

Essential Skills for Research Proposals and Projects

SKILLS&TOOLS ACADEMIC SHORT COURSE 2025

Background – About This Course

Research is essential for the advancement of knowledge and the development of various fields, and it plays a crucial role in academic and scientific communities. All research projects begin with a research proposal – a plan of study to be carried out with the aim of convincing funders, sponsors and stakeholders of its significance and feasibility. That is, research proposals are vital for structuring research efforts, securing funding, guiding the research process, and establishing accountability, making them an essential component of academic and professional research endeavors. However, developing a winning research proposal can be a daunting task often fraught with several pitfalls such as poorly defined research problem, misalignment of research questions and objectives, weak justification of project significance, inadequate literature review, poor identification of research gaps, poorly articulated methodology and design, lack of adherence to institutional and call guidelines, and many more. There is the need for clear guidance, methodical hands-on engagement, and real-world practice sessions for participants to develop the competences for writing winning research proposals and managing projects. Accordingly, this online course on Essential Skills for Research Proposals and Projects seeks to strengthen the capacity and skills in research proposals and projects for young scholars and professionals in transport and mobility research and practice.

COURSE BRIEF

• Online Course:	Comprehensive, Certified, and Asynchronous Training.
• Online Registration:	https://forms.gle/xtK5WZCAVXxU6t7m8
• Contact Email:	gis.tutor.x@gmail.com
• Contact Phone:	+233 242035731; +255 688904887
• Course Duration:	10 February – 21 March 2025
• Registration Deadline:	5 February 2025
• Opening Day/Time:	11.00am UTC, Monday, 10 February 2025
• Course equivalent to:	Full 3-credit hour postgraduate course for transport systems, logistics, urban planning, transport geography, and related fields.
• Note:	No prior knowledge of research proposals and projects is required.

WHAT YOU WILL LEARN

- The workflow for developing and managing research proposals and projects.
- Competencies for developing and writing key elements of research proposals.
- Communication and writing skills for carrying out research proposals and projects.
- Competencies for managing real-world research projects.
- Develop and write a competitive and winning research proposal in response to a grant call.

FORMAT

This online course is organized into six (6) units, where each comprise the following items.

- Pre-recorded lessons to be accessed asynchronously.
- Practice writing sessions involving real-world transport and logistics research.
- Graded discussion forum, and a quiz.

Course Completion

Participants who have successfully completed this online course will be awarded a *certificate of completion*. Successful completion is conditioned upon meeting the following requirements.

- Completion of all registration requirements.
- Attendance, participation, and completion of all learning activities including quizzes and discussions.
- Submission of a complete proposal for the capstone mini project.
- Submission of a poster for the capstone mini project.
- Completion of the course evaluation and feedback questionnaire.

LEARNING OBJECTIVES

Upon completion of the *Essential Skills for Research Proposals and Projects* course, participants would acquire skills in the following areas.

- Knowledge, understanding, and cognitive skills in developing and managing research proposals and projects.
- Acquire and use project design skills to comprehensively plan research projects.
- Develop and write a winning research grant proposal.
- Develop the competence to manage large research projects.
- Practical and professional proficiency in developing and managing real-world research projects.

TARGET GROUPS FOR THE COURSE

- Postgraduate (Masters, PhD), Postdoc Scholars, and Early-Career researchers
- Transport and Logistics Professionals, and Academics
- National Road & Transport Agency Executives
- Highway Engineers and Managers
- Supply Chain and Logistics Professionals
- Federal, State, and Local Transport and Logistics Agencies
- Private Consultants & Contractors

COURSE PLAN

Unit	Topic	Unit Details
1.	Introduction to Essential Skills for Research Proposals and Projects	<ul style="list-style-type: none"> ▪ Research grant, its life cycle and key components. ▪ Pre-award and post-award activities. ▪ Key elements of the proposal development process. ▪ Finding research grant opportunities. ▪ Generating ideas for proposal development.

