**ENGR 201 – Techniques in Research**

**Worksheet – Citations**

1. In this class you have the option to use one of the following citation standards: IEEE, MLA, or APA. Review your preliminary list of citations—or an updated version—created using RefWorks or equivalent. Revise the bibliography to match the standard of your choice. The citations are never imported perfectly!
2. As a class, we will review Tong and Elimelech, 2016 to complete the following exercise:
   1. How are citations handled within the text? Provide two examples:

The reference is referenced by a number and labeled sequentially based on when it is referenced in the paper. The number representation of the reference with superscript.

* Freshwater scarcity, one of the most critical global challenges of our time, poses a major threat to economic growth, water security, and ecosystem health.1−3
* As a result, ZLD has long been considered not viable and has been applied only in limited cases.5
  1. What type of things are cited. Provide two examples:

Background information, and motivations the paper is driven from.

* Freshwater scarcity, one of the most critical global challenges of our time, poses a major threat to economic growth, water security, and ecosystem health.1−3

Data that supports the idea of the paper.

* The global market for ZLD is estimated to reach an annual investment of at least$100−200 million,6,7
  1. What types of references are used (e.g. journal papers, web sites, etc.)?

Online articles, journal papers, government websites articles, news articles

* 1. Comment on the authors’ use of citations and references. Is it effective?

The references in Tong and Elimelech’s paper is clean and concise manner. It is effective for readers to retrieve source information.

1. As a class, we will review another article (Broll et al. 2018) to complete the following exercise:
   1. How are citations handled within the text? Provide two examples:

The references are sorted by alphabetical order and the order of reference of the citation in text. It is wrapped with square brackets.

* Computational thinking (CT) has been described as a general analytic approach to problem-solving, designing systems, and under-standing human behaviors [33,6]
* Visual programming languages have come to play a prominent role in this movement and have been used to teach children programming [20,17] as well as computational modeling [28,4].
  1. What type of things are cited. Provide two examples:

Background information about computational thinking

* Computational thinking (CT) has been described as a general analytic approach to problem-solving, designing systems, and under-standing human behaviors [33,6]

Issue with learning programming

* When students try to assemble language elements, they often get confused with syntax problems as they struggle to understand semantic ones [23].
  1. What types of references are used (e.g. journal papers, web sites, etc.)?

Textbook, government website, journal papers, online dataset, official websites.

* 1. Comment on the authors’ use of citations and references. Is it effective?

The citation style is less effective.

1. Use one of your referenced materials (e.g. journal paper) to complete the following exercise:

N. Pooniwala and R. Sutar, “Forecasting Short-Term Electric Load with a Hybrid of ARIMA Model and LSTM Network,” 2021, pp. 1–6, doi: 10.1109/ICCCI50826.2021.9402461 [Online]. Available: https://ieeexplore.ieee.org/document/9402461

* 1. How are citations handled within the text? Provide two examples:

Reference is labeled sequentially in the order of when the paper is referenced in the writing with IEEE format. The numbers are wrapped with square brackets.

* For smart grid performance improvement, several algorithms and models have been proposed and implemented till date, many of them being reviewed in [1].
* Various methods for the same have been studied which include multivariate modeling [8], uni-variate time series prediction [9], artificial neural networks, and various hybrid methods [10], [11], [12], [13].
  1. What type of things are cited. Provide two examples:

Pervious work has been done on time series forecasting models, like reviews and proposed hybrid models.

* Various methods for the same have been studied which include multivariate modeling [8], uni-variate time series prediction [9], artificial neural networks, and various hybrid methods [10], [11], [12], [13].

Figures from other paper

* Fig. 2. The LSTM block structure [21]
  1. What types of references are used (e.g. journal papers, web sites, etc.)?

Journal papers, conference paper, textbook, online datasets

* 1. Comment on the authors’ use of citations and references. Is it effective?

The citation format is clean and effective.

1. What did you cite in your topic summary (or what should you have cited)? Provide examples:

5 references are cited.

* Stock market is one of the best investments for most people [1].
* The Autoregressive integrated moving average, ARIMA, is widely used in time series forecasting due to its ability to perform short-term prediction [2].

1. Read the partial Introduction attached. In each place that you think a citation should be used, mark it with a star. After doing this, how many stars do you have?

Total of 17 \*

# Introduction

Like other impacted estuaries in the world,\* chronic and recurrent low dissolved oxygen (DO) conditions have persisted in the tidal portion of the San Joaquin River (SJR) for decades.\* Inadequate DO has led to the loss of fisheries and impairment of the river as a water supply for domestic, agricultural, and industrial purposes.\* In response, regulators have placed sections of the SJR on the 303(d) list for noncompliance with DO standards and calculated the total maximum daily load (TMDL). Resolution of low DO conditions in the SJR has become a major focus of ecosystem restoration efforts and TMDL implementation in California.\*

In some respects, development of anoxic conditions in the SJR Estuary is similar to what is observed in other parts of the world.\* Watershed-derived anthropogenic nutrients contribute to eutrophication and result in decreased DO.\* Unique aspects of the SJR, however, make delineation of responsibility—an essential part of the TMDL process—challenging. Unlike many other estuaries, the section of the SJR most affected by low DO—the Deep Water Ship Channel (DWSC)—is a freshwater estuary that has been dredged and channelized for navigation.\* Although water quality problems persist throughout the SJR, low DO is most prominent in the estuary. The sources causing this impairment are well-documented although the relative contributions of these sources are not clearly understood.

Contributing to DO impairment are large quantities of anthropogenic nutrients and organic materials that lead to eutrophication. Within the watershed, anthropogenic nutrients are primarily derived from agriculture.\* These nutrients cause excessive phytoplankton growth during the hot and dry summers, which contribute to mass loads of oxygen-demanding substances (ODS) observed along the main stem of the river. The semi-arid climate of Central California results in abundant sunlight that fuels phytoplankton growth as well as high water temperatures that limit DO capacity.\* Phytoplankton growth is further stimulated by the river’s shallow depth. Phytoplankton (measured by chlorophyll-a) correlates strongly with biochemical oxygen demand (BOD).\* Terrestrial carbon also appears to contribute to watershed-derived ODS.\*

Other sources of DO impairment are the City of Stockton Regional Wastewater Control Facility (RWCF) and urban runoff from the City. The combination of nutrient and oxygen-demanding inputs from agricultural and urban sources is typical in TMDLs developed in other watersheds.\* Ammonia from point and non-point sources has been identified as a major contributor to low DO. Historically, effluent from the non-nitrifying RWCF contained high ammonia concentrations.\* The extent to which urban runoff contributes to ODS in the DWSC is unknown. In November 2002,\* high ODS concentrations were noted in stormwater discharged from the City during a large storm, and subsequently, later that winter the DWSC became hypoxic (DO ≤ 2 mg L-1) and fish kills were observed.\*

Dredging of the SJR Estuary has also contributed to low DO. The deepened channel limits the proportion of the water column in the photic zone, which limits photosynthesis and the resulting DO production. Due to light limitations, phytoplankton from the SJR undergoes massive respiration within the DWSC, which consumes DO.\* The deepened channel has resulted in long residence times of 4 to 30 days within the DWSC, further exacerbating the respiration of phytoplankton.\* Residence times are longer in summer and fall when river flows are low due to increased agricultural diversions and decreased regulated flows from reservoir releases. The result is that low DO is related to river flow, although the relationship is complex and requires further study. The deepened ship channel also limits reaeration due to the low surface area to volume ratio. \*