of services to be provided by each of the Master Trainers shall include but not be limited to the following:* To organize training sessions of trainers, putting into consideration the trainers’ knowledge, skills and attitude,
* To propose suitable didactic strategies for a given training situation,
* To make relevant didactic material with local resources and use it effectively in training,
* To work cooperatively with the training institution’s administrators, special support personnel, colleagues.
* To demonstrate an accurate and up-to-date knowledge of content,
* To implement properly requisite curriculum and provide inputs as content experts to improve these curricula,
* To assign reasonable tasks to trainers.
* To maintain accurate, complete, and appropriate records and files reports promptly,
* To take precautions to protect records, equipment, materials, and facilities,
* To demonstrate communication and interpersonal skills as they relate to interaction with trainers, administrators, and other institution personnel,
* To participation in the work, and take a lead in seminars, educational meetings and courses organized for trainers.
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| **IV. Areas of Intervention**  |
| 1. **Electrical technology**
* Smart grid, SCADA and Industrial Automation (Pneumatics and Hydraulics +PLC and HMI Systems +Variable Frequency Drives Power electronics
* Electrical Systems Programing (Computerized control systems technology)
* Automation and control systems
* Mechatronics
* Power system (generation, transmission and distribution, design, construction, protection, control and management)
* Robotics
* Electrical Systems Design Software Training (E-TAP, SIMLINK, DigSilent, MATLAB Programming, AutoCAD Electrical to mention few)
1. **Electronics and Telecommunication**
* Embedded systems Design and development;
* Electronics systems programming
* Electronic device development
* Radar technology
* Mobile communication
* Microwaves applications
1. **Information Communication Technology**
* Programming
* E-commerce
* Internet of things
* Artificial Intelligence
* Big Data
* Cloud computing
* Network security
* Cyber security
* UAV survey and mapping
* Multimedia and animation
1. **Irrigation and Water Engineering**
* GIS and Remote sensing
* Greenhouse technology
* The use of DEM (Digital elevation model) in catchment delineation ­­and contour mapping
* Water supply software (EPANET)
* Hydraulic structures design and construction (Dams mainly)­
* Design and installation of automated irrigation systems (surface and pressurized)
1. **Food Processing Technology**
* Food processing technologies (Diary, meat, fruit, cereals, tubers, honey, just to mention but a few)
* Food analysis (Standard and quality control)
1. **Veterinary technology**
	* Animal health especially in:
	* Diagnostic methods (Laboratory testing techniques)
	* Animal reproduction technology (both artificial insemination and embryo transfer)
	* Small animal surgery in both soft tissue and orthopedics
	* Artificial /induced reproduction in fish
	* Advanced technology in feed formulation and preparation (Animal nutrition in ruminants and non-ruminants)
	* Software used in research (Data analysis software likes, RStudio, GenStat)
	* Herd, flock heath management (cattle, poultry, Sheep, goat and pig)
2. **Agriculture Engineering and Forest Technology**
* GIS application
* Software for data analysis (Crop WAT, SPSS, GenStat, STATA, SAS)
* Farm machinery operation and maintenance, Green house farming
* Pest and disease management
* Software for engineering drawing (Auto CAD, Arch CAD, Solid works)
* Soil analysis and mapping, precision farming
* Landscape development
* Wood Engineering and Forest Technology (Forest and wood engineers, Wild life Filming and photography, ICT content Developer
1. **Mechanical Engineering**
* Injection pump testing
* Exhaust gas analyzer
* OBD II hand scanner
* Panel beating
* Wheel alignment
* Automotive electronics
* Heat and mass transfer
* Machine element and design
* CAD and CAM, Car Sim, ADMS (just to mention but a few)
* TIG and MIG Welding technology
* CNC Machining and Programming
* Casting and Foundry
* Air condition and Refrigeration
1. **Civil engineering**
* Satellite image acquisition and processing
* Training in modern software used in Civil Engineering (Reinforced concrete Design software,
* Engineering Surveying related software, Architectural Design software)
* Survey camp
* Training in cement and bitumen tests
* Design of multistory building (Reinforced concrete structures)
* Special finishing works and wooden furniture construction
* Carpentry and wood finishing works
* Water supply software (EPANET)
* Plumbing Technologies
* Technology and Terrazzo finishing
* Geotechnical Engineering (Soil investigation, slope stability, stabilized earth retaining walls, underground structures construction, drainage etc…)
* Bridge design and constructions
1. **Alternative energy**
* Peat harvesting and peat power plant operation
* Methane gas extraction and Methane gas power plant operation
* Geothermal power plant construction and operation
* Bio Energy
1. **Forestry Engineering and Wood Technology**
* Forest Harvesting
* Further wood processing
* Use of forestry equipment
* Wood mechanics and technology
1. **Wildlife and Conservation Technology**