Unit	Topic	Unit Details
2.	Conceptualizing and framing research proposals	<ul style="list-style-type: none"> ▪ Proposal development process. ▪ Key components of a research proposal. ▪ Developing and writing research problems and questions. ▪ Carrying out a literature review. ▪ Identifying research gaps.
3.	Writing skills for research proposal and projects	<ul style="list-style-type: none"> ▪ Scientific writing and communication. ▪ Words, phrases, and sentence composition. ▪ Mechanics, cohesion, coherence, emphasis, and concision. ▪ Transitions, and paragraphs. ▪ Composing specific elements of research proposals.
4.	Writing the research proposal	<ul style="list-style-type: none"> ▪ Organizational structures for writing research proposals. ▪ Problem-Solution Texts. ▪ Problem-Process-Solution Texts. ▪ Writing abstracts and contributions. ▪ Writing introductions. ▪ Writing research designs and methodologies.
5.	Project management and budgeting	<ul style="list-style-type: none"> ▪ Research Projects and Project Lifecycle. ▪ Work Breakdown Structure. ▪ Project Work Plans, Schedule and Gantt Chart. ▪ Project Budgeting and Cost Estimation. ▪ Constraints and Triple Constraints of Project Management. ▪ Risk Identification, Assessment and Management. ▪ Stakeholder Identification and Management ▪ Research Communication. ▪ Ethical Considerations and Standards.
6.	Capstone Mini-Project	<ul style="list-style-type: none"> ▪ Proposal conception and framing ▪ Literature review ▪ Methodology ▪ Poster preparation for capstone mini project ▪ Guidelines for preparing a poster

INTERACTIVITY/FEEDBACK FROM STUDENTS

This online course is organized into six (6) units, where each comprise the following items.

- Pre-recorded lessons to be accessed asynchronously.
- Practice writing sessions involving real-world transport and logistics research.
- Graded discussion forum, and a quiz.

The graded discussion forum will facilitate feedback from participants on each unit. Also, course announcements will allow for general feedback from participants.

FREQUENCY OF IMPLEMENTING THE COURSE (NUMBER OF COHORTS)

The course will be run two times in 2025. The first run is scheduled for February-March 2025, whereas the second run is planned for June-July 2025. It is possible a third run will be carried out based on retention of course facilitators and their remuneration. The number of cohorts for each course run is 200, based on our facilitation team and resources. But to achieve this number as participants who fully complete the course, we plan to enroll as many as 300 participants.

EXAMINATION/GRADING

Participants are evaluated in a variety of ways in this online course.

- **Participation:** This is measured by the number of course materials and exercises a participant is able to access. Access to course materials and exercises is based on completing previous tasks, which allows us to measure the tasks participants have attempted.
- **Graded quizzes:** Each unit has a mandatory quiz to assess participants' knowledge base.
- **Graded discussions:** Each unit has a discussion forum to assess participants' interaction with course topics and responding to other course participants' questions and inputs.
- **Writing exercise:** Each unit has a writing assignment to assess participants' writing skills.
- **Captone Mini Project:** A final writing exercise to develop a complete proposal in response to a hypothetical grant call.
- **Poster Presentation:** Each participant will be given a chance to present his/her research proposal in a poster format in an online forum.

COURSE POINTS OR ACCREDITATION

Participants who have successfully completed the online course will be awarded a certificate of completion. The course is designed to satisfy the requirement for a 3-credit postgraduate course and is aimed to be integrated into the MSc. and PhD Transport Systems programs at TRECK-KNUST. The programs at TRECK-KNUST are already accredited, and we are allowed to modify existing courses within the program.

COURSE EVALUATION

Two course surveys are designed to be implemented in an anonymous manner through the online learning management system.

- **Pre-course survey:** This focuses on basic background information about course participants and their expectations of the course.
- **Post-course evaluation:** This is designed to obtain anonymous learner expectations and feedback on the following themes: purpose specified at the beginning, participant self-evaluation, instructional experience, course structure, instructor feedback, course material feedback, teaching aids, open-ended questions, and overall rating. This feedback will be used to improve the overall quality of the course, enhance learner experience, and guide subsequent course improvement and delivery.

COURSE TEACHING TEAM

Lead Instructor

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- Prof. Gift Dumedah, Department of Geography and Rural Development, Regional Transport Research and Education Centre Kumasi (TRECK), Kwame Nkrumah University of Science and Technology (KNUST), Kumasi, Ghana.

Supporting Instructors

- Prof. Mrs. Abena Agyeiwaa Obiri-Yeboah – Department of Civil Engineering, Kumasi Technical University (KsTU), Kumasi, Ghana.
- Dr. Jacqueline E. Masaki – Department of Transportation and Geotechnical Engineering University of Dar es Salaam (UDSM), Tanzania.
- Dr. Simon Ntramah – Transportation Engineering Division, CSIR-Building and Road Research Institute, Kumasi Ghana.