

# Understanding Mental Health and Stress Management

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*...as it relates to the undergraduate engineering program...*

We take pride in understanding natural phenomena so that we can manipulate our environment to suit our purposes

It's possible to understand mental health to optimize student learning experiences and outcomes

*...as it relates to the undergraduate engineering program...*

- Current circumstance:
  - Having a propensity for high-performing, highly technical skillsets comes with a higher risk of depression and anxiety
  - We are currently providing highly variable online teaching methods – a recipe to exacerbate mental health issues if care is not taken
- Outcomes from improvements to student mental health
  - Learning to manage and work with mental health challenges, rather than fight with them or fit them into a “convenient” box, will lead to more productive outcomes
  - Academic performance “signals” in response to stress management improvements may be more prominent under current remote teaching conditions

# How can the School of Engineering lead the way on the Okanagan campus for online teaching?

We teach our students to understand and apply concepts to solve problems and arrive at desirable outcomes.

We can practice what we preach and improve academic outcomes by understanding and designing mental health and stress management solutions in light of the pandemic and remote learning challenges.

# Where'd I pick up this understanding? *(using myself as an example...)*

- A rare academic “accomplishment”
  - University career started with very poor performance due to mental health challenges
  - “Collected” all possible grades: F, D, D+, C-, C, C+, B-, B, B+, A-, A, A+
  - Experience leads to understanding
- Successes through understanding
  - Identifying my own limitations has provided opportunities for optimizing performance
  - Notable accomplishments:
    - CSCE Donald Stanley award (best paper in environmental engineering), award-winning consulting work, top ten at national mountain running championships

# Where'd I pick up this understanding? *(using myself as an example...)*

- Several years of high-pressure flood-response as a consulting engineer
  - Within six months of MSc. graduation became one of the lead engineers in the 2013 Southern Alberta flood response
  - Had to make quick decisions that affected people and their homes while sleep deprived and emotionally exhausted
  - Balanced conflicting needs from highly emotional stakeholders
- Competitive ultramarathon racing
  - 50km to 200 km trail races through the mountains
  - Mind over matter – learn to push far past physical barriers, quickly learn that your mind is capable of getting you to do more than you ever imagined

Where'd I pick up this understanding?  
*(using myself as an example...)*

Undesirable Conditions lead to:

Sub par performance due to mental/emotional inhibition

Optimized Conditions lead to:

Highly exceptional performance

# Strategies for Managing Mental and Emotional Stress

1. Take “I Should” statements out of your vocabulary
  - Thinking “you should” be doing something doesn’t change the fact that you aren’t doing that thing – it is unproductive, and leads to a toxic cycle of beating yourself down.
  - Explore why you aren’t doing the thing you think you should be doing without judgement – learn about why we procrastinate, it’s a fascinating subject.
2. Prioritize what actually needs to be done and be okay with ignoring the rest
  - Much of the stress and anxiety we can face is due to too much “stuff” on our plates
  - Explore ways that you can reduce obligations temporarily to give important items the needed attention



# Strategies for Managing Mental and Emotional Stress

3. Break up your day with 5-10 minute breaks for exercise every few hours
  - This will make you feel good and actually makes you smarter!
  - Running, cycling, push-ups, stairs, etc. – anything that gets your heartrate elevated
  - You may feel like you are taking up precious work time, but this will actually make the time you spend working more productive
  
4. Remind yourself that we're all in this together
  - A simple thought, but knowing others are going through the same thing brings a sense of community that helps us all get through tough times
  - Talk to others, make light-hearted jokes about the situation, and “sandwich” the negatives with positives

# Forehead to Fingertips Relaxation

- When we panic, we go into fight or flight mode, taking mental resources away from the intellectual parts of our brain – i.e. you become unable to think past survival and your IQ drops
- Exams are the worst – we panic, and we need to think! Not a good combination...
- This strategy provides a method to force your body out of fight or flight and divert resources back to the intellectual parts of our brain

# Forehead to Fingertips Relaxation

1. Breathe out fully, and then take a deep breath in, and then out again.
2. Focus completely on the following sequence of muscle relaxations:
  - Forehead
  - Eyebrows
  - Eyelids
  - Widen your gaze to your peripherals (fight or flight gives us tunnel vision)
  - Jaw
  - Mouth
  - Neck
  - Shoulders
  - Biceps
  - Forearms
  - Palms
  - Fingers
  - Fingertips
3. Breathe out fully, and then take a deep breath in, and then out again.

## *Now let's talk misconceptions...*

With our common understanding established, here's a few unproductive misconceptions:

“High pressure exam situations prepare students for real world situations.”

- Technical expertise is not commonly tested in high pressure environments in the real world
- Soft skills are more commonly needed in high pressure environments (and are rarely discussed in engineering programs!)

## *Now let's talk misconceptions...*

With our common understanding established, here's a few unproductive misconceptions:

DRC accommodations make things “easier” for the student and are far too easy to obtain

- DRC facilitates opportunities to reflect students aptitude, given increased susceptibility to “fight or flight” conditions

## *Now let's talk misconceptions...*

With our common understanding established, here's a few unproductive misconceptions:

“Giving exceptions to students for stress-related hardships is unfair to other students.”

- Allowing a student flexibility to identify and address mental health or stress challenges provides opportunities for growth.
- Identification of issues should be rewarded with a chance to find a solution.
- This does not mean that a student can use the same “excuse” repeatedly.
- Empower students with opportunities to solve their own problems.

# Summary and Recommendations

- This understanding facilitates the development of good practices to help ease stress and improve outcomes
- Be curious and non-judgemental towards stress and anxiety
- Manage your expectations – unrealistic expectations lead to disappointment
- Be open to providing or accepting help as it is needed – no one can do everything on their own

# Summary and Recommendations

Productive approaches for positive student engagement:

- “We are all in this together”
- Expressing the difficulties that you are having with developing course plans, given remote teaching challenges
- Providing students with a perception of control over their own learning opportunities
  - Anxiety is related to feeling a loss of control
  - When designing final exam for Engr 342, I reached out to DRC students to ensure that the non-traditional exam format would be suitable



# Summary and Recommendations

Students and instructors can approach online teaching from one of two ways:

Focus on the fact that we are faced with sub-optimal learning opportunities

**OR**

Focus on optimizing learning opportunities in light of our circumstances

# Summary and Recommendations

Students and instructors can approach online teaching from one of two ways:

**Focus on optimizing learning opportunities in light of our circumstances**

If we focus on thriving in uncertainty and change, we can provide students with highly valuable skills that they wouldn't have the opportunity to develop under normal circumstances.

Thank You!