* Application of GIS and Remote sensing in Environmental Management
* Environmental Disasters preparedness
* Software used in Ranger Based Monitoring: MIST (Management Information System), and SMART (Spatial Monitoring and Reporting Tool)
* IoT devices in environmental monitoring
* Water analysis (onsite testing and laboratory analysis)
* Soil analysis (onsite testing and laboratory analysis)
* Air quality control technologies
* Solid waste management
* Conservation and Community- Collaboration and Conflict in Saving Elephants
* Wildlife and Behavioral Ecology
* Cooperation and marketing
* Navigation and wilderness techniques
1. **Wildlife Tourism**
* First Aid Techniques
* Computerized Reservation System
* Wilderness navigation
* Tourism Resource Interpretation
* Digital Marking for Tourism Products
1. **Mechatronics Engineering**
* Bio-mechatronics technology
* Fault diagnosis for machinery
* Bio-manufacturing technology
* Modern control engineering
* Introduction to mechatronic technology
* MMS and Sensors
* Modern measurement technology
* Precision and measurements

(Just to mention but a few.) 1. **Applied research and innovation**
* Grant witting
* Innovation process framework
* Software for data analysis (GIS, STELLA, Crop WAT, SPSS, GenStat, STATA, SAS, RStudio, GenStat,…)
* Research and paper writing for publication
* Intellectual Property and Business Protection
1. **Hospitality management**
* International Cuisine ( Italian, Indian, Chinese)
* Pastry (Wedding, anniversary Cakes,…)
* confectionery
* Buffet platter production and presentation
* Hot drinks making
1. **Fashion and design**
* Couture sewing techniques
* Pattern making and draping techniques (Bridal, evening, swimwear and underwear)
* Software for fashion (3D CAD,...)
* Textile design
* Software (GIS, AutoCAD, AutoCAD Civil 3D, OpenRail, InRail, Microstation)
1. **Railway infrastructure Engineering**
* Railway route selection analysis and track alignment design
* Railway track material testing and the railway earthwork and track bed design
* Railway track inspection and maintenance & railway safety procedures
* Railway track components, construction process, railway stations and other railway facilities Design.
* Rail welding and grinding
* Railway track electrical systems, railway traction systems, railway communication systems design, railway planning and operation
1. **Airport management**
* Airline industry Software (Amadeus, fair calculation,….)
* Obstacle limitation surface, ground operation and safety
* Aircraft marshalling
* Airport rescue and fire fighter
* Flight operation dispatch
* Airport planning and airspace protection
1. **Aircraft maintenance**
* Aircraft Assembly and Rigging
* Aircraft Structural materials reparation
* Maintenance of Aircraft auxiliary systems
* Maintenance of aircraft cabin environmental control system
* Aircraft inspection and ground handling

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| **V. Required Experience, Qualifications and Competences** |
| RP and IOM will consider consultants with the following minimum experience, qualifications and competencies:* Possessing a tertiary qualification in respective trade or related field;
* At least five years of experience in the respective trade industry;
* Proven experience in inventory management;
* Ability to train people under pressure and multi-task at work;
* Proven experience in preparing lesson plans and use appropriate materials, service tools and equipment according to their classroom's needs trainings for respective trade;
* Ability to coach trainers on best practices, methods and systems of quality assurance in practice and training in the respective trade;
* Proven experience in hands-on work (practice vs theory);
* Ability to teach the respective trade to audiences with various levels of understanding;
* Knowledgeable in best practices on time management, project management, and effective use of appropriate computer technology;
* Ability to coach trainers on proper product delivery techniques, as well as handling complaints and concerns of trainees;
* Ability to maintain professional image and attitude;
* Proven track record of business development and maintaining client relationships, including working with senior decision makers in companies;
* Proven experience in managing projects to deadlines;
* Good understanding of business and sustainable development, with particular focus on the respective trade;
* Knowledge of health and safety regulations in the respective workshops;
* Knowledge of the products, facility, sector and industry;
* Strong interpersonal skills and team work spirit.

 Desirable:* Holding professional certificates, registered & membership of professional associations,
* Experience/knowledge of regional social-economic values is an added advantage,
* Workplace Hazardous Materials Information System (WHMIS) training is an asset.
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| **VI. Supervisors**  |
| Project Manager – IOM and Rwanda Polytechnic |
| **VII. Source of Funds** |
| INTERNATION ORGANIZATION FOR MIGRATIOM (IOM) |
| **VIII. Duration and Location** |
| The contract will run for a period of at least 1 Month and the assignment will be undertaken in one of the eight (8) different IPRCS namely IPRC Kigali ,IPRC Ngoma , IPRC Gishari , IPRC Tumba, IPRC Musanze, IPRC Karongi , IPRC Huye and IPRC Kitabi. |
| **IX. Reporting Obligations and Deliverables** |
| The Master Trainer shall work under the overall technical supervision of the respective IPRC Deputy Principal in charge of Academics/Training. The Master Trainer will take instructions for his/her day-to-date functions from the particular head of department/trade under whom the training offer directly falls. It is this latter office that will confirm his/her work plans and screen his/her delivery of allocated tasks for approval by the respective line managers.The Master Trainer shall for all other administrative and contractual matters liaise with the Project Manager of IOM including the submission of monthly reports to the Project Manager of IOM with written endorsement of the aforementioned technical supervisors. |

Approved by:

Dr. Sylvie MUCYO

Deputy Vice Chancellor- TIDR

Rwanda Polytechnic