### AIIQ3114: BIBLIOMETRICS AND SCIENTOMETRICS PROF. TOM KWANYA

PURPOSE OF THE COURSE

The purpose of this course is to equip the learners with the essential skills to conduct and document a credible analysis of the impact of information resources and publications on the generation and sharing of applicable knowledge in the society.

EXPECTED LEARNING OUTCOMES

At the end of the course, the students should be able to:

1. Distinguish bibliometrics from scientometrics as well as related concepts such as informetrics;
2. Apply appropriate tools and methods to conduct bibliometrics and scientometrics analysis;
3. Conduct social network analysis to measure collaboration in the production of scientific material;
4. Identify and use open access sources of credible scientific products and information materials; and
5. Contribute to research production in Kenya.

COURSE CONTENT

This course covers the history of and institutionalisation of scientometrics; foundations of scientometrics and bibliometrics; scientometrics and bibliometrics indicators; bibliometric ranking; citation analysis; as well as research collaboration and co-authorship analysis. The course also discusses the place and practice of peer review in a user-generated content context. It also covers scientometrics and bibliometrics methods such as webometrics, analytics, log files analysis; and referrer analysis, among other approaches. The other topics covered by the course include scientific research and policy evaluation; social network analysis; open access publishing; and scientific research quality indicators.

MODE OF DELIVERY

Lectures, tutorials, class discussions, seminars

INSTRUCTIONAL MATERIALS/EQUIPMENT

Computers, LCD projector, internet access

COURSE ASSESSMENT

Continuous Assessment Tests (CATs) = 30 marks

End Semester – Written Examination = 70 marks

COURSE SCHEDULE

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| **Date** | **Activity** | **Topic** |
| Week 1 | Lecture | Introduction to bibliometrics and scientometrics |
| Week 2 | Lecture | Bibliometrics and scientometrics indicators |
| Week 3 | Lecture | Bibliometrics and scientometrics laws |
| Week 4 | Lecture | Scholarly communication and open access publishing |
| Week 5 | CAT 1 | Sit-in CAT |
| Week 6 | Lecture | Social network analysis |
| Week 7 | Lecture | Citation analysis |
| Week 8 | Lecture | Webometrics, Altmetrics and Web analytics |
| Week 9 | Lecture | Research production in Kenya |
| Week 10 | Practical | Sit-in CAT |
| Week 11 | Examination | Examination |
| Week 12 | Examination | Examination |

CORE READING MATERIALS

**Cronin**, B. & Sugimoto, C. (2014) *Beyond bibliometrics: harnessing multidimensional indicators of scholarly impact*. Cambridge, Massachusetts: The MIT Press.

**Ingwersen**, P. (2012) *Scientometric indicators and webometrics and the polyrepresentation principle information retrieval*. New Delhi: Ess Ess Publications.

**Rao**, I.K.R., Neelmeghan, A. & Ranganathan, S.(2014) *Scientometrics*. New Delhi: Ess Ess Publications.

**Russell**, J. and Cohn, R. (2012) *Scientometrics*. Stoughton: Book on Demand.

**Sohail**, N. (2012) *Bibliometric analysis of knowledge management*. Saarbrücken: Lambert Academic Publishers.

RECOMMENDED READING MATERIALS

**Ball, R.** (2017). *An Introduction to Bibliometrics: New Development and Trends*. Chandos Publishing.

**Ding**, Y., Rousseau, R. & Wolfram, D. (2014) *Measuring scholarly impacts: methods and practice*. New York: Springer.

**Mehler**, A., Sharoff, S. & Santini, M. (2011) Gingras, Y. (2016). *Bibliometrics and research evaluation: Uses and abuses*. MIT Press.

**Ngulube** et al (2011) Proceedings of ISSI 2011: the 13th conference of the International Society for Scientometrics and Informetrics. Leuven, Belgium.

**Stuart**, D. (2014) Web metrics for library and information professionals. London: Facet Publishing